

Compilation of Changes to the CPC Scheme Between 2024.08 and 2025.01

Presentation Details

- Entries for new symbols and headings: *Black text in italics*
- Entries for existing symbols and headings
- text insertions: *Green text in italics*
 - text deletions: ~~Red strikethrough text with grey background~~
- Entries for deleted symbols and headings: ~~Black strikethrough text~~
- In cases when the originating project cannot be found, "Unknown" is given for the Project information.
 - Projects ending in "-F" indicate finalisation after reclassification was completed.

Project: Unknown (A01B)

- U A01B 29/00** **Rollers {(rollers for roads [E01C](#))}**
- U A01B 29/04** • with non-smooth surface formed of rotatably-mounted rings or discs or with projections or ribs on the roller body; Land packers
- U A01B 29/041** • • {of "Cambridge"-type, i.e. the soil-pressing rings being stacked on a shaft}
- M A01B 29/043** • • • {~~Tire~~*Tyre*-packers}

Project: MP12350 (A01B)

- M A01B 49/00** **Combined machines ~~(auxiliary devices attached to machines of a different kind, e.g. harrows attached to ploughs, see the relevant groups for the machines)~~**

NOTE

Auxiliary devices attached to machines of a different kind, e.g. harrows attached to ploughs, see relevant groups in [A01B 3/00](#) - [A01B 47/00](#) for the machines.

Project: RP10470 (A01D)

- M A01D 7/00** **Rakes (mowers convertible to rakes or capable of raking [A01D 42/02](#); mowers combined with rakes [A01D 43/02](#))**

WARNING

Groups [A01D 7/00](#), [A01D 7/02](#), [A01D 7/04](#), [A01D 7/06](#), [A01D 7/08](#) and [A01D 7/10](#) are incomplete pending reclassification of documents from group [A01G 20/40](#).

All groups listed in this Warning should be considered in order to perform a complete search.

Project: Unknown (A01D)

- U A01D 34/00** **Mowers (combined with apparatus performing additional operations while mowing [A01D 37/00](#) - [A01D 41/00](#), [A01D 43/00](#); convertible to apparatus for purposes other than mowing or capable of performing operations other than mowing [A01D 42/00](#)); Mowing apparatus of harvesters**
- U A01D 34/01** • characterised by features relating to the type of cutting apparatus
- U A01D 34/412** • • having rotating cutters
- U A01D 34/63** • • • having cutters rotating about a vertical axis
- U A01D 34/67** • • • • hand-guided by a walking operator
- U A01D 34/68** • • • • • with motor driven cutters or wheels
- U A01D 34/6806** • • • • • {Driving mechanisms (for the cutters [A01D 34/76](#))}
- M A01D 2034/6825** • • • • • {being ~~tire~~*tyre* driven}

Project: RP12462 (A01G)

M A01G **HORTICULTURE; CULTIVATION OF VEGETABLES, FLOWERS, RICE, FRUIT, VINES, HOPS OR SEAWEED; FORESTRY; WATERING (picking of fruits, vegetables, hops or the like [A01D 46/00](#); propagating unicellular algae [C12N 1/12](#))**

WARNINGS

1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:

[A01G 33/02](#) covered by [A01G 33/00](#)

2. {In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.}

Project: RP10470 (A01G)

U A01G 3/00 **Cutting implements specially adapted for horticultural purposes; Delimbing standing trees (forestry delimbers [A01G 23/095](#))**

M A01G 3/002 • {for comminuting plant waste ~~(comminuting by cutting implements in general [B02C 18/00](#))~~}

U A01G 3/08 • Other tools for pruning, branching or delimbing standing trees

M A01G 3/083 • • {Manual pruning saws ~~(saws in general [B27B](#))~~}

M A01G 3/085 • • {Motor-driven saws for pruning or branching ~~(saws in general [B27B](#))~~}

M A01G 3/086 • • • {Chain saws ~~(chain saws in general [B27B 17/00](#))~~}

M A01G 3/088 • • • {Circular saws ~~(circular saws in general [B27B 5/00](#))~~}

U A01G 9/00 **Cultivation in receptacles, forcing-frames or greenhouses (of mushrooms [A01G 18/00](#); soilless cultivation [A01G 31/00](#)); Edging for beds, lawn or the like**

D A01G 2009/003 • {Receptacles consisting of separable sections, e.g. for allowing easy removal of the plant}

<administratively transferred to [A01G 9/0302](#) INV>

M A01G 9/006 • {~~Labels or label holders specially adapted for plant receptacles~~ *Plant receptacles specially adapted as labels or label holders*}

U A01G 9/02 • Receptacles, e.g. flower-pots or boxes (self-acting watering devices [A01G 27/00](#); hanging flower baskets, holders or containers for flower-pots [A47G 7/00](#)); Glasses for cultivating flowers

U A01G 9/029 • • Receptacles for seedlings (growth substrates in block form [A01G 24/44](#))

U A01G 9/0299 • • • {Handling or transporting of soil blocks or seedlings}

N A01G 9/0302 • • {*Receptacles consisting of separable sections, e.g. for allowing easy removal of the plant*}

U A01G 9/04 • Flower-pot saucers

M A01G 9/047 • • {Channels or gutters, e.g. for hydroponics}

WARNING

Group [A01G 9/047](#) is incomplete pending reclassification of documents from group [A01G 31/02](#).

Groups [A01G 31/02](#) and [A01G 9/047](#) should be considered in order to perform a complete search.

M A01G 9/12 • Supports for plants; Trellis for strawberries or the like (~~{trellis-work for vines [A01G 17/06](#)}~~; stays for trees, props for vines [A01G 17/14](#))

Project: RP12462 (A01G)

- M A01G 9/14 • Greenhouses ~~(cloches A01G 13/04)~~
- M A01G 13/00 **Protecting**~~Protection of~~ plants (~~apparatus for the destruction of vermin or noxious animals A01M; use of chemical materials therefor, composition of protective materials, e.g. grafting wax, A01N~~**greenhouses A01G 9/14**)
- U A01G 2013/004 • {Liquid mulch}

Project: RP10470 (A01G)

- D A01G 2013/006 • {with perforations}
- D A01G 2013/008 • {using straw}

Project: RP12462 (A01G)

- D A01G 13/02 • ~~Protective coverings for plants; {Coverings for the ground;}~~ Devices for laying-out ~~{or removing}~~ coverings
<administratively transferred to [A01G 13/20](#)>
- D A01G 13/0206 • • {Canopies, i.e. devices providing a roof above the plants}
<administratively transferred to [A01G 13/21](#)>
- D A01G 13/0212 • • • {for individual plants, e.g. for plants in pots}
<administratively transferred to [A01G 13/22](#)>
- D A01G 2013/0218 • • {for removing}
<administratively transferred to [A01G 13/372](#) INV>
- D A01G 13/0225 • • {Wind breakers, i.e. devices providing lateral protection of the plants}
<administratively transferred to [A01G 13/23](#)>
- D A01G 13/0231 • • {Tunnels, i.e. protective full coverings for rows of plants (dismountable or portable greenhouses A01G 9/16)}
<administratively transferred to [A01G 13/24](#)>
- D A01G 13/0237 • • {Devices for protecting a specific part of a plant, e.g. roots, trunk or fruits}
<administratively transferred to [A01G 13/27](#)>
- D A01G 13/0243 • • {Protective shelters for young plants, e.g. tubular sleeves}
<administratively transferred to [A01G 13/28](#)>
- D A01G 13/025 • • {Devices for laying-out or removing plant coverings (for ground coverings A01G 13/0287)}
<administratively transferred to [A01G 13/29](#)>
- D A01G 13/0256 • • {Ground coverings}
<administratively transferred to [A01G 13/30](#)>
- D A01G 13/0262 • • • {Mulches, i.e. covering material not pre-formed in mats or sheets (A01G 13/0281 takes precedence; composition of mulches C09K 17/52)}
<administratively transferred to [A01G 13/35](#)>
- D A01G 13/0268 • • • {Mats or sheets, e.g. nets or fabrics (A01G 13/0281 takes precedence)}
<administratively transferred to [A01G 13/32](#)>
- D A01G 13/0275 • • • • {Films}
<administratively transferred to [A01G 13/33](#)>
- D A01G 13/0281 • • • {Protective ground coverings for individual plants, e.g. for plants in pots (coverings around trees forming part of a road E01C 9/005)}
<administratively transferred to [A01G 13/31](#)>

- D A01G 13/0287
 - • {Devices for laying-out or removing ground coverings}
 - <administratively transferred to [A01G 13/37](#)>
- D A01G 13/0293
 - • {Anchoring means for ground coverings}
 - <administratively transferred to [A01G 13/38](#)>
- D A01G 13/04
 - • Cloches {, i.e. protective full coverings for individual plants (individual canopies A01G 13/0212)}
 - <administratively transferred to [A01G 13/26](#)>
- D A01G 13/043
 - • {with flexible coverings}
 - <administratively transferred to [A01G 13/262](#)>
- D A01G 2013/046
 - • {foldable}
 - <administratively transferred to [A01G 13/264](#) INV>
- U A01G 13/06
 - Devices for generating heat, smoke or fog in gardens, orchards or forests, e.g. to prevent damage by frost
- U A01G 13/065
 - {Frost protection by generating fog or by spraying}
- U A01G 13/08
 - Mechanical apparatus for circulating the air
- M A01G 13/10
 - Devices for affording protection against animals, birds or other pests (~~{A01G 13/0243 takes precedence;}~~ scaring or repelling devices [A01M 29/00](#))
- U A01G 13/105
 - {Protective devices against slugs, snails, crawling insects or other climbing animals}
- N A01G 13/20
 - Protective coverings for plants
- N A01G 13/21
 - • providing overhead protection, i.e. canopies
- N A01G 13/22
 - • • for individual plants
- N A01G 13/23
 - • providing lateral protection, e.g. from wind
- N A01G 13/24
 - • Tunnels for covering rows of plants
- N A01G 13/26
 - • Cloches
- N A01G 13/262
 - • • {with flexible coverings}
- N A01G 13/264
 - • • {foldable}
- N A01G 13/27
 - • protecting specific parts of plants, e.g. roots, trunks or fruits
- N A01G 13/28
 - • protecting young plants
- N A01G 13/29
 - • Arrangements for laying out or removing plant coverings
- Q A01G 13/30
 - Ground coverings

WARNING

Group [A01G 13/30](#) is impacted by reclassification into group [A01G 13/39](#). Groups [A01G 13/30](#) and [A01G 13/39](#) should be considered in order to perform a complete search.

- N A01G 13/31
 - • for individual plants
- Q A01G 13/32
 - Mats; Nets; Sheets or films

WARNING

Group [A01G 13/32](#) is impacted by reclassification into groups [A01G 13/33](#) and [A01G 13/39](#).

Groups [A01G 13/32](#), [A01G 13/33](#) and [A01G 13/39](#) should be considered in order to perform a complete search.

- Q A01G 13/33
 - • • Sheets or films

WARNING

Group [A01G 13/33](#) is incomplete pending reclassification of documents from group [A01G 13/32](#).

Group [A01G 13/33](#) is also impacted by reclassification into group [A01G 13/39](#).

Groups [A01G 13/32](#), [A01G 13/33](#) and [A01G 13/39](#) should be considered in order to perform a complete search.

- N A01G 13/35 • • Mulches, i.e. loose material
- Q A01G 13/37 • • Arrangements for laying out or removing ground coverings

WARNING

Group [A01G 13/37](#) is impacted by reclassification into group [A01G 13/39](#).

Groups [A01G 13/37](#) and [A01G 13/39](#) should be considered in order to perform a complete search.

- N A01G 13/372 • • {for removing ground coverings}
- N A01G 13/38 • • Anchoring means for ground coverings
- N A01G 13/39 • • Arrangements for perforating installed ground coverings

WARNING

Group [A01G 13/39](#) is incomplete pending reclassification of documents from groups [A01G 13/30](#), [A01G 13/32](#), [A01G 13/33](#) and [A01G 13/37](#).

All groups listed in this Warning should be considered in order to perform a complete search.

Project: RP10470 (A01G)

- U A01G 20/00 **Cultivation of turf, lawn or the like; Apparatus or methods therefor (hand-held edge trimmers or shears for lawn [A01G 3/06](#); edging for lawn [A01G 9/28](#); lawn-mowers [A01D 34/00](#))**

- C A01G 20/40 • Apparatus for cleaning the lawn or grass surface

WARNING

Group [A01G 20/40](#) is impacted by reclassification into groups [A01D 7/00](#), [A01D 7/02](#), [A01D 7/04](#), [A01D 7/06](#), [A01D 7/08](#) and [A01D 7/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- D A01G 21/00 **{Devices for hanging-up harvested fruit}**
<administratively transferred to [A01F 25/00](#)>

- C A01G 22/00 **Cultivation of specific crops or plants not otherwise provided for**

WARNING

Group [A01G 22/00](#) is impacted by reclassification into group [A01G 22/705](#).

Groups [A01G 22/00](#) and [A01G 22/705](#) should be considered in order to perform a complete search.

- U A01G 22/60 • Flowers; Ornamental plants
- U A01G 22/67 • • Dwarf trees, e.g. bonsai
- N A01G 22/705 • {Cannabis}

WARNING

Group [A01G 22/705](#) is incomplete pending reclassification of documents from group [A01G 22/00](#).

Groups [A01G 22/00](#) and [A01G 22/705](#) should be considered in order to perform a complete search.

U	A01G 25/00	Watering gardens, fields, sports grounds or the like (special apparatus or adaptations for fertilising-liquids A01C 23/00; nozzles or outlets, spraying apparatus B05B)
D	A01G 2025/003	<ul style="list-style-type: none"> • {with an impermeable layer in the ground} <p><administratively transferred to A01G 25/003 INV></p>
N	A01G 25/003	<ul style="list-style-type: none"> • {with an impermeable layer in the ground}
D	A01G 2025/006	<ul style="list-style-type: none"> • {Tubular drip irrigation dispensers mounted coaxially within water feeding tubes} <p><administratively transferred to A01G 25/006 INV></p>
N	A01G 25/006	<ul style="list-style-type: none"> • {Tubular drip irrigation dispensers mounted coaxially within water feeding tubes}
U	A01G 27/00	Self-acting watering devices, e.g. for flower-pots
C	A01G 27/003	<ul style="list-style-type: none"> • {Controls forControl of self-acting watering devices (<i>Hydroponic system controls A01G 31/008</i>)} <p>WARNING Group A01G 27/003 is impacted by reclassification into groups A01G 31/00, A01G 31/008 and A01G 31/011. All groups listed in this Warning should be considered in order to perform a complete search.</p>
C	A01G 31/00	Soilless cultivation, e.g. hydroponics (growth substrates therefor A01G 24/00; cultivation of seaweed A01G 33/00) <p>WARNING Group A01G 31/00 is incomplete pending reclassification of documents from group A01G 27/003. Group A01G 31/00 is also impacted by reclassification into groups A01G 31/011, A01G 31/008, A01G 31/021, A01G 31/022, A01G 31/023, A01G 31/0231, A01G 31/0232, A01G 31/0233, A01G 31/024 and A01G 31/025. All groups listed in this Warning should be considered in order to perform a complete search.</p>
D	A01G 2031/006	<ul style="list-style-type: none"> • {with means for recycling the nutritive solution} <p><administratively transferred to A01G 31/065 INV></p>
N	A01G 31/008	<ul style="list-style-type: none"> • {Control or regulation thereof} <p>WARNING Groups A01G 31/008 and A01G 31/011 are incomplete pending reclassification of documents from groups A01G 27/003, A01G 31/00, A01G 31/02, A01G 31/04, A01G 31/042, A01G 31/045, A01G 31/047, A01G 31/06 and A01G 31/065. All groups listed in this Warning should be considered in order to perform a complete search.</p>
N	A01G 31/011	<ul style="list-style-type: none"> • • {Control of the pH, composition, temperature or viscosity of the fluid}
C	A01G 31/02	<ul style="list-style-type: none"> • Special apparatus therefor (self-acting watering devices A01G 27/00) <p>WARNING Group A01G 31/02 is impacted by reclassification into groups A01G 31/008, A01G 31/011, A01G 31/021, A01G 9/047, A01G 31/024, A01G 31/0232, A01G 31/023, A01G 31/025, A01G 31/0233, A01G 31/0231 and A01G 31/022. All groups listed in this Warning should be considered in order to perform a complete search.</p>

- N A01G 31/021
- {Hydroponic cultivation combined with culture of aquatic animals in a symbiotic environment}
- WARNING
Group [A01G 31/021](#) is incomplete pending reclassification of documents from groups [A01G 31/00](#), [A01G 31/02](#) and [A01G 31/06](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N A01G 31/022
- {Growth chambers for large-scale hydroponic cultivation, mountable or transportable on site, e.g. shipping containers or prefabricated units}
- WARNING
Group [A01G 31/022](#) is incomplete pending reclassification of documents from groups [A01G 31/00](#), [A01G 31/02](#) and [A01G 31/06](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N A01G 31/023
- {Hydroponic cultivation wherein the roots of the plants are partially exposed to air, e.g. aeroponics}
- WARNING
Groups [A01G 31/023](#), [A01G 31/0231](#), [A01G 31/0232](#) and [A01G 31/0233](#) are incomplete pending reclassification of documents from groups [A01G 31/00](#), [A01G 31/02](#) and [A01G 31/06](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N A01G 31/0231
- • {wherein a nutritive solution is supplied in the form of fine drops or mist}
- N A01G 31/0232
- • {wherein a shallow stream of nutritive solution is circulated along the roots, e.g. nutrient film technique [NFT]}
- N A01G 31/0233
- • {with periodic flooding of the roots, e.g. ebb-and-flow or flood-and-drain techniques}
- N A01G 31/024
- {Hydroponic cultivation wherein the roots are totally immersed in the nutritive solution, e.g. cultivation on floating rafts or deep-water culture}
- WARNING
Group [A01G 31/024](#) is incomplete pending reclassification of documents from groups [A01G 31/00](#), [A01G 31/02](#) and [A01G 31/06](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N A01G 31/025
- {Hydroponic cultivation for vertical cultivation (on racks or in stacked containers [A01G 31/06](#))}
- WARNING
Group [A01G 31/025](#) is incomplete pending reclassification of documents from groups [A01G 31/00](#), [A01G 31/02](#) and [A01G 31/06](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- C A01G 31/04
- Hydroponic culture on conveyors
- WARNING
Group [A01G 31/04](#) is impacted by reclassification into groups [A01G 31/008](#) and [A01G 31/011](#).
Groups [A01G 31/04](#), [A01G 31/008](#) and [A01G 31/011](#) should be considered in order to perform a complete search.

- C A01G 31/042 • • • {with containers travelling on a belt or the like, or conveyed by chains}
- WARNING
Group [A01G 31/042](#) is impacted by reclassification into groups [A01G 31/008](#) and [A01G 31/011](#).
Groups [A01G 31/042](#), [A01G 31/008](#) and [A01G 31/011](#) should be considered in order to perform a complete search.
- C A01G 31/045 • • • {with containers guided along a rail}
- WARNING
Group [A01G 31/045](#) is impacted by reclassification into groups [A01G 31/008](#) and [A01G 31/011](#).
Groups [A01G 31/045](#), [A01G 31/008](#) and [A01G 31/011](#) should be considered in order to perform a complete search.
- C A01G 31/047 • • • {with containers inside rotating drums or rotating around a horizontal axis, e.g. carousels}
- WARNING
Group [A01G 31/047](#) is impacted by reclassification into groups [A01G 31/008](#) and [A01G 31/011](#).
Groups [A01G 31/047](#), [A01G 31/008](#) and [A01G 31/011](#) should be considered in order to perform a complete search.
- C A01G 31/06 • • Hydroponic culture on racks or in stacked containers
- WARNING
Group [A01G 31/06](#) is impacted by reclassification into groups [A01G 31/008](#), [A01G 31/011](#), [A01G 31/021](#), [A01G 31/022](#), [A01G 31/023](#), [A01G 31/0231](#), [A01G 31/0232](#), [A01G 31/0233](#), [A01G 31/024](#) and [A01G 31/025](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- Q A01G 31/065 • • {with means for recycling the nutritive solution}
- WARNING
Group [A01G 31/065](#) is impacted by reclassification into groups [A01G 31/008](#) and [A01G 31/011](#).
Groups [A01G 31/065](#), [A01G 31/008](#) and [A01G 31/011](#) should be considered in order to perform a complete search.

Project: Unknown (A01J)

- M A01J 11/00 Apparatus for treating milk (**preservation of milk or milk preparations A23B 11/10**; dairy concentration, evaporation or drying [A23C 1/00](#); ~~preservation of milk or milk preparations A23C 3/00~~)

Project: RP12330 (A01K)

- U A01K 67/00 Rearing or breeding animals, not otherwise provided for; New or modified breeds of animals
- NOTE
In this group the following term is used with the meaning indicated:
- "breeding" means obtaining animals up to and including their birth or hatching.

- M A01K 67/027
- New or modified breeds of vertebrates
- NOTE
- {In group [A01K 67/027](#), it is desirable to add the Indexing Codes of [A01K 2227/00](#) and subgroups relating to animals characterised by species and to add the Indexing Codes of [A01K 2267/00](#) and subgroups relating to animals characterised by their purpose. In groups [A01K 67/0275](#) - [A01K 67/0278](#), [A01K 67/0333](#) [A01K 67/61](#) and subgroups thereof, it is also desirable to add the Indexing Codes of [A01K 2217/00](#) and subgroups to characterise specific aspects of the genetically modified animals or the Indexing Codes of [A01K 2267/00](#) and subgroups to characterise the purpose of the animals.}
- D A01K 67/033
- Rearing or breeding invertebrates; New breeds of invertebrates
- NOTE
- In-group A01K 67/033, it is desirable to add the indexing codes relating to transgenic animals. In-group A01K 67/033, it is desirable to add the indexing codes relating to animals characterised by their purpose
- <administratively transferred to [A01K 67/30](#)>
- D A01K 67/0331
- {Snails (A01K 67/0333 takes precedence)}
- <administratively transferred to [A01K 67/32](#)>
- D A01K 67/0332
- {Earthworms (A01K 67/0333 takes precedence)}
- <administratively transferred to [A01K 67/33](#)>
- D A01K 67/0333
- {Genetically modified invertebrates, e.g. transgenic, polyploid}
- <administratively transferred to [A01K 67/61](#)>
- D A01K 67/0334
- • {Genetically modified Molluscs}
- <administratively transferred to [A01K 67/62](#)>
- D A01K 67/0335
- • {Genetically modified worms}
- <administratively transferred to [A01K 67/63](#)>
- D A01K 67/0336
- • • {Genetically modified Nematodes, e.g. Caenorhabditis elegans}
- <administratively transferred to [A01K 67/64](#)>
- D A01K 67/0337
- • {Genetically modified Arthropods}
- <administratively transferred to [A01K 67/65](#)>
- D A01K 67/0338
- • • {Genetically modified Crustaceans}
- <administratively transferred to [A01K 67/67](#)>
- D A01K 67/0339
- • • {Genetically modified insects, e.g. Drosophila melanogaster, medfly}
- <administratively transferred to [A01K 67/68](#)>
- D A01K 67/04
- • Silkworms {(A01K 67/0333 takes precedence)}
- <administratively transferred to [A01K 67/35](#)>
- Q A01K 67/30
- Rearing or breeding invertebrates
- WARNING
- Group [A01K 67/30](#) is impacted by reclassification into groups [A01K 67/31](#), [A01K 67/34](#), [A01K 67/36](#) - [A01K 67/368](#), [A01K 67/60](#) and [A01K 67/68](#). All groups listed in this Warning should be considered in order to perform a complete search.
- N A01K 67/31
- • Arrangements for releasing thereof into the environment
- WARNING
- Group [A01K 67/31](#) is incomplete pending reclassification of documents from group [A01K 67/30](#).

Groups [A01K 67/30](#) and [A01K 67/31](#) should be considered in order to perform a complete search.

- N A01K 67/32
 - • Snails (genetically modified molluscs [A01K 67/62](#))
- N A01K 67/33
 - • Earthworms (genetically modified worms [A01K 67/63](#))
- N A01K 67/34
 - • Insects (genetically modified insects [A01K 67/68](#))

WARNING

Groups [A01K 67/34](#), [A01K 67/36](#), [A01K 67/362](#), [A01K 67/364](#), [A01K 67/366](#) and [A01K 67/368](#) are incomplete pending reclassification of documents from group [A01K 67/30](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- Q A01K 67/35
 - • • Silkworms

WARNING

Group [A01K 67/35](#) is impacted by reclassification into group [A01K 67/68](#).

Groups [A01K 67/35](#) and [A01K 67/68](#) should be considered in order to perform a complete search.

- N A01K 67/36
 - • • Industrial rearing of insects, e.g. insect farms
- N A01K 67/362
 - • • • Containers or crates
- N A01K 67/364
 - • • • Heating, ventilating or air conditioning
- N A01K 67/366
 - • • • Insect counting or dosing systems
- N A01K 67/368
 - • • • Feeding; Watering
- N A01K 67/60
 - New or modified breeds of invertebrates

WARNING

Group [A01K 67/60](#) is incomplete pending reclassification of documents from group [A01K 67/30](#).

Groups [A01K 67/30](#) and [A01K 67/60](#) should be considered in order to perform a complete search.

- N A01K 67/61
 - • Genetically modified invertebrates, e.g. transgenic or polyploid

NOTE

{In group [A01K 67/61](#), it is desirable to add the indexing codes relating to transgenic animals. In group [A01K 67/61](#), it is desirable to add the indexing codes relating to animals characterised by their purpose.}

- N A01K 67/62
 - • • Genetically modified molluscs
- N A01K 67/63
 - • • Genetically modified worms
- N A01K 67/64
 - • • • Genetically modified nematodes
- N A01K 67/65
 - • • Genetically modified arthropods
- N A01K 67/67
 - • • • Genetically modified crustaceans
- N A01K 67/68
 - • • • Genetically modified insects

WARNING

Group [A01K 67/68](#) is incomplete pending reclassification of documents from groups [A01K 67/30](#) and [A01K 67/35](#).

Groups [A01K 67/30](#), [A01K 67/35](#) and [A01K 67/68](#) should be considered in order to perform a complete search.

Project: RP12357 (A01N)

- U A01N 1/00 Preservation of bodies of humans or animals, or parts thereof

- D A01N 1/02
 - Preservation of living parts
 - <administratively transferred to [A01N 1/10](#)>
- D A01N 1/0205
 - {Chemical aspects}
 - <administratively transferred to [A01N 1/12](#)>
- D A01N 1/021
 - {Preservation or perfusion media, liquids, solids or gases used in the preservation of cells, tissue, organs or bodily fluids}
 - <administratively transferred to [A01N 1/122](#)>
- D A01N 1/0215
 - {Disinfecting agents, e.g. antimicrobials for preserving living parts}
 - <administratively transferred to [A01N 1/124](#)>
- D A01N 1/0221
 - {Freeze-process protecting agents, i.e. substances protecting cells from effects of the physical process, e.g. cryoprotectants, osmolarity regulators like oncotic agents}
 - <administratively transferred to [A01N 1/125](#)>
- D A01N 1/0226
 - {Physiologically active agents, i.e. substances affecting physiological processes of cells and tissue to be preserved, e.g. anti-oxidants or nutrients}
 - <administratively transferred to [A01N 1/126](#)>
- D A01N 1/0231
 - {Chemically defined matrices, e.g. alginate gels, for immobilising, holding or storing cells, tissue or organs for preservation purposes; Chemically altering or fixing cells, tissue or organs, e.g. by cross-linking, for preservation purposes}
 - <administratively transferred to [A01N 1/128](#)>
- D A01N 1/0236
 - {Mechanical aspects}
 - <administratively transferred to [A01N 1/14](#)>
- D A01N 1/0242
 - {Apparatuses, i.e. devices used in the process of preservation of living parts, such as pumps, refrigeration devices or any other devices featuring moving parts and/or temperature controlling components}
 - <administratively transferred to [A01N 1/142](#)>
- D A01N 1/0247
 - {for perfusion, i.e. for circulating fluid through organs, blood vessels or other living parts}
 - <administratively transferred to [A01N 1/143](#)>
- D A01N 1/0252
 - {Temperature controlling refrigerating apparatus, i.e. devices used to actively control the temperature of a designated internal volume, e.g. refrigerators, freeze-drying apparatus or liquid nitrogen baths}
 - <administratively transferred to [A01N 1/144](#)>
- D A01N 1/0257
 - {Stationary or portable vessels generating cryogenic temperatures}
 - <administratively transferred to [A01N 1/145](#)>
- D A01N 1/0263
 - {Non-refrigerated containers specially adapted for transporting or storing living parts whilst preserving, e.g. cool boxes, blood bags or "straws" for cryopreservation}
 - <administratively transferred to [A01N 1/146](#)>
- D A01N 1/0268
 - {Carriers for immersion in cryogenic fluid, both for slow-freezing and vitrification, e.g. open or closed "straws" for embryos, oocytes or semen}
 - <administratively transferred to [A01N 1/147](#)>
- D A01N 1/0273
 - {Transport containers (A01N 1/0268 takes precedence)}
 - <administratively transferred to [A01N 1/148](#)>

- D A01N 1/0278
- {Physical preservation processes}
 - <administratively transferred to [A01N 1/16](#)>
- D A01N 1/0284
- {Temperature processes, i.e. using a designated change in temperature over time}
 - <administratively transferred to [A01N 1/162](#)>
- D A01N 1/0289
- {Pressure processes, i.e. using a designated change in pressure over time}
 - <administratively transferred to [A01N 1/165](#)>
- D A01N 1/0294
- {Electromagnetic, i.e. using electromagnetic radiation or electromagnetic fields}
 - <administratively transferred to [A01N 1/168](#)>
- N A01N 1/10
- Preservation of living parts
- Q A01N 1/12
- Chemical aspects of preservation
- WARNING
Group [A01N 1/12](#) is impacted by reclassification into group [C12N 5/52](#). Groups [A01N 1/12](#) and [C12N 5/52](#) should be considered in order to perform a complete search.
- Q A01N 1/122
- Preservation or perfusion media
- WARNING
Group [A01N 1/122](#) is impacted by reclassification into group [C12N 5/522](#). Groups [A01N 1/122](#) and [C12N 5/522](#) should be considered in order to perform a complete search.
- Q A01N 1/124
- Disinfecting agents, e.g. antimicrobials
- WARNING
Group [A01N 1/124](#) is impacted by reclassification into group [C12N 5/524](#). Groups [A01N 1/124](#) and [C12N 5/524](#) should be considered in order to perform a complete search.
- Q A01N 1/125
- Freeze protecting agents, e.g. cryoprotectants or osmolarity regulators
- WARNING
Group [A01N 1/125](#) is impacted by reclassification into group [C12N 5/525](#). Groups [A01N 1/125](#) and [C12N 5/525](#) should be considered in order to perform a complete search.
- Q A01N 1/126
- Physiologically active agents, e.g. antioxidants or nutrients
- WARNING
Group [A01N 1/126](#) is impacted by reclassification into group [C12N 5/526](#). Groups [A01N 1/126](#) and [C12N 5/526](#) should be considered in order to perform a complete search.
- Q A01N 1/128
- Chemically defined matrices for immobilising, holding or storing living parts, e.g. alginate gels; Chemically altering living parts, e.g. by cross-linking
- WARNING
Group [A01N 1/128](#) is impacted by reclassification into group [C12N 5/528](#). Groups [A01N 1/128](#) and [C12N 5/528](#) should be considered in order to perform a complete search.
- Q A01N 1/14
- Mechanical aspects of preservation; Apparatus or containers therefor
- WARNING
Group [A01N 1/14](#) is impacted by reclassification into groups [A61M 1/0272](#) - [A61M 1/0277](#) and [C12N 5/54](#).

Groups [A01N 1/14](#), [A61M 1/0272](#) - [A61M 1/0277](#) and [C12N 5/54](#) should be considered in order to perform a complete search.

Q A01N 1/142

- • • Apparatus

WARNING

Group [A01N 1/142](#) is impacted by reclassification into groups [A61M 1/0272](#) - [A61M 1/0277](#) and [C12N 5/542](#).

Groups [A01N 1/142](#), [A61M 1/0272](#) - [A61M 1/0277](#) and [C12N 5/542](#) should be considered in order to perform a complete search.

N A01N 1/143

- • • • for organ perfusion

Q A01N 1/144

- • • • for temperature control, e.g. refrigerators or freeze-drying apparatus

WARNING

Group [A01N 1/144](#) is impacted by reclassification into group [C12N 5/544](#). Groups [A01N 1/144](#) and [C12N 5/544](#) should be considered in order to perform a complete search.

Q A01N 1/145

- • • • Stationary or portable vessels generating cryogenic temperatures, e.g. liquid nitrogen baths

WARNING

Group [A01N 1/145](#) is impacted by reclassification into group [C12N 5/545](#).

Groups [A01N 1/145](#) and [C12N 5/545](#) should be considered in order to perform a complete search.

Q A01N 1/146

- • • Non-refrigerated containers specially adapted for transporting or storing living parts whilst preserving

WARNING

Group [A01N 1/146](#) is impacted by reclassification into groups [A61J 1/10](#), [A61M 1/0272](#) - [A61M 1/0277](#) and [C12N 5/546](#).

All groups listed in this Warning should be considered in order to perform a complete search.

Q A01N 1/147

- • • Carriers for immersion in cryogenic fluid for slow freezing or vitrification

WARNING

Group [A01N 1/147](#) is impacted by reclassification into group [C12N 5/547](#). Groups [A01N 1/147](#) and [C12N 5/547](#) should be considered in order to perform a complete search.

Q A01N 1/148

- • • • with provisions specially adapted for transporting

WARNING

Group [A01N 1/148](#) is impacted by reclassification into group [C12N 5/548](#). Groups [A01N 1/148](#) and [C12N 5/548](#) should be considered in order to perform a complete search.

Q A01N 1/16

- • Physical preservation processes

WARNING

Group [A01N 1/16](#) is impacted by reclassification into group [C12N 5/56](#).

Groups [A01N 1/16](#) and [C12N 5/56](#) should be considered in order to perform a complete search.

Q A01N 1/162

- • Temperature processes, e.g. following predefined temperature changes over time

WARNING

Group [A01N 1/162](#) is impacted by reclassification into group [C12N 5/562](#).

Groups [A01N 1/162](#) and [C12N 5/562](#) should be considered in order to perform a complete search.

- Q A01N 1/165 • • • Pressure processes, e.g. following predefined pressure changes over time

WARNING

Group [A01N 1/165](#) is impacted by reclassification into group [C12N 5/565](#). Groups [A01N 1/165](#) and [C12N 5/565](#) should be considered in order to perform a complete search.

- Q A01N 1/168 • • • using electromagnetic fields or radiation; using acoustic waves or corpuscular radiation

WARNING

Group [A01N 1/168](#) is impacted by reclassification into group [C12N 5/568](#). Groups [A01N 1/168](#) and [C12N 5/568](#) should be considered in order to perform a complete search.

Project: RP12370 (A21D)

- M A21D TREATMENT, ~~e.g. PRESERVATION~~, OF FLOUR OR DOUGH **FOR BAKING**, e.g. BY ADDITION OF MATERIALS; BAKING; BAKERY PRODUCTS
(preservation of flour or dough before baking [A23B 40/00](#); preservation of bakery products [A23B 45/00](#)); ~~PRESERVATION THEREOF~~

- U A21D 2/00 Treatment of flour or dough by adding materials thereto before or during baking (batters, dough or mixtures before baking [A21D 10/00](#))

NOTE

In groups [A21D 2/02](#) - [A21D 2/40](#), the last place priority rule is applied, i.e. at each hierarchical level, in the absence of an indication to the contrary, a substance is classified in the last appropriate place.

- U A21D 2/02 • by adding inorganic substances

- D A21D 4/00 Preserving flour or dough before baking by storage in an inert atmosphere
<administratively transferred to [A23B 40/60](#)>

- C A21D 6/00 Other treatment of flour or dough before baking, e.g. cooling, irradiating, or heating (preservation of flour or dough before baking [A23B 40/00](#))

WARNING

Group [A21D 6/00](#) is impacted by reclassification into groups [A23B 40/00](#) - [A23B 40/50](#).

Groups [A21D 6/00](#) and [A23B 40/00](#) - [A23B 40/50](#) should be considered in order to perform a complete search.

- C A21D 6/001 • {Cooling}

WARNING

Group [A21D 6/001](#) is impacted by reclassification into group [A23B 40/10](#).

Groups [A21D 6/001](#) and [A23B 40/10](#) should be considered in order to perform a complete search.

- C A21D 6/003 • {Heat treatment}

WARNING

Group [A21D 6/003](#) is impacted by reclassification into group [A23B 40/30](#).

Groups [A21D 6/003](#) and [A23B 40/30](#) should be considered in order to perform a complete search.

C	A21D 6/005	<ul style="list-style-type: none"> • {Irradiation (irradiation of foodstuffs A23L 3/26 irradiation of foodstuffs <u>A23B 2/50</u>)} <p><u>WARNING</u> Group <u>A21D 6/005</u> is impacted by reclassification into group <u>A23B 40/50</u>. Groups <u>A21D 6/005</u> and <u>A23B 40/50</u> should be considered in order to perform a complete search.</p>
C	A21D 6/006	<ul style="list-style-type: none"> • {Agglomeration of flour} <p><u>WARNING</u> Group <u>A21D 6/006</u> is impacted by reclassification into group <u>A23B 40/00</u>. Groups <u>A21D 6/006</u> and <u>A23B 40/00</u> should be considered in order to perform a complete search.</p>
C	A21D 6/008	<ul style="list-style-type: none"> • {Freeze-drying} <p><u>WARNING</u> Group <u>A21D 6/008</u> is impacted by reclassification into group <u>A23B 40/00</u>. Groups <u>A21D 6/008</u> and <u>A23B 40/00</u> should be considered in order to perform a complete search.</p>
U	A21D 13/00	Finished or partly finished bakery products
U	A21D 13/80	<ul style="list-style-type: none"> • Pastry not otherwise provided for elsewhere, e.g. cakes, biscuits or cookies
C	A21D 15/00	<p>Preserving Improving finished {, partly finished or par-baked} bakery products (refreshing bakery products A21D 17/00); Improving (refreshing A21D 17/00)</p> <p><u>WARNING</u> Group <u>A21D 15/00</u> is impacted by reclassification into group <u>A23B 45/00</u>. Groups <u>A21D 15/00</u> and <u>A23B 45/00</u> should be considered in order to perform a complete search.</p>
C	A21D 15/02	<ul style="list-style-type: none"> • by cooling {, e.g. refrigeration; or freezing} <p><u>WARNING</u> Group <u>A21D 15/02</u> is impacted by reclassification into group <u>A23B 45/10</u>. Groups <u>A21D 15/02</u> and <u>A23B 45/10</u> should be considered in order to perform a complete search.</p>
C	A21D 15/04	<ul style="list-style-type: none"> • by heat treatment {, e.g. sterilisation, pasteurisation} <p><u>WARNING</u> Group <u>A21D 15/04</u> is impacted by reclassification into group <u>A23B 45/30</u>. Groups <u>A21D 15/04</u> and <u>A23B 45/30</u> should be considered in order to perform a complete search.</p>
C	A21D 15/06	<ul style="list-style-type: none"> • by irradiation {, e.g. with microbiocidal agents, with protective films} <p><u>WARNING</u> Group <u>A21D 15/06</u> is impacted by reclassification into group <u>A23B 45/50</u>. Groups <u>A21D 15/06</u> and <u>A23B 45/50</u> should be considered in order to perform a complete search.</p>
C	A21D 15/08	<ul style="list-style-type: none"> • by coating {, e.g. with microbiocidal agents, with protective films} <p><u>WARNING</u> Group <u>A21D 15/08</u> is impacted by reclassification into group <u>A23B 45/70</u>. Groups <u>A21D 15/08</u> and <u>A23B 45/70</u> should be considered in order to perform a complete search.</p>

Project: RP12366 (A23B)

M A23B **PRESERVING, e.g. BY CANNING, MEAT, FISH, EGGS, FRUIT, VEGETABLES, EDIBLE SEEDS PRESERVATION OF FOODS, FOODSTUFFS OR NON-ALCOHOLIC BEVERAGES; CHEMICAL RIPENING OF FRUIT OR VEGETABLES; THE PRESERVED, RIPENED, OR CANNED PRODUCTS**

WARNING

{In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.}

Q A23B 2/00 **Preservation of foods or foodstuffs, in general**

NOTE

This group covers processes or apparatus for the preservation of foods or foodstuffs, in general, i.e. where the nature of the product is not relevant or not specified.

WARNING

Group [A23B 2/00](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

Q A23B 2/001 • {Details of apparatus, e.g. pressure feed valves or for transport, or loading or unloading manipulation}

WARNING

Group [A23B 2/001](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

Q A23B 2/003 • {Control or safety devices for sterilisation or pasteurisation systems}

WARNING

Group [A23B 2/003](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

Q A23B 2/05 • by heating using irradiation or electric treatment (drying or kilning [A23B 2/90](#))

WARNING

Group [A23B 2/05](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

Q A23B 2/055 • {with infrared rays}

WARNING

Group [A23B 2/055](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

Q A23B 2/08 • • using microwaves or dielectric heating

WARNING

Group [A23B 2/08](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- Q A23B 2/10
- *by treatment with pressure variation, shock, acceleration or shear stress*
- WARNING
Group [A23B 2/10](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- Q A23B 2/103
- *{using sub- or super-atmospheric pressures, or pressure variations transmitted by a liquid or gas}*
- WARNING
Group [A23B 2/103](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- Q A23B 2/20
- *by heating materials in packages which are progressively transported, continuously or stepwise, through the apparatus*
- WARNING
Group [A23B 2/20](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- Q A23B 2/203
- *{with packages moving on the spot while being transported}*
- WARNING
Group [A23B 2/203](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- Q A23B 2/205
- *{with packages on a drum with horizontal axis (with packages moving on the spot while being transported [A23B 2/203](#))}*
- WARNING
Group [A23B 2/205](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- Q A23B 2/2055
- • *{transported in a hydrostatic chamber}*
- WARNING
Group [A23B 2/2055](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- Q A23B 2/22
- • *with packages on endless chain or band conveyors {(with packages moving on the spot while being transported [A23B 2/203](#))}*
- WARNING
Group [A23B 2/22](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.

- Q A23B 2/225
- • • {transported in a hydrostatic chamber}
- WARNING
Group [A23B 2/225](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- Q A23B 2/25
- • with packages transported along a helical path {(with packages moving on the spot while being transported [A23B 2/203](#))}
- WARNING
Group [A23B 2/25](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- Q A23B 2/255
- • • {transported in a hydrostatic chamber}
- WARNING
Group [A23B 2/255](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- Q A23B 2/28
- • with packages on a revolving platform {(with packages moving on the spot while being transported [A23B 2/203](#))}
- WARNING
Group [A23B 2/28](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- Q A23B 2/285
- • • {transported in a hydrostatic chamber}
- WARNING
Group [A23B 2/285](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- Q A23B 2/30
- by heating materials in packages which are not progressively transported through the apparatus
- WARNING
Group [A23B 2/30](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- Q A23B 2/33
- • with packages in intercommunicating chambers through which the heating medium is circulated
- WARNING
Group [A23B 2/33](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.

- Q A23B 2/37
- • with packages moving on the spot
- WARNING
Group [A23B 2/37](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- Q A23B 2/40
- by heating loose unpacked materials
- WARNING
Group [A23B 2/40](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- Q A23B 2/405
- • {in solid state}
- WARNING
Group [A23B 2/405](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- Q A23B 2/42
- • while they are progressively transported through the apparatus
- WARNING
Group [A23B 2/42](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- Q A23B 2/425
- • • {in solid state}
- WARNING
Group [A23B 2/425](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- Q A23B 2/44
- • • with transport along plates
- WARNING
Group [A23B 2/44](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- Q A23B 2/445
- • • • {in solid state}
- WARNING
Group [A23B 2/445](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- Q A23B 2/46
- • • with transport through tubes
- WARNING
Group [A23B 2/46](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

Q A23B 2/465

- • • {in solid state}

WARNING

Group [A23B 2/465](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

Q A23B 2/48

- • with the materials in spray form

WARNING

Group [A23B 2/48](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

Q A23B 2/485

- • • {in solid state}

WARNING

Group [A23B 2/485](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

Q A23B 2/50

- by irradiation without heating

WARNING

Group [A23B 2/50](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

Q A23B 2/503

- • {with corpuscular or ionising radiation, i.e. X, alpha, beta or omega radiation}

WARNING

Group [A23B 2/503](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

Q A23B 2/505

- • {with corona irradiation}

WARNING

Group [A23B 2/505](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

Q A23B 2/53

- • with ultraviolet light

WARNING

Group [A23B 2/53](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- Q A23B 2/57
- • by treatment with ultrasonic waves
- WARNING
Group [A23B 2/57](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- Q A23B 2/60
- by treatment with electric currents without heating effect
- WARNING
Group [A23B 2/60](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- Q A23B 2/605
- • {by electrolysis}
- WARNING
Group [A23B 2/605](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- Q A23B 2/70
- by treatment with chemicals
- WARNING
Group [A23B 2/70](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- Q A23B 2/704
- • in the form of gases, e.g. fumigation; Compositions or apparatus therefor
- WARNING
Group [A23B 2/704](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- Q A23B 2/7045
- • • {Details of apparatus for generating or regenerating gases}
- WARNING
Group [A23B 2/7045](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- Q A23B 2/708
- • • in a controlled atmosphere, e.g. partial vacuum, comprising only CO₂, N₂, O₂ or H₂O
- WARNING
Group [A23B 2/708](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- Q A23B 2/712
- • • • in which an absorbent is placed or used (packages for foodstuffs with provision for absorbing fluids [B65D 81/26](#))
- WARNING
Group [A23B 2/712](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

Q A23B 2/717

- • • • Oxygen absorbent

WARNING

Group [A23B 2/717](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

Q A23B 2/721

- • • in a controlled atmosphere comprising other gases in addition to CO₂, N₂, O₂ or H₂O

WARNING

Group [A23B 2/721](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

Q A23B 2/725

- • in the form of liquids or solids

WARNING

Group [A23B 2/725](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

Q A23B 2/729

- • • Organic compounds; Microorganisms; Enzymes

NOTE

In groups [A23B 2/733](#) - [A23B 2/779](#), the last place priority rule is applied, i.e. at each hierarchical level, in the absence of an indication to the contrary, classification is made in the last appropriate place.

WARNING

Group [A23B 2/729](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

Q A23B 2/7295

- • • • {Antibiotics}

WARNING

Group [A23B 2/7295](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

Q A23B 2/733

- • • • Compounds of undetermined constitution obtained from animals or plants

WARNING

Group [A23B 2/733](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

Q A23B 2/742

- • • • Organic compounds containing oxygen

WARNING

Group [A23B 2/742](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

Q A23B 2/746 with singly-bound oxygen

WARNING

Group [A23B 2/746](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

Q A23B 2/75 with doubly-bound oxygen

WARNING

Group [A23B 2/75](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

Q A23B 2/754 containing carboxyl groups

WARNING

Group [A23B 2/754](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

Q A23B 2/758 Carboxylic acid esters

WARNING

Group [A23B 2/758](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

Q A23B 2/762 Organic compounds containing nitrogen

WARNING

Group [A23B 2/762](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

Q A23B 2/767 Organic compounds containing sulfur

WARNING

Group [A23B 2/767](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

Q A23B 2/771 Organic compounds containing hetero rings

WARNING

Group [A23B 2/771](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- Q A23B 2/775 • • • Organic compounds containing phosphorus
WARNING
 Group [A23B 2/775](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- Q A23B 2/779 • • • Sugars; Derivatives thereof
WARNING
 Group [A23B 2/779](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- Q A23B 2/783 • • • Microorganisms; Enzymes
WARNING
 Group [A23B 2/783](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- Q A23B 2/788 • • • Inorganic compounds
WARNING
 Group [A23B 2/788](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- Q A23B 2/792 • • • Apparatus for preserving using liquids
WARNING
 Group [A23B 2/792](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- Q A23B 2/796 • • • Apparatus for preserving using solids
WARNING
 Group [A23B 2/796](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- Q A23B 2/80 • Freezing; Subsequent thawing; Cooling
WARNING
 Group [A23B 2/80](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- Q A23B 2/803 • {Materials being transported through or in the apparatus, with or without shaping, e.g. in the form of powders, granules or flakes}
WARNING
 Group [A23B 2/803](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- Q A23B 2/8033
- • • {with packages or with shaping in the form of blocks or portions}
- WARNING
Group [A23B 2/8033](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- Q A23B 2/805
- • {Materials not being transported through or in the apparatus with or without shaping, e.g. in the form of powders, granules or flakes}
- WARNING
Group [A23B 2/805](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- Q A23B 2/8055
- • • {with packages or with shaping in the form of blocks or portions}
- WARNING
Group [A23B 2/8055](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- Q A23B 2/82
- • Thawing subsequent to freezing
- WARNING
Group [A23B 2/82](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- Q A23B 2/85
- • with addition of {or treatment with} chemicals
- WARNING
Group [A23B 2/85](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- Q A23B 2/88
- • • with direct contact between the food and the chemical, e.g. liquid N₂ at cryogenic temperature
- WARNING
Group [A23B 2/88](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- Q A23B 2/90
- • by drying or kilning; Subsequent reconstitution
- WARNING
Group [A23B 2/90](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.

- Q A23B 2/905 • • {Fractionated crystallisation}
- WARNING
Group [A23B 2/905](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- Q A23B 2/91 • • with addition of chemicals before or during drying
- WARNING
Group [A23B 2/91](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- Q A23B 2/92 • • Freeze drying
- WARNING
Group [A23B 2/92](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- Q A23B 2/93 • • Spray drying
- WARNING
Group [A23B 2/93](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- Q A23B 2/94 • • Thin-layer drying, drum drying or roller drying
- WARNING
Group [A23B 2/94](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- Q A23B 2/945 • • • {Drum- or roller-drying}
- WARNING
Group [A23B 2/945](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- Q A23B 2/95 • • Fluidised-bed drying
- WARNING
Group [A23B 2/95](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- Q A23B 2/96 • • Foam drying
- WARNING
Group [A23B 2/96](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

Q A23B 2/97

- using irradiation or electric treatment, e.g. ultrasonic waves

WARNING

Group [A23B 2/97](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

N A23B 4/00 -
A23B 90/00

**Preservation of specific foods, foodstuffs or non-alcoholic beverages;
Chemical ripening of fruit or vegetables**

M A23B 4/00

General methods for preserving**Preservation of** meat, sausages, fish or fish products

U A23B 4/02

- Preserving by means of inorganic salts (apparatus therefor [A23B 4/26](#), [A23B 4/32](#))

M A23B 4/027

- by inorganic salts other than kitchen salt, or mixtures thereof with organic compounds, e.g. biochemical compounds

M A23B 4/03

- Drying; Subsequent reconstitution ~~-(drying apparatus in general F26B)}~~

M A23B 4/037

- Freeze-drying {, i.e. ~~cryodessication~~, **cryodesiccation or** lyophilisation; Apparatus therefor}

U A23B 4/044

- Smoking; Smoking devices

U A23B 4/048

- with addition of chemicals other than natural smoke

M A23B 4/052

- Smoke generators {; Smoking apparatus ~~-(A23B 4/056 takes precedence)}~~

U A23B 4/06

- Freezing; Subsequent thawing; Cooling

U A23B 4/08

- with addition of chemicals {or treatment with chemicals} before or during cooling {, e.g. in the form of an ice coating or frozen block}

U A23B 4/09

- with direct contact between the food and the chemical, e.g. liquid N₂, at cryogenic temperature

M A23B 4/10

- Coating with a protective layer; Compositions or apparatus therefor ~~-(A23B 4/08 takes precedence)}~~

M A23B 4/26

- Apparatus for preserving using liquids {; ~~Methods~~**Processes** therefor}

U A23B 5/00

Preservation of eggs or egg products

U A23B 5/02

- Drying; Subsequent reconstitution

M A23B 5/03

- Freeze-drying {, i.e. ~~cryodessication~~, **cryodesiccation or** lyophilisation; Apparatus therefor}

C A23B 7/00

Preservation of fruit or vegetables; Preservation or chemical**Chemical**
ripening of fruit or vegetables

WARNING

Group [A23B 7/00](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

C A23B 7/005

- Preserving by heating

WARNING

Group [A23B 7/005](#) is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- C A23B 7/0053
- {by direct or indirect contact with heating gases or liquids}
- WARNING
*Group A23B 7/0053 is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
 All groups listed in this Warning should be considered in order to perform a complete search.*
- C A23B 7/0056
- • {with packages}
- WARNING
*Group A23B 7/0056 is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
 All groups listed in this Warning should be considered in order to perform a complete search.*
- C A23B 7/01
- • by irradiation or electric treatment
- WARNING
*Group A23B 7/01 is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
 All groups listed in this Warning should be considered in order to perform a complete search.*
- C A23B 7/012
- • • {with packages}
- WARNING
*Group A23B 7/012 is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
 All groups listed in this Warning should be considered in order to perform a complete search.*
- C A23B 7/015
- Preserving by irradiation or electric treatment without heating effect
- WARNING
*Group A23B 7/015 is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
 All groups listed in this Warning should be considered in order to perform a complete search.*
- C A23B 7/02
- Dehydrating; Subsequent reconstitution (dried cooked potatoes [A23L 19/12](#))
- WARNING
*Group A23B 7/02 is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
 All groups listed in this Warning should be considered in order to perform a complete search.*
- C A23B 7/0205
- • {by contact of the material with fluids, e.g. drying gas or extracting liquids}
- WARNING
*Group A23B 7/0205 is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
 All groups listed in this Warning should be considered in order to perform a complete search.*
- C A23B 7/021
- • {Foam drying}
- WARNING
Group A23B 7/021 is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

C A23B 7/0215

- {Post-treatment of dried fruits or vegetables}

WARNING

Group A23B 7/0215 is impacted by reclassification into groups A23B 80/00, A23B 85/00 and A23B 90/00.

All groups listed in this Warning should be considered in order to perform a complete search.

C A23B 7/022

- with addition of chemicals {before or during drying, e.g. semi-moist products} ([A23B 7/024](#) - [A23B 7/028](#) take precedence)

WARNING

Group A23B 7/022 is impacted by reclassification into groups A23B 80/00, A23B 85/00 and A23B 90/00.

All groups listed in this Warning should be considered in order to perform a complete search.

C A23B 7/024

- Freeze-drying {, i.e. ~~cryodessication~~[cryodesiccation](#) or lyophilisation}

WARNING

Group A23B 7/024 is impacted by reclassification into groups A23B 80/00, A23B 85/00 and A23B 90/00.

All groups listed in this Warning should be considered in order to perform a complete search.

C A23B 7/026

- Spray-drying

WARNING

Group A23B 7/026 is impacted by reclassification into groups A23B 80/00, A23B 85/00 and A23B 90/00.

All groups listed in this Warning should be considered in order to perform a complete search.

C A23B 7/028

- Thin layer-, drum- or roller-drying {or by contact with a hot surface}

WARNING

Group A23B 7/028 is impacted by reclassification into groups A23B 80/00, A23B 85/00 and A23B 90/00.

All groups listed in this Warning should be considered in order to perform a complete search.

C A23B 7/04

- Freezing; Subsequent thawing; Cooling

WARNING

Group A23B 7/04 is impacted by reclassification into groups A23B 80/00, A23B 85/00 and A23B 90/00.

All groups listed in this Warning should be considered in order to perform a complete search.

C A23B 7/0408

- {~~the material~~[Materials](#) being transported through or in the apparatus with or without shaping, e.g. in the form of ~~powder~~[powders](#), granules or flakes ([A23B 7/05](#) takes precedence; moving on the spot only [A23B 7/0425](#))}

WARNING

Group A23B 7/0408 is impacted by reclassification into groups A23B 80/00, A23B 85/00 and A23B 90/00.

All groups listed in this Warning should be considered in order to perform a complete search.

- C A23B 7/0416
- • {with packages or with shaping in the form of blocks or portions}
- WARNING
 Group A23B 7/0416 is impacted by reclassification into groups A23B 80/00, A23B 85/00 and A23B 90/00.
 All groups listed in this Warning should be considered in order to perform a complete search.
- C A23B 7/0425
- • {~~the material~~Materials not being transported through or in the apparatus, with or without shaping, e.g. in the form of ~~powder~~powders, granules or flakes (A23B 7/05 takes precedence)}
- WARNING
 Group A23B 7/0425 is impacted by reclassification into groups A23B 80/00, A23B 85/00 and A23B 90/00.
 All groups listed in this Warning should be considered in order to perform a complete search.
- C A23B 7/0433
- • {with packages or with shaping in the form of blocks or portions}
- WARNING
 Group A23B 7/0433 is impacted by reclassification into groups A23B 80/00, A23B 85/00 and A23B 90/00.
 All groups listed in this Warning should be considered in order to perform a complete search.
- C A23B 7/0441
- • {Treatment other than blanching preparatory to freezing}
- WARNING
 Group A23B 7/0441 is impacted by reclassification into groups A23B 80/00, A23B 85/00 and A23B 90/00.
 All groups listed in this Warning should be considered in order to perform a complete search.
- C A23B 7/045
- • Thawing subsequent to freezing
- WARNING
 Group A23B 7/045 is impacted by reclassification into groups A23B 80/00, A23B 85/00 and A23B 90/00.
 All groups listed in this Warning should be considered in order to perform a complete search.
- C A23B 7/05
- • with addition of chemicals {or treatment with chemicals other than cryogenics, before or during cooling, e.g. in the form of an ice coating or frozen block}
- WARNING
 Group A23B 7/05 is impacted by reclassification into groups A23B 80/00, A23B 85/00 and A23B 90/00.
 All groups listed in this Warning should be considered in order to perform a complete search.
- C A23B 7/055
- • with direct contact between the food and the chemical, e.g. liquid ~~nitrogen~~N₂, at cryogenic temperature
- WARNING
 Group A23B 7/055 is impacted by reclassification into groups A23B 80/00, A23B 85/00 and A23B 90/00.
 All groups listed in this Warning should be considered in order to perform a complete search.

- C A23B 7/06
- Blanching (machines therefor [A23N 12/00](#))
- WARNING
*Group A23B 7/06 is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
 All groups listed in this Warning should be considered in order to perform a complete search.*
- C A23B 7/08
- Preserving with sugars (marmalade, jam or fruit jellies [A23L 21/10](#))
- WARNING
*Group A23B 7/08 is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
 All groups listed in this Warning should be considered in order to perform a complete search.*
- C A23B 7/085
- {in a solution of sugar}
- WARNING
*Group A23B 7/085 is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
 All groups listed in this Warning should be considered in order to perform a complete search.*
- C A23B 7/10
- Preserving with acids; Acid fermentation
- WARNING
*Group A23B 7/10 is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
 All groups listed in this Warning should be considered in order to perform a complete search.*
- C A23B 7/14
- Preserving or ripening with chemicals not covered by ~~groups~~group [A23B 7/08](#) or [A23B 7/10](#)
- WARNING
*Group A23B 7/14 is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
 All groups listed in this Warning should be considered in order to perform a complete search.*
- C A23B 7/144
- • in the form of gases, e.g. fumigation; Compositions or apparatus therefor
- WARNING
*Group A23B 7/144 is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
 All groups listed in this Warning should be considered in order to perform a complete search.*
- C A23B 7/148
- • in a controlled atmosphere, e.g. partial vacuum, comprising only CO₂, N₂, O₂ or H₂O
- WARNING
*Group A23B 7/148 is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
 All groups listed in this Warning should be considered in order to perform a complete search.*

- C A23B 7/152
- • in a controlled atmosphere comprising other gases in addition to CO₂, N₂, O₂ or H₂O {; Elimination of such other gases}
- WARNING
*Group A23B 7/152 is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
 All groups listed in this Warning should be considered in order to perform a complete search.*
- C A23B 7/153
- • in the form of liquids or solids
- WARNING
*Group A23B 7/153 is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
 All groups listed in this Warning should be considered in order to perform a complete search.*
- C A23B 7/154
- • Organic compounds; Microorganisms; Enzymes
- WARNING
*Group A23B 7/154 is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
 All groups listed in this Warning should be considered in order to perform a complete search.*
- C A23B 7/155
- • • Microorganisms; Enzymes {; {Antibiotics}
- WARNING
*Group A23B 7/155 is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
 All groups listed in this Warning should be considered in order to perform a complete search.*
- C A23B 7/157
- • Inorganic compounds
- WARNING
*Group A23B 7/157 is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
 All groups listed in this Warning should be considered in order to perform a complete search.*
- C A23B 7/158
- • Apparatus for preserving using liquids
- WARNING
*Group A23B 7/158 is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
 All groups listed in this Warning should be considered in order to perform a complete search.*
- C A23B 7/159
- • Apparatus for preserving using solids
- WARNING
*Group A23B 7/159 is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
 All groups listed in this Warning should be considered in order to perform a complete search.*
- C A23B 7/16
- Coating with a protective layer; Compositions or apparatus therefor ([A23B 7/08](#) takes precedence)
- WARNING
Group A23B 7/16 is impacted by reclassification into groups [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

C A23B 9/00 **Preservation of edible seeds, e.g. cereals (preservation of pulses A23B 75/00)**

WARNING

Group A23B 9/00 is impacted by reclassification into groups A23B 75/00, A23B 80/00, A23B 85/00 and A23B 90/00.

All groups listed in this Warning should be considered in order to perform a complete search.

- C A23B 9/005 • {Processes or apparatus using pressure variation or mechanical force, e.g. shock, acceleration, shear stress; or contortion}

WARNING

Group A23B 9/005 is impacted by reclassification into groups A23B 75/00, A23B 80/00, A23B 85/00 and A23B 90/00.

All groups listed in this Warning should be considered in order to perform a complete search.

- C A23B 9/02 • Preserving by heating

WARNING

Group A23B 9/02 is impacted by reclassification into groups A23B 75/00, A23B 80/00, A23B 85/00 and A23B 90/00.

All groups listed in this Warning should be considered in order to perform a complete search.

- C A23B 9/025 • • {with use of gases}

WARNING

Group A23B 9/025 is impacted by reclassification into groups A23B 75/00, A23B 80/00, A23B 85/00 and A23B 90/00.

All groups listed in this Warning should be considered in order to perform a complete search.

- C A23B 9/04 • • by irradiation or electric treatment

WARNING

Group A23B 9/04 is impacted by reclassification into groups A23B 75/00, A23B 80/00, A23B 85/00 and A23B 90/00.

All groups listed in this Warning should be considered in order to perform a complete search.

- C A23B 9/06 • Preserving by irradiation or electric treatment without heating effect

WARNING

Group A23B 9/06 is impacted by reclassification into groups A23B 75/00, A23B 80/00, A23B 85/00 and A23B 90/00.

All groups listed in this Warning should be considered in order to perform a complete search.

- C A23B 9/08 • Drying; Subsequent reconstitution

WARNING

Group A23B 9/08 is impacted by reclassification into groups A23B 75/00, A23B 80/00, A23B 85/00 and A23B 90/00.

All groups listed in this Warning should be considered in order to perform a complete search.

- C A23B 9/10
- Freezing; Subsequent thawing; Cooling
- WARNING
*Group A23B 9/10 is impacted by reclassification into groups [A23B 75/00](#), [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
 All groups listed in this Warning should be considered in order to perform a complete search.*
- C A23B 9/12
- Thawing subsequent to freezing
- WARNING
*Group A23B 9/12 is impacted by reclassification into groups [A23B 75/00](#), [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
 All groups listed in this Warning should be considered in order to perform a complete search.*
- C A23B 9/14
- Coating with a protective layer; Compositions or apparatus therefor
- WARNING
*Group A23B 9/14 is impacted by reclassification into groups [A23B 75/00](#), [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
 All groups listed in this Warning should be considered in order to perform a complete search.*
- C A23B 9/16
- Preserving with chemicals
- WARNING
*Group A23B 9/16 is impacted by reclassification into groups [A23B 75/00](#), [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
 All groups listed in this Warning should be considered in order to perform a complete search.*
- C A23B 9/18
- in the form of gases, e.g. fumigation; Compositions or apparatus therefor
- WARNING
*Group A23B 9/18 is impacted by reclassification into groups [A23B 75/00](#), [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
 All groups listed in this Warning should be considered in order to perform a complete search.*
- C A23B 9/20
- in a controlled atmosphere, e.g. partial vacuum, comprising only CO₂, N₂, O₂ or H₂O
- WARNING
*Group A23B 9/20 is impacted by reclassification into groups [A23B 75/00](#), [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
 All groups listed in this Warning should be considered in order to perform a complete search.*
- C A23B 9/22
- in a controlled atmosphere comprising other gases in addition to CO₂, N₂, O₂ or H₂O
- WARNING
*Group A23B 9/22 is impacted by reclassification into groups [A23B 75/00](#), [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).
 All groups listed in this Warning should be considered in order to perform a complete search.*
- C A23B 9/24
- in the form of liquids or solids
- WARNING
Group A23B 9/24 is impacted by reclassification into groups [A23B 75/00](#), [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

C A23B 9/26

- • Organic compounds; Microorganisms; Enzymes

WARNING

Group A23B 9/26 is impacted by reclassification into groups [A23B 75/00](#), [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

C A23B 9/28

- • • Microorganisms; Enzymes {; {Antibiotics}

WARNING

Group A23B 9/28 is impacted by reclassification into groups [A23B 75/00](#), [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

C A23B 9/30

- • Inorganic compounds

WARNING

Group A23B 9/30 is impacted by reclassification into groups [A23B 75/00](#), [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

C A23B 9/32

- • Apparatus for preserving using liquids

WARNING

Group A23B 9/32 is impacted by reclassification into groups [A23B 75/00](#), [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

C A23B 9/34

- • Apparatus for preserving using solids

WARNING

Group A23B 9/34 is impacted by reclassification into groups [A23B 75/00](#), [A23B 80/00](#), [A23B 85/00](#) and [A23B 90/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

N A23B 11/00

Preservation of milk or dairy products

WARNING

Group [A23B 11/00](#) is incomplete pending reclassification of documents from group [A23C 7/00](#).

Groups [A23C 7/00](#) and [A23B 11/00](#) should be considered in order to perform a complete search.

N A23B 11/10

- Preservation of milk or milk preparations

WARNING

Group [A23B 11/10](#) is incomplete pending reclassification of documents from group [A23C 9/00](#).

Groups [A23C 9/00](#) and [A23B 11/10](#) should be considered in order to perform a complete search.

N A23B 11/102

- {Storing or packaging in a vacuum or in inert or sterile gaseous atmosphere (impregnation with inert gases [A23C 9/1524](#))}

N A23B 11/12

- by heating (by irradiation, e.g. by microwaves [A23B 11/16](#))

- N A23B 11/123 . . . in packages
- N A23B 11/127 . . . progressively transported through the apparatus
- N A23B 11/13 . . . the materials being loose unpacked
- N A23B 11/1303 . . . {Apparatus through which the material is transported non progressively; Temperature-maintaining holding tanks or vats with discontinuous filling or discharge}
- N A23B 11/133 . . . and progressively transported through the apparatus
- N A23B 11/1332 . . . {in contact with multiple heating plates}
- N A23B 11/1334 . . . {the milk being heated by electrical or mechanical means, e.g. by friction}
- N A23B 11/1336 . . . {the milk flowing through with indirect heat exchange, containing rotating elements, e.g. for improving the heat exchange}
- N A23B 11/137 . . . in direct contact with the heating medium, e.g. steam
- N A23B 11/1375 . . . {by pulverisation of the milk, including free falling film}
- N A23B 11/14 . . by freezing or cooling
- N A23B 11/1403 . . {Freezing in loose unpacked form}
- N A23B 11/145 . . in packages
- N A23B 11/1455 . . . {Freezing in packages}
- N A23B 11/16 . . by irradiation, e.g. by microwaves
- N A23B 11/162 . . {by sonic or ultrasonic waves}
- N A23B 11/164 . . {by ultraviolet or infrared radiation}
- N A23B 11/18 . . by addition of preservatives (addition of microorganisms or enzymes [A23C 9/12](#); addition of other substances [A23C 9/152](#))
- N A23B 11/182 . . {Inorganic compounds, e.g. lactoperoxidase - H₂O₂ systems}
- N A23B 11/20 . Preservation of milk substitutes

WARNING

Group [A23B 11/20](#) is incomplete pending reclassification of documents from group [A23C 11/00](#).

Groups [A23C 11/00](#) and [A23B 11/20](#) should be considered in order to perform a complete search.

- N A23B 11/22 . . containing non-milk components as source of fats or proteins (preservation of whey or whey preparations containing non-milk components as source of fats or proteins [A23B 11/84](#))

WARNING

Group [A23B 11/22](#) is incomplete pending reclassification of documents from group [A23C 11/02](#).

Groups [A23C 11/02](#) and [A23B 11/22](#) should be considered in order to perform a complete search.

- N A23B 11/23 . . . containing non-milk fats but no non-milk proteins ([A23B 11/27](#), [A23B 11/29](#) take precedence)

WARNING

Group [A23B 11/23](#) is incomplete pending reclassification of documents from group [A23C 11/04](#).

Groups [A23C 11/04](#) and [A23B 11/23](#) should be considered in order to perform a complete search.

- N A23B 11/233
- • • {obtained by mixing non-fat components in powdered form with the non-milk fats or by dry mixing of the components}
- WARNING
Group [A23B 11/233](#) is incomplete pending reclassification of documents from group [A23C 11/045](#).
Groups [A23C 11/045](#) and [A23B 11/233](#) should be considered in order to perform a complete search.
- N A23B 11/25
- • • containing non-milk proteins ([A23B 11/27](#), [A23B 11/29](#) take precedence)
- WARNING
Group [A23B 11/25](#) is incomplete pending reclassification of documents from group [A23C 11/06](#).
Groups [A23C 11/06](#) and [A23B 11/25](#) should be considered in order to perform a complete search.
- N A23B 11/253
- • • {Microbial proteins, inactivated yeast or animal proteins}
- WARNING
Group [A23B 11/253](#) is incomplete pending reclassification of documents from group [A23C 11/065](#).
Groups [A23C 11/065](#) and [A23B 11/253](#) should be considered in order to perform a complete search.
- N A23B 11/27
- • • containing caseinates but no other milk proteins or milk fats
- WARNING
Group [A23B 11/27](#) is incomplete pending reclassification of documents from group [A23C 11/08](#).
Groups [A23C 11/08](#) and [A23B 11/27](#) should be considered in order to perform a complete search.
- N A23B 11/29
- • • containing or not lactose but no other milk components as source of fats, carbohydrates or proteins
- WARNING
Group [A23B 11/29](#) is incomplete pending reclassification of documents from group [A23C 11/10](#).
Groups [A23C 11/10](#) and [A23B 11/29](#) should be considered in order to perform a complete search.
- N A23B 11/293
- • • {containing only proteins from pulses, oilseeds or nuts, e.g. nut milk}
- WARNING
Group [A23B 11/293](#) is incomplete pending reclassification of documents from group [A23C 11/103](#).
Groups [A23C 11/103](#) and [A23B 11/293](#) should be considered in order to perform a complete search.
- N A23B 11/295
- • • • {Addition of, or treatment with, microorganisms ([A23B 11/75](#) takes precedence)}
- WARNING
Group [A23B 11/295](#) is incomplete pending reclassification of documents from group [A23C 11/106](#).
Groups [A23C 11/106](#) and [A23B 11/295](#) should be considered in order to perform a complete search.

- N A23B 11/30
- Preservation of cream or cream preparations
- WARNING
Group [A23B 11/30](#) is incomplete pending reclassification of documents from group [A23C 13/00](#).
Groups [A23C 13/00](#) and [A23B 11/30](#) should be considered in order to perform a complete search.
- N A23B 11/302
- • {Freezing; Subsequent melting}
- N A23B 11/35
- • by addition of preservatives (containing or treated with microorganisms, enzymes or antibiotics [A23C 13/16](#))
- N A23B 11/40
- Preservation of butter or butter preparations
- WARNING
Group [A23B 11/40](#) is incomplete pending reclassification of documents from group [A23C 15/00](#).
Groups [A23C 15/00](#) and [A23B 11/40](#) should be considered in order to perform a complete search.
- N A23B 11/45
- • by addition of preservatives
- N A23B 11/50
- Preservation of buttermilk or buttermilk preparations
- WARNING
Group [A23B 11/50](#) is incomplete pending reclassification of documents from group [A23C 17/00](#).
Groups [A23C 17/00](#) and [A23B 11/50](#) should be considered in order to perform a complete search.
- N A23B 11/55
- • containing, or treated with, microorganisms or enzymes
- WARNING
Group [A23B 11/55](#) is incomplete pending reclassification of documents from group [A23C 17/02](#).
Groups [A23C 17/02](#) and [A23B 11/55](#) should be considered in order to perform a complete search.
- N A23B 11/60
- Preservation of cheese or cheese preparations
- WARNING
Group [A23B 11/60](#) is incomplete pending reclassification of documents from group [A23C 19/00](#).
Groups [A23C 19/00](#) and [A23B 11/60](#) should be considered in order to perform a complete search.
- N A23B 11/602
- • {Pasteurisation; Sterilisation; Hot packaging}
- N A23B 11/604
- • {Freezing; Treating cheese in frozen state; Thawing of frozen cheese}
- N A23B 11/65
- • by addition of preservatives
- N A23B 11/652
- • • {Inorganic compounds; Inert or noble gases; Carbon dioxide}
- N A23B 11/67
- • • of antibiotics
- N A23B 11/70
- Preservation of cheese substitutes
- WARNING
Group [A23B 11/70](#) is incomplete pending reclassification of documents from group [A23C 20/00](#).
Groups [A23C 20/00](#) and [A23B 11/70](#) should be considered in order to perform a complete search.

- N A23B 11/703
- • {mainly containing proteins from pulses or oilseeds}
- WARNING
Group [A23B 11/703](#) is incomplete pending reclassification of documents from group [A23C 20/005](#).
Groups [A23C 20/005](#) and [A23B 11/703](#) should be considered in order to perform a complete search.
- N A23B 11/75
- • containing neither milk components, nor caseinate, nor lactose, as sources of fats, proteins or carbohydrates
- WARNING
Group [A23B 11/75](#) is incomplete pending reclassification of documents from group [A23C 20/02](#).
Groups [A23C 20/02](#) and [A23B 11/75](#) should be considered in order to perform a complete search.
- N A23B 11/753
- • {mainly containing proteins from pulses or oilseeds}
- WARNING
Group [A23B 11/753](#) is incomplete pending reclassification of documents from group [A23C 20/025](#).
Groups [A23C 20/025](#) and [A23B 11/753](#) should be considered in order to perform a complete search.
- N A23B 11/80
- Preservation of whey or whey preparations (preservation of milk or milk preparations [A23B 11/10](#))
- WARNING
Group [A23B 11/80](#) is incomplete pending reclassification of documents from group [A23C 21/00](#).
Groups [A23C 21/00](#) and [A23B 11/80](#) should be considered in order to perform a complete search.
- N A23B 11/82
- • containing, or treated with, microorganisms or enzymes
- WARNING
Group [A23B 11/82](#) is incomplete pending reclassification of documents from group [A23C 21/02](#).
Groups [A23C 21/02](#) and [A23B 11/82](#) should be considered in order to perform a complete search.
- N A23B 11/823
- • {Lactose hydrolysing enzymes, e.g. lactase or B-galactosidase}
- WARNING
Group [A23B 11/823](#) is incomplete pending reclassification of documents from group [A23C 21/023](#).
Groups [A23C 21/023](#) and [A23B 11/823](#) should be considered in order to perform a complete search.
- N A23B 11/825
- • {containing, or treated only with, lactic acid producing bacteria, bifidobacteria or propionic acid bacteria}
- WARNING
Group [A23B 11/825](#) is incomplete pending reclassification of documents from group [A23C 21/026](#).
Groups [A23C 21/026](#) and [A23B 11/825](#) should be considered in order to perform a complete search.

- N A23B 11/84
- containing non-milk components as source of fats or proteins
- WARNING
Group [A23B 11/84](#) is incomplete pending reclassification of documents from group [A23C 21/04](#).
Groups [A23C 21/04](#) and [A23B 11/84](#) should be considered in order to perform a complete search.
- N A23B 11/86
- Mixtures of whey with milk products or milk components
- WARNING
Group [A23B 11/86](#) is incomplete pending reclassification of documents from group [A23C 21/06](#).
Groups [A23C 21/06](#) and [A23B 11/86](#) should be considered in order to perform a complete search.
- N A23B 11/87
- containing other organic additives, e.g. vegetable or animal products
- WARNING
Group [A23B 11/87](#) is incomplete pending reclassification of documents from group [A23C 21/08](#).
Groups [A23C 21/08](#) and [A23B 11/87](#) should be considered in order to perform a complete search.
- N A23B 11/88
- containing inorganic additives
- WARNING
Group [A23B 11/88](#) is incomplete pending reclassification of documents from group [A23C 21/10](#).
Groups [A23C 21/10](#) and [A23B 11/88](#) should be considered in order to perform a complete search.
- N A23B 20/00**
- Preservation of edible oils or fats**
- WARNING
Group [A23B 20/00](#) is incomplete pending reclassification of documents from groups [A23D 7/00](#) and [A23D 9/00](#).
Groups [A23D 7/00](#), [A23D 9/00](#) and [A23B 20/00](#) should be considered in order to perform a complete search.
- N A23B 20/10
- Preservation of edible oil or fat compositions containing an aqueous phase, e.g. margarines
- N A23B 20/30
- Preservation of other edible oils or fats, e.g. shortenings or cooking oils
- N A23B 40/00**
- Preservation of flour or dough before baking**
- WARNING
Group [A23B 40/00](#) is incomplete pending reclassification of documents from groups [A21D 6/00](#), [A21D 6/006](#) and [A21D 6/008](#).
Group [A23B 40/00](#) is also impacted by reclassification into groups [A23B 40/10](#), [A23B 40/30](#), [A23B 40/50](#) and [A23B 40/60](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N A23B 40/10
- by cooling
- WARNING
Group [A23B 40/10](#) is incomplete pending reclassification of documents from groups [A23B 40/00](#), [A21D 6/00](#) and [A21D 6/001](#).
All groups listed in this Warning should be considered in order to perform a complete search.

- N A23B 40/30
- by heating
- WARNING
Group [A23B 40/30](#) is incomplete pending reclassification of documents from groups [A23B 40/00](#), [A21D 6/00](#) and [A21D 6/003](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N A23B 40/50
- by irradiation
- WARNING
Group [A23B 40/50](#) is incomplete pending reclassification of documents from groups [A23B 40/00](#), [A21D 6/00](#) and [A21D 6/005](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N A23B 40/60
- by storage in an inert atmosphere
- WARNING
Group [A23B 40/60](#) is incomplete pending reclassification of documents from groups [A23B 40/00](#) and [A21D 6/00](#).
Groups [A23B 40/00](#), [A21D 6/00](#) and [A23B 40/60](#) should be considered in order to perform a complete search.
- N A23B 45/00**
- Preservation of finished bakery products**
- WARNING
Group [A23B 45/00](#) is incomplete pending reclassification of documents from group [A21D 15/00](#).
Groups [A21D 15/00](#) and [A23B 45/00](#) should be considered in order to perform a complete search.
- N A23B 45/10
- by cooling
- WARNING
Group [A23B 45/10](#) is incomplete pending reclassification of documents from group [A21D 15/02](#).
Groups [A21D 15/02](#) and [A23B 45/10](#) should be considered in order to perform a complete search.
- N A23B 45/30
- by heating
- WARNING
Group [A23B 45/30](#) is incomplete pending reclassification of documents from group [A21D 15/04](#).
Groups [A21D 15/04](#) and [A23B 45/30](#) should be considered in order to perform a complete search.
- N A23B 45/50
- by irradiation
- WARNING
Group [A23B 45/50](#) is incomplete pending reclassification of documents from group [A21D 15/06](#).
Groups [A21D 15/06](#) and [A23B 45/50](#) should be considered in order to perform a complete search.
- N A23B 45/70
- by coating
- WARNING
Group [A23B 45/70](#) is incomplete pending reclassification of documents from group [A21D 15/08](#).

Groups [A21D 15/08](#) and [A23B 45/70](#) should be considered in order to perform a complete search.

Q A23B 70/00

Preservation of non-alcoholic beverages (preservation of beverages from legumes [A23B 75/10](#); preservation of beverages containing tea, tea substitutes or herbal tea [A23B 85/10](#); preservation of beverages containing coffee or coffee substitutes [A23B 90/10](#))

WARNING

Group [A23B 70/00](#) is impacted by reclassification into groups [A23B 70/20](#), [A23B 75/10](#), [A23B 85/10](#) and [A23B 90/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

N A23B 70/10

- by addition of preservatives

N A23B 70/20

- by cooling

WARNING

Group [A23B 70/20](#) is incomplete pending reclassification of documents from group [A23B 70/00](#).

Groups [A23B 70/00](#) and [A23B 70/20](#) should be considered in order to perform a complete search.

N A23B 70/30

- by heating

N A23B 70/35

- by irradiation or electric treatment

N A23B 70/50

- by irradiation or electric treatment, without heating

N A23B 75/00

Preservation of pulses; Preservation of products from legumes

WARNING

Group [A23B 75/00](#) is incomplete pending reclassification of documents from groups [A23B 9/00](#), [A23B 9/005](#), [A23B 9/02](#), [A23B 9/025](#), [A23B 9/04](#), [A23B 9/06](#), [A23B 9/08](#), [A23B 9/10](#), [A23B 9/12](#), [A23B 9/14](#), [A23B 9/16](#), [A23B 9/18](#), [A23B 9/20](#), [A23B 9/22](#), [A23B 9/24](#), [A23B 9/26](#), [A23B 9/28](#), [A23B 9/30](#), [A23B 9/32](#), [A23B 9/34](#), [A23L 11/00](#), [A23L 11/01](#), [A23L 11/03](#), [A23L 11/05](#), [A23L 11/07](#), [A23L 11/10](#), [A23L 11/30](#), [A23L 11/31](#), [A23L 11/32](#), [A23L 11/33](#), [A23L 11/34](#), [A23L 11/35](#), [A23L 11/36](#), [A23L 11/37](#), [A23L 11/40](#), [A23L 11/45](#), [A23L 11/50](#), and [A23L 11/70](#).

All groups listed in this Warning should be considered in order to perform a complete search.

N A23B 75/10

- Preservation of beverages from legumes, e.g. soy drinks

WARNING

Group [A23B 75/10](#) is incomplete pending reclassification of documents from groups [A23B 70/00](#), [A23L 11/60](#) and [A23L 11/65](#).

All groups listed in this Warning should be considered in order to perform a complete search.

N A23B 80/00

Preservation of cocoa or cocoa products

WARNING

Group [A23B 80/00](#) is incomplete pending reclassification of documents from groups [A23B 2/00](#) - [A23B 2/53](#), [A23B 2/57](#), [A23B 2/60](#) - [A23B 2/605](#), [A23B 2/70](#) - [A23B 2/97](#), [A23B 7/00](#) - [A23B 7/16](#), [A23B 9/00](#) - [A23B 9/34](#) and [A23G 1/00](#) - [A23G 1/56](#).

All groups listed in this Warning should be considered in order to perform a complete search.

N A23B 85/00**Preservation of tea, tea substitutes or herbal tea**WARNING

Group [A23B 85/00](#) is incomplete pending reclassification of documents from groups [A23B 2/00](#) - [A23B 2/53](#), [A23B 2/57](#), [A23B 2/60](#) - [A23B 2/605](#), [A23B 2/70](#) - [A23B 2/97](#), [A23B 7/00](#) - [A23B 7/16](#), [A23B 9/00](#) - [A23B 9/34](#) and [A23F 3/00](#) - [A23F 3/426](#).

All groups listed in this Warning should be considered in order to perform a complete search.

N A23B 85/10

- Preservation of beverages containing tea, tea substitutes or herbal tea

WARNING

Group [A23B 85/10](#) is incomplete pending reclassification of documents from group [A23B 70/00](#).

Groups [A23B 70/00](#) and [A23B 85/10](#) should be considered in order to perform a complete search.

N A23B 90/00**Preservation of coffee or coffee substitutes**WARNING

Group [A23B 90/00](#) is incomplete pending reclassification of documents from groups [A23B 2/00](#) - [A23B 2/53](#), [A23B 2/57](#), [A23B 2/60](#) - [A23B 2/605](#), [A23B 2/70](#) - [A23B 2/97](#), [A23B 7/00](#) - [A23B 7/16](#), [A23B 9/00](#) - [A23B 9/34](#) and [A23F 5/00](#) - [A23F 5/505](#).

All groups listed in this Warning should be considered in order to perform a complete search.

N A23B 90/10

- Preservation of beverages containing coffee or coffee substitutes

WARNING

Group [A23B 90/10](#) is incomplete pending reclassification of documents from group [A23B 70/00](#).

Groups [A23B 70/00](#) and [A23B 90/10](#) should be considered in order to perform a complete search.

N A23B 99/00**Subject matter not provided for in other groups of this subclass****Project: RP12367 (A23C)****M A23C**

DAIRY PRODUCTS, e.g. MILK, BUTTER OR CHEESE; MILK OR CHEESE SUBSTITUTES; MAKING OR TREATMENT THEREOF (~~obtaining protein compositions for foodstuffs~~ [A23J 1/00](#) ~~preservation thereof~~ [A23B 11/00](#))

NOTE

This subclass covers:

- the chemical aspects of making dairy products;
- the apparatus used for performing techniques provided for therein, e.g. for concentration, evaporation, drying, ~~preservation~~, or sterilisation, unless such apparatus is specifically provided for in another subclass, e.g. *in subclass* [A01J](#) for treatment of milk or cream for manufacture of butter or cheese.

M A23C 1/00

Concentration, evaporation or drying (~~A23C 3/00 takes precedence~~; products obtained thereby [A23C 9/00](#))

D A23C 3/00

Preservation of milk or milk preparations (of cream [A23C 13/08](#); of butter [A23C 15/18](#); of cheese [A23C 19/097](#))

<administratively transferred to [A23B 11/10](#)>

- D A23C 3/005
- {Storing or packaging in a vacuum or in inert or sterile gaseous atmosphere (impregnation with inert gases A23C 9/1524)}
- <administratively transferred to [A23B 11/102](#)>
- D A23C 3/02
- by heating (A23C 3/07 takes precedence)
- <administratively transferred to [A23B 11/12](#)>
- D A23C 3/023
- • in packages
- <administratively transferred to [A23B 11/123](#)>
- D A23C 3/027
- • • progressively transported through the apparatus
- <administratively transferred to [A23B 11/127](#)>
- D A23C 3/03
- • the materials being loose unpacked
- <administratively transferred to [A23B 11/13](#)>
- D A23C 3/031
- • • {Apparatus through which the material is transported non-progressively; Temperature-maintaining holding tanks or vats with discontinuous filling or discharge}
- <administratively transferred to [A23B 11/1303](#)>
- D A23C 3/033
- • • and progressively transported through the apparatus
- <administratively transferred to [A23B 11/133](#)>
- D A23C 3/0332
- • • • {in contact with multiple heating plates}
- <administratively transferred to [A23B 11/1332](#)>
- D A23C 3/0335
- • • • {the milk being heated by electrical or mechanical means, e.g. by friction}
- <administratively transferred to [A23B 11/1334](#)>
- D A23C 3/0337
- • • • {the milk flowing through with indirect heat exchange, containing rotating elements, e.g. for improving the heat exchange}
- <administratively transferred to [A23B 11/1336](#)>
- D A23C 3/037
- • • • in direct contact with the heating medium, e.g. steam
- <administratively transferred to [A23B 11/137](#)>
- D A23C 3/0375
- • • • • {by pulverisation of the milk, including free falling film}
- <administratively transferred to [A23B 11/1375](#)>
- D A23C 3/04
- by freezing or cooling
- <administratively transferred to [A23B 11/14](#)>
- D A23C 3/045
- • {Freezing in loose unpacked form}
- <administratively transferred to [A23B 11/1403](#)>
- D A23C 3/05
- • in packages
- <administratively transferred to [A23B 11/145](#)>
- D A23C 3/055
- • • {Freezing in packages}
- <administratively transferred to [A23B 11/1455](#)>
- D A23C 3/07
- by irradiation, e.g. by microwaves (-; by sonic or ultrasonic waves)
- <administratively transferred to [A23B 11/16](#)>
- D A23C 3/073
- • {by sonic or ultrasonic waves}
- <administratively transferred to [A23B 11/162](#)>
- D A23C 3/076
- • {by ultraviolet or infrared radiation}
- <administratively transferred to [A23B 11/164](#)>

- D A23C 3/08
- by addition of preservatives (additions of microorganisms or enzymes A23C 9/12, of other substances A23C 9/152)
- <administratively transferred to [A23B 11/18](#)>
- D A23C 3/085
- {Inorganic compounds, e.g. lactoperoxidase \rightarrow H₂O₂ systems}
- <administratively transferred to [A23B 11/182](#)>
- C A23C 7/00
- Other dairy technology (*preservation of milk or dairy products* [A23B 11/00](#))**
- WARNING**
- Group [A23C 7/00](#) is impacted by reclassification into group [A23B 11/00](#). Groups [A23C 7/00](#) and [A23B 11/00](#) should be considered in order to perform a complete search.*
- C A23C 9/00
- Milk preparations; Milk powder or milk powder preparations (mixtures of whey with milk products or milk components [A23C 21/06](#); *preservation of milk or milk preparations* [A23B 11/10](#))**
- WARNING**
- Group [A23C 9/00](#) is impacted by reclassification into group [A23B 11/10](#). Groups [A23C 9/00](#) and [A23B 11/10](#) should be considered in order to perform a complete search.*
- U A23C 9/12
- Fermented milk preparations; Treatment using microorganisms or enzymes
- U A23C 9/123
- using only microorganisms of the genus lactobacteriaceae; Yoghurt ([A23C 9/13](#) takes precedence)
- M A23C 9/1236
- {using Leuconostoc, Pediococcus or Streptococcus sp. other than Streptococcus Thermophilus; Artificial sour buttermilk in general ([A23C 9/1234](#) and [A23C 17/02](#) take precedence; *preservation of buttermilk or buttermilk preparations containing, or treated with, microorganisms or enzymes* [A23B 11/55](#))}
- C A23C 11/00
- Milk substitutes, e.g. coffee whitener compositions (cheese substitutes [A23C 20/00](#); *preservation of milk substitutes* [A23B 11/20](#); butter substitutes [A23D](#))**
- WARNING**
- Group [A23C 11/00](#) is impacted by reclassification into group [A23B 11/20](#). Groups [A23C 11/00](#) and [A23B 11/20](#) should be considered in order to perform a complete search.*
- C A23C 11/02
- containing at least one non-milk component as source of fats or proteins (addition of non-milk fats or non-milk proteins in making cheese curd [A23C 19/055](#); whey or whey preparations containing non-milk components as source of fats or proteins [A23C 21/04](#))
- WARNING**
- Group [A23C 11/02](#) is impacted by reclassification into group [A23B 11/22](#). Groups [A23C 11/02](#) and [A23B 11/22](#) should be considered in order to perform a complete search.*
- C A23C 11/04
- containing non-milk fats but no non-milk proteins ([A23C 11/08](#), [A23C 11/10](#) take precedence)
- WARNING**
- Group [A23C 11/04](#) is impacted by reclassification into group [A23B 11/23](#). Groups [A23C 11/04](#) and [A23B 11/23](#) should be considered in order to perform a complete search.*

- C A23C 11/045
- • {obtained by mixing the non-fat components in powdered form with the fats or by dry mixing of the components}
- WARNING
Group [A23C 11/045](#) is impacted by reclassification into group [A23B 11/233](#).
Groups [A23C 11/045](#) and [A23B 11/233](#) should be considered in order to perform a complete search.
- C A23C 11/06
- • containing non-milk proteins ([A23C 11/08](#), [A23C 11/10](#) take precedence)
- WARNING
Group [A23C 11/06](#) is impacted by reclassification into group [A23B 11/25](#).
Groups [A23C 11/06](#) and [A23B 11/25](#) should be considered in order to perform a complete search.
- C A23C 11/065
- • {Microbial proteins, inactivated yeast or animal proteins}
- WARNING
Group [A23C 11/065](#) is impacted by reclassification into group [A23B 11/253](#).
Groups [A23C 11/065](#) and [A23B 11/253](#) should be considered in order to perform a complete search.
- C A23C 11/08
- • containing caseinates but no other milk proteins nor milk fats
- WARNING
Group [A23C 11/08](#) is impacted by reclassification into group [A23B 11/27](#).
Groups [A23C 11/08](#) and [A23B 11/27](#) should be considered in order to perform a complete search.
- C A23C 11/10
- • containing or not lactose but no other milk components as source of fats, carbohydrates or proteins
- WARNING
Group [A23C 11/10](#) is impacted by reclassification into group [A23B 11/29](#).
Groups [A23C 11/10](#) and [A23B 11/29](#) should be considered in order to perform a complete search.
- C A23C 11/103
- • {containing only proteins from pulses, oilseeds or nuts, e.g. nut milk}
- WARNING
Group [A23C 11/103](#) is impacted by reclassification into group [A23B 11/293](#).
Groups [A23C 11/103](#) and [A23B 11/293](#) should be considered in order to perform a complete search.
- C A23C 11/106
- • • {Addition of, or treatment with, microorganisms ([A23C 20/025](#) takes precedence)}
- WARNING
Group [A23C 11/106](#) is impacted by reclassification into group [A23B 11/295](#).
Groups [A23C 11/106](#) and [A23B 11/295](#) should be considered in order to perform a complete search.
- C A23C 13/00
- Cream; Cream preparations ([preservation of cream or cream preparations A23B 11/30](#); ice-cream [A23G 9/00](#)); Making thereof**
- WARNING
Group [A23C 13/00](#) is impacted by reclassification into group [A23B 11/30](#).

Groups [A23C 13/00](#) and [A23B 11/30](#) should be considered in order to perform a complete search.

- D A23C 13/08
 - Preservation
 - <administratively transferred to [A23B 11/30](#)>
- D A23C 13/085
 - • {Freezing; Subsequent melting}
 - <administratively transferred to [A23B 11/302](#)>
- D A23C 13/10
 - • by addition of preservatives (A23C 13/14, A23C 13/16 take precedence)
 - <administratively transferred to [A23B 11/35](#)>

C A23C 15/00 **Butter; Butter preparations; Making thereof (*preservation of butter or butter preparations* [A23B 11/40](#); butter substitutes [A23D](#))**

WARNING

Group [A23C 15/00](#) is impacted by reclassification into group [A23B 11/40](#). Groups [A23C 15/00](#) and [A23B 11/40](#) should be considered in order to perform a complete search.

- D A23C 15/18
 - Preservation
 - <administratively transferred to [A23B 11/40](#)>
- D A23C 15/20
 - • by addition of preservatives {or antioxidants}
 - <administratively transferred to [A23B 11/45](#)>

C A23C 17/00 **Buttermilk; Buttermilk preparations (milk preparations, milk powder or milk powder preparations in which the chemical composition of the milk is modified by non-chemical treatment [A23C 9/14](#); *preservation of buttermilk or buttermilk preparations* [A23B 11/50](#))**

WARNING

Group [A23C 17/00](#) is impacted by reclassification into group [A23B 11/50](#). Groups [A23C 17/00](#) and [A23B 11/50](#) should be considered in order to perform a complete search.

- C A23C 17/02
 - containing, or treated with, microorganisms or enzymes

WARNING

Group [A23C 17/02](#) is impacted by reclassification into group [A23B 11/55](#). Groups [A23C 17/02](#) and [A23B 11/55](#) should be considered in order to perform a complete search.

C A23C 19/00 **Cheese; Cheese preparations; Making thereof (cheese substitutes [A23C 20/00](#); *preservation of cheese or cheese preparations* [A23B 11/60](#))**

WARNING

Group [A23C 19/00](#) is impacted by reclassification into group [A23B 11/60](#). Groups [A23C 19/00](#) and [A23B 11/60](#) should be considered in order to perform a complete search.

- U A23C 19/02
 - Making cheese curd
- M A23C 19/05
 - • Treating milk before coagulation; Separating whey from curd (~~A23C 19/097 takes precedence~~)
- M A23C 19/06
 - Treating cheese curd after whey separation; Products obtained thereby (~~A23C 19/097 takes precedence~~)
- M A23C 19/09
 - • Other cheese preparations; Mixtures of cheese with other foodstuffs (~~preservation A23C 19/097~~)

- D A23C 19/097
 - Preservation
 - <administratively transferred to [A23B 11/60](#)>
- D A23C 19/0973
 - • {Pasteurisation; Sterilisation; Hot packaging}
 - <administratively transferred to [A23B 11/602](#)>
- D A23C 19/0976
 - • {Freezing; Treating cheese in frozen state; Thawing of frozen cheese}
 - <administratively transferred to [A23B 11/604](#)>
- D A23C 19/10
 - • Addition of preservatives
 - <administratively transferred to [A23B 11/65](#)>
- D A23C 19/105
 - • • {Inorganic compounds; Inert or noble gases; Carbon dioxide}
 - <administratively transferred to [A23B 11/652](#)>
- D A23C 19/11
 - • • of antibiotics {or bacteriocins}
 - <administratively transferred to [A23B 11/67](#)>
- M A23C 19/14
 - Treating cheese after having reached its definite form, e.g. ripening, smoking
(~~preservation A23C 19/097~~)

C A23C 20/00 Cheese substitutes ([A23C 19/055](#), [A23C 19/093](#) take precedence;
preservation of cheese substitutes A23B 11/70)

WARNING

Group [A23C 20/00](#) is impacted by reclassification into group [A23B 11/70](#).
Groups [A23C 20/00](#) and [A23B 11/70](#) should be considered in order to perform a complete search.

- C A23C 20/005
 - {mainly containing proteins from pulses or oilseeds}

WARNING

Group [A23C 20/005](#) is impacted by reclassification into group [A23B 11/703](#).
Groups [A23C 20/005](#) and [A23B 11/703](#) should be considered in order to perform a complete search.

- C A23C 20/02
 - containing neither milk components, nor caseinate, nor lactose, as sources of fats, proteins or carbohydrates

WARNING

Group [A23C 20/02](#) is impacted by reclassification into group [A23B 11/75](#).
Groups [A23C 20/02](#) and [A23B 11/75](#) should be considered in order to perform a complete search.

- C A23C 20/025
 - • {mainly containing proteins from pulses or oilseeds}

WARNING

Group [A23C 20/025](#) is impacted by reclassification into group [A23B 11/753](#).
Groups [A23C 20/025](#) and [A23B 11/753](#) should be considered in order to perform a complete search.

C A23C 21/00 Whey; Whey preparations (concentration, evaporation or drying [A23C 1/00](#); ~~preservation of milk or milk preparations A23C 3/00~~; milk preparations, milk powder or milk powder preparations in which the chemical composition of the milk is modified by non-chemical treatment [A23C 9/14](#); *preservation of whey or whey preparations A23B 11/80*)

WARNING

Group [A23C 21/00](#) is impacted by reclassification into group [A23B 11/80](#).
Groups [A23C 21/00](#) and [A23B 11/80](#) should be considered in order to perform a complete search.

- C A23C 21/02
- containing, or treated with, microorganisms or enzymes
- WARNING**
Group A23C 21/02 is impacted by reclassification into group A23B 11/82. Groups A23C 21/02 and A23B 11/82 should be considered in order to perform a complete search.
- C A23C 21/023
- {Lactose hydrolysing enzymes, e.g. lactase, B-galactosidase}
- WARNING**
Group A23C 21/023 is impacted by reclassification into group A23B 11/823. Groups A23C 21/023 and A23B 11/823 should be considered in order to perform a complete search.
- C A23C 21/026
- {containing, or treated only with, lactic acid producing bacteria, bifidobacteria or propionic acid bacteria}
- WARNING**
Group A23C 21/026 is impacted by reclassification into group A23B 11/825. Groups A23C 21/026 and A23B 11/825 should be considered in order to perform a complete search.
- C A23C 21/04
- containing non-milk components as source of fats or proteins
- WARNING**
Group A23C 21/04 is impacted by reclassification into group A23B 11/84. Groups A23C 21/04 and A23B 11/84 should be considered in order to perform a complete search.
- C A23C 21/06
- Mixtures of whey with milk products or milk components
- WARNING**
Group A23C 21/06 is impacted by reclassification into group A23B 11/86. Groups A23C 21/06 and A23B 11/86 should be considered in order to perform a complete search.
- C A23C 21/08
- containing other organic additives, e.g. vegetable or animal products
- WARNING**
Group A23C 21/08 is impacted by reclassification into group A23B 11/87. Groups A23C 21/08 and A23B 11/87 should be considered in order to perform a complete search.
- C A23C 21/10
- containing inorganic additives
- WARNING**
Group A23C 21/10 is impacted by reclassification into group A23B 11/88. Groups A23C 21/10 and A23B 11/88 should be considered in order to perform a complete search.

Project: Unknown (A23C)

- U A23C 2210/00 **Physical treatment of dairy products**
- M A23C 2210/10
- General processes or apparatus not classified in ~~A23C 3/0375~~ A23B 11/1375 for direct contact of a falling film of liquid with steam

Project: RP12368 (A23D)

M A23D **EDIBLE OILS OR FATS, e.g. MARGARINES, SHORTENINGS, *OR* COOKING OILS** (~~animal feeding-stuffs A23K 10/00-A23K 20/30, A23K 30/00-A23K 50/90; foods or foodstuffs containing edible oils or fats A21D, A23C, A23G, A23L; obtaining, refining, preserving C11B, C11C; hydrogenation C11C 3/12~~**preservation thereof A23B 20/00; production, refinement or preservation of animal or vegetable fats or oils C11B, C11C)**

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

C A23D 7/00 **Edible oil or fat compositions containing an aqueous phase, e.g. margarines** (**preservation of edible oil compositions containing aqueous phase A23B 20/10**)

WARNING

Group A23D 7/00 is impacted by reclassification into group A23B 20/00. Groups A23D 7/00 and A23B 20/00 should be considered in order to perform a complete search.

D A23D 7/06 • Preservation of finished products {(by using antioxidants or biocides C11B 5/00)}

<administratively transferred to [A23B 20/10](#)>

C A23D 9/00 **Other edible oils or fats, e.g. shortenings, *or* cooking oils** (**preservation of other edible oils A23B 20/30**)

WARNING

Group A23D 9/00 is impacted by reclassification into group A23B 20/00. Groups A23D 9/00 and A23B 20/00 should be considered in order to perform a complete search.

D A23D 9/06 • Preservation of finished products {(by using antioxidants or biocides C11B 5/00)}

<administratively transferred to [A23B 20/30](#)>

Project: RP12381 (A23F)

C A23F 3/00 **Tea; Tea substitutes; Preparations thereof** (**preservation of tea, tea substitutes or herbal tea A23B 85/00**)

WARNING

Groups A23F 3/00 - A23F 3/426 are impacted by reclassification into group A23B 85/00. All groups listed should be considered in order to perform a complete search.

C A23F 3/06 • Treating tea before extraction (reducing or removing alkaloid content [A23F 3/36](#)); Preparations produced thereby (tea extract preparations [A23F 3/16](#))

C A23F 3/08 • • Oxidation; Fermentation

C A23F 3/10 • • • Fermentation with addition of microorganisms or enzymes

C A23F 3/12 • • Rolling or shredding tea leaves

C A23F 3/14 • • Tea preparations, e.g. using additives (flavouring [A23F 3/40](#))

C A23F 3/16 • Tea extraction; Tea extracts; Treating tea extract; Making instant tea

C A23F 3/163 • • {Liquid or semi-liquid tea extract preparations, e.g. gels, *or* liquid extracts in solid capsules}

- C A23F 3/166 • • {Addition of, or treatment with, enzymes or microorganisms}
- C A23F 3/18 • • Extraction of water soluble tea constituents ({[A23F 3/166](#) takes precedence};
} isolation of tea flavour or tea oil [A23F 3/42](#))
- C A23F 3/20 • • Removing unwanted substances ({[A23F 3/166](#) takes precedence}; } reducing
or removing alkaloid content [A23F 3/38](#))
- C A23F 3/205 • • • {Using flocculating or adsorbing agents}
- C A23F 3/22 • • Drying or concentrating tea extract ({[A23F 3/166](#) takes precedence})
- C A23F 3/225 • • • {by evaporation, e.g. drying in thin layers, foam drying ([A23F 3/26](#) and
[A23F 3/28](#) take precedence)}
- C A23F 3/24 • • • by freezing out the water
- C A23F 3/26 • • • by lyophilisation
- C A23F 3/28 • • • by spraying into a gas stream
- C A23F 3/30 • • Further treatment of dried tea extract; Preparations produced thereby, e.g.
instant tea ({[A23F 3/166](#) takes precedence}; } flavouring [A23F 3/40](#))
- C A23F 3/32 • • • Agglomerating, flaking or tableting {or granulating}
- C A23F 3/34 • Tea substitutes, e.g. matè; Extracts or infusions thereof
- C A23F 3/36 • Reducing or removing alkaloid content; Preparations produced thereby;
Extracts or infusions thereof
- C A23F 3/363 • • {by addition of alkaloid neutralising or complexing agents ([A23F 3/166](#) takes
precedence)}
- C A23F 3/366 • • {by extraction of the leaves with selective solvents}
- C A23F 3/38 • • Reducing or removing alkaloid content from tea extract
- C A23F 3/385 • • • {using flocculating, precipitating, adsorbing or complex-forming agents, or
ion-exchangers}
- C A23F 3/40 • Tea flavour; Tea oil; Flavouring of tea or tea extract (synthetic tea flavours
[A23L 27/20](#))
- C A23F 3/405 • • {Flavouring with flavours other than natural tea flavour or tea oil}
- C A23F 3/42 • • Isolation {or recuperation} of tea flavour or tea oil
- C A23F 3/423 • • • {by solvent extraction; Tea flavour from tea oil}
- C A23F 3/426 • • • {by distillation, e.g. stripping leaves; Recovering volatile gases (flavour from
tea oil [A23F 3/423](#))}

**C A23F 5/00 Coffee; Coffee substitutes; Preparations thereof (*preservation of coffee or
coffee substitutes A23B 90/00*)**

WARNING

*Groups A23F 5/00 - A23F 5/505 are impacted by reclassification into group
A23B 90/00.*

All groups listed should be considered in order to perform a complete search.

- C A23F 5/02 • Treating green coffee; Preparations produced thereby (roasting [A23F 5/04](#);
removing unwanted substances [A23F 5/16](#); reducing or removing alkaloid
content [A23F 5/20](#); extraction [A23F 5/24](#))
- C A23F 5/04 • Methods of roasting coffee (machines therefor [A23N 12/00](#))
- C A23F 5/043 • • {in the presence of inert particles}
- C A23F 5/046 • • {with agitation or transportation of the beans by gases; Fluidised-bed roasting
or fluidised-bed cooling after roasting ([A23F 5/043](#) takes precedence)}
- C A23F 5/06 • • of roasting extracted coffee {; Caramelisation of coffee extract}
- C A23F 5/08 • Methods of grinding coffee (coffee mills [A47J 42/00](#))

- C A23F 5/10
 - Treating roasted coffee; Preparations produced thereby (removing unwanted substances [A23F 5/16](#); reducing or removing alkaloid content [A23F 5/20](#); coffee extraction, making instant coffee [A23F 5/24](#))
- C A23F 5/105
 - • {Treating in vacuum or with inert or noble gases; Storing in gaseous atmosphere; Packaging}
- C A23F 5/12
 - • Agglomerating, flaking or tableting (of coffee extract or instant coffee [A23F 5/38](#))
- C A23F 5/125
 - • • {Tablets or other similar solid forms}
- C A23F 5/14
 - • using additives, e.g. milk; or sugar; Coating; e.g. for preserving (flavouring [A23F 5/46](#))
- C A23F 5/145
 - • • {Coating whole beans with a layer}
- C A23F 5/16
 - Removing unwanted substances (reducing or removing alkaloid content [A23F 5/20](#))
- C A23F 5/163
 - • {using enzymes or microorganisms}
- C A23F 5/166
 - • {by extraction of the beans, ground or not, with selective solvents other than water or aqueous bean extracts, including supercritical gases}
- C A23F 5/18
 - • from coffee extract {([A23F 5/163](#) takes precedence)}
- C A23F 5/185
 - • • {using flocculating, precipitating, adsorbing or complex-forming agents, or ion-exchangers}
- C A23F 5/20
 - Reducing or removing alkaloid content; Preparations produced thereby; Extracts or infusions thereof
- C A23F 5/202
 - • {by addition of alkaloid neutralising or complexing agents}
- C A23F 5/204
 - • {using enzymes or microorganisms}
- C A23F 5/206
 - • {by extraction of the beans with selective solvents other than water or aqueous bean extracts, including supercritical gases}
- C A23F 5/208
 - • {by extraction of the beans with water, aqueous solutions without organic or inorganic solvents; or aqueous coffee extract}
- C A23F 5/22
 - • Reducing or removing alkaloid content from coffee extract
- C A23F 5/223
 - • • {using flocculating, precipitating, adsorbing or complex-forming agents, or ion-exchangers}
- C A23F 5/226
 - • • {by extraction with selective solvents}
- C A23F 5/24
 - Extraction of coffee (isolation of coffee flavour or coffee oil [A23F 5/48](#)); Coffee extracts (with reduced alkaloid content [A23F 5/20](#)); Making instant coffee (methods of roasting extracted coffee [A23F 5/06](#))
- C A23F 5/243
 - • {Liquid, semi-liquid or non-dried semi-solid coffee extract preparations; Coffee gels; Liquid coffee in solid capsules ([A23F 5/246](#) takes precedence)}
- C A23F 5/246
 - • {Addition of, or treatment with, enzymes or microorganisms ([A23F 5/163](#) and [A23F 5/204](#) take precedence)}
- C A23F 5/26
 - • Extraction of water-soluble constituents {([A23F 5/246](#) takes precedence)}
- C A23F 5/262
 - • • {the extraction liquid flowsflowing through a stationary bed of solid substances, e.g. in percolation columns}
- C A23F 5/265
 - • • {the solid substances arebeing transported through the apparatus during the extraction cycle}
- C A23F 5/267
 - • • {using additives, specific extraction media or specific coffee blends}
- C A23F 5/28
 - • Drying or concentrating coffee extract {([A23F 5/246](#) takes precedence)}
- C A23F 5/285
 - • • {by evaporation, e.g. drying in thin layers; or foam drying ([A23F 5/32](#) and, [A23F 5/34](#) take precedence)}
- C A23F 5/30
 - • • by freezing out the water
- C A23F 5/32
 - • • by lyophilisation

- C A23F 5/34
 - • • by spraying into a gas stream
- C A23F 5/36
 - • Further treatment of dried coffee extract; Preparations produced thereby, e.g. instant coffee ({[A23F 5/246](#) takes precedence}; } removing unwanted substances [A23F 5/18](#); flavouring [A23F 5/46](#))
- C A23F 5/38
 - • • Agglomerating, flaking or tableting {or granulating}
- C A23F 5/385
 - • • • {Tablets or other similar solid forms}
- C A23F 5/40
 - • • using organic additives, e.g. milk, sugar
- C A23F 5/405
 - • • • {comprising ground coffee or ground coffee substitute particles}
- C A23F 5/42
 - • • using inorganic additives
- C A23F 5/44
 - Coffee substitutes
- C A23F 5/46
 - Coffee flavour; Coffee oil; Flavouring of coffee or coffee extract (synthetic coffee flavours [A23L 27/28](#))
- C A23F 5/465
 - • {Flavouring with flavours other than natural coffee flavour or coffee oil}
- C A23F 5/48
 - • Isolation {or recuperation} of coffee flavour or coffee oil
- C A23F 5/483
 - • • {by solvent extraction of the beans, ground or not}
- C A23F 5/486
 - • • {by distillation from beans; ~~that are~~ ground or not *ground*, e.g. stripping; Recovering volatile gases, e.g. roaster or grinder gases}
- C A23F 5/50
 - • • from coffee extract
- C A23F 5/505
 - • • • {by distillation, e.g. stripping the extract; Recovering volatile gases, e.g. during concentration}

Project: RP12382 (A23G)

- U A23G** **COCOA; COCOA PRODUCTS, e.g. CHOCOLATE; SUBSTITUTES FOR COCOA OR COCOA PRODUCTS; CONFECTIONERY; CHEWING GUM; ICE-CREAM; PREPARATION THEREOF**

NOTES

1. In this subclass, the following term is used with the meaning indicated:
 - "ice-cream" includes any edible frozen or congealed semi-liquid or pasty substance, e.g. slush ice
2. In this subclass, subject matter which cannot be completely classified in a single one of the main groups should be classified in each relevant main group

- C A23G 1/00** **Cocoa; Cocoa products, e.g. chocolate; Substitutes therefor (*preservation thereof A23B 80/00*)**

WARNING

Groups [A23G 1/00](#) - [A23G 1/56](#) are impacted by reclassification into group [A23B 80/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- C A23G 1/0003
 - {Processes of manufacture not relating to composition or compounding ingredients}
- C A23G 1/0006
 - • {Processes specially adapted for manufacture or treatment of cocoa or cocoa products ([A23G 1/002](#) - [A23G 1/005](#) take precedence)}
- C A23G 1/0009
 - • • {Manufacture or treatment of ~~liquid, cream, paste, granule, shred or powder~~*liquids, creams, pastes, granules, shreds or powders*}
- C A23G 1/0013
 - • • • {Weighing; *or* portioning processes}

- C A23G 1/0016 . . . {Transformation of ~~liquid, paste, cream, lump, powder, granule or shred into powder, granule or shred~~ *liquids, pastes, creams, lumps, powders, granules or shreds into powders, granules or shreds*; Manufacture or treatment of ~~powder~~ *powders*}
- C A23G 1/002 . . {Processes for preparing or treating cocoa beans or nibs}
- C A23G 1/0023 . . {Cocoa butter extraction by pressing}
- C A23G 1/0026 . . {Mixing; Roller milling for preparing chocolate}
- C A23G 1/003 . . . {with introduction or production of gas, or under vacuum; Whipping; Manufacture of cellular mass}
- C A23G 1/0033 . . . {Chocolate refining, i.e. roll or mill refining}
- C A23G 1/0036 . . . {Conching}
- C A23G 1/004 {Longitudinal conching, i.e. backward and forward motion}
- C A23G 1/0043 {Circular conching, i.e. circular motion}
- C A23G 1/0046 . . {Processes for conditioning chocolate masses for moulding}
- C A23G 1/005 . . {Moulding, shaping, cutting, or dispensing chocolate ([A23G 1/0076](#) - [A23G 1/0096](#) take precedence)}
- C A23G 1/0053 . . . {Processes of shaping not covered elsewhere}
- C A23G 1/0056 {Processes in which the material is shaped at least partially by a die; Extrusion of cross-sections or plates, optionally with ~~the~~ associated cutting}
- C A23G 1/0059 {Cutting, *or* modelling of a section of plate; Embossing; Punching}
- C A23G 1/0063 {Processes in which the material is shaped at least partially in a mould, in the hollows of a surface, a drum, *or* an endless band ~~of~~, *or* by drop-by-drop casting or dispensing of the material on a surface, e.g. injection moulding, *or* transfer moulding}
- C A23G 1/0066 {Processes for laying down material in moulds or drop-by-drop on a surface, optionally with ~~the~~ associated heating, cooling, portioning, cutting cast-tail, *or* anti-drip processes}
- C A23G 1/0069 {Compression moulding of paste, optionally in *the* form of ~~ball or a ball~~, *a* rope or other preforms, ~~or of powder~~ *powders* or granules}
- C A23G 1/0073 {Moulding or shaping of cellular or expanded articles}
- C A23G 1/0076 . . {Processes for moulding hollow products, open shells or other articles having cavities, e.g. open cavities}
- C A23G 1/0079 . . {Chocolate moulds processing ([A23G 1/0076](#) takes precedence)}
- C A23G 1/0083 . . . {characterised by the material of the moulds}
- C A23G 1/0086 {Moulding in plastic or elastomeric material, or plastic or elastomer coated material}
- C A23G 1/0089 . . {Tapping or jolting tables treatment}
- C A23G 1/0093 . . {Moulds conveying, e.g. associated manipulations}
- C A23G 1/0096 . . {Removing chocolate from ~~the~~ *a* mould (discharging baked goods from tins [A21B 3/18](#))}
- C A23G 1/02 . . Preliminary treatment, e.g. fermentation of cocoa
- C A23G 1/04 . . Apparatus specially adapted for manufacture or treatment of cocoa or cocoa products (machines for roasting cocoa [A23N 12/00](#))
- C A23G 1/042 . . {Manufacture or treatment of ~~liquid, cream, paste, granule, shred or powder~~ *liquids, creams, pastes, granules, shreds or powders*}
- C A23G 1/045 . . . {Weighing, *or* portioning apparatus}

- C A23G 1/047
 - • • {Transformation of ~~liquid, paste, cream, lump, powder, granule or shred into powder, granule or shred~~ *liquids, pastes, creams, lumps, powders, granules or shreds into powders, granules or shreds*; Manufacture or treatment of ~~powder~~ *powders*}
- C A23G 1/06
 - • Apparatus for preparing or treating cocoa beans or nibs
- C A23G 1/08
 - • Cocoa butter presses
- C A23G 1/10
 - • Mixing apparatus; Roller mills for preparing chocolate
- C A23G 1/105
 - • • {with introduction or production of gas, or under vacuum; Whipping; Manufacture of cellular mass}
- C A23G 1/12
 - • ~~Chocolate-refining~~ mills, i.e. roll refiners
- C A23G 1/125
 - • • ~~{Conches}~~
- C A23G 1/14
 - • Longitudinal conches {, i.e. rollers being in a backward and forward motion}
- C A23G 1/16
 - • Circular conches {, i.e. rollers being displaced on a closed or circular rolling circuit}
- C A23G 1/18
 - • Apparatus for conditioning chocolate masses for moulding
- C A23G 1/20
 - • Apparatus for moulding, cutting, or dispensing chocolate
- C A23G 1/201
 - • • {Apparatus not covered by groups [A23G 1/21](#) - [A23G 1/28](#) ~~(not used)~~}
- C A23G 1/202
 - • • • {Apparatus in which the material is shaped at least partially by a die; Extrusion of cross-sections or plates, optionally with ~~the~~ *an* associated cutting device}
- C A23G 1/203
 - • • • • {Devices for cutting, *or* modelling of a section or plate; Embossing; Punching, e.g. stamping-tool}
- C A23G 1/205
 - • • • {Apparatus in which the material is shaped at least partially in a mould, in the hollows of a surface, a drum, *or* an endless band, or by drop-by-drop casting or dispensing of the material on a surface, e.g. injection moulding, *or* transfer moulding}
- C A23G 1/206
 - • • • • {Apparatus for laying down material in moulds or drop-by-drop on a surface, optionally with ~~the~~ associated heating, cooling, portioning, cutting cast-tail, *or* anti-drip device}
- C A23G 1/207
 - • • • • {Compression moulding of paste, optionally in *the* form of ~~ball or a ball~~, *a* rope or other preforms, ~~or of powder~~ *powders* or granules}
- C A23G 1/208
 - • • • {Moulding or shaping of cellular or expanded articles}
- C A23G 1/21
 - • • Apparatus for moulding hollow products, open shells or other articles having cavities, e.g. open cavities
- C A23G 1/22
 - • • Chocolate moulds ([A23G 1/21](#) takes precedence)
- C A23G 1/223
 - • • • {Mould materials}
- C A23G 1/226
 - • • • • {Moulds of plastic or elastomeric material, or plastic or elastomer coated moulds}
- C A23G 1/24
 - • • Tapping or jolting tables
- C A23G 1/26
 - • • Conveying devices for chocolate moulds
- C A23G 1/28
 - • • Apparatus for removing chocolate from the moulds
- C A23G 1/30
 - Cocoa products, e.g. chocolate; Substitutes therefor
- C A23G 1/305
 - • {Products for covering, coating, finishing, *or* decorating}
- C A23G 1/32
 - • characterised by the composition {containing organic or inorganic compounds}
- C A23G 1/325
 - • • {containing inorganic compounds}
- C A23G 1/34
 - • • Cocoa substitutes
- C A23G 1/36
 - • • characterised by the fats used (containing dairy products [A23G 1/46](#))

- C A23G 1/38 • • • Cocoa butter substitutes
- C A23G 1/40 • • • characterised by the carbohydrates used, e.g. polysaccharides (containing dairy products [A23G 1/46](#))
- C A23G 1/42 • • • containing microorganisms or enzymes; containing paramedical or dietetical agents, e.g. vitamins (containing dairy products [A23G 1/46](#))
- C A23G 1/423 • • • {containing microorganisms; *or* enzymes}
- C A23G 1/426 • • • {containing vitamins; *or* antibiotics}
- C A23G 1/44 • • • containing peptides or proteins (containing dairy products [A23G 1/46](#))
- C A23G 1/46 • • • containing dairy products
- C A23G 1/48 • • • containing plants or parts thereof, e.g. fruits, seeds; *or* extracts (containing gums [A23G 1/40](#) ~~{, vegetal cocoa substitutes A23G 1/34 or A23G 1/38}~~)
- C A23G 1/50 • • characterised by shape, structure or physical form, e.g. products with an inedible support (liquid products; *or* solid products in the form of powders, flakes or granules for making liquid products [A23G 1/56](#))
- C A23G 1/502 • • • {Products with edible or inedible supports}
- C A23G 1/505 • • • • {Products with ~~an inedible support~~ *inedible supports*, e.g. a stick}
- C A23G 1/507 • • • • {Products with edible ~~support~~ *supports*, e.g. a cornet}
- C A23G 1/52 • • • Aerated, foamed, cellular or porous products {, e.g. gas expanded}
- C A23G 1/54 • • • Composite products, e.g. layered, {laminated}, ~~coated,~~ *coated or* filled
- C A23G 1/545 • • • • {Hollow products, e.g. with inedible or edible filling, fixed or movable within the cavity}
- C A23G 1/56 • • *Liquid products; Solid products in the form of powders, flakes or granules for making liquid products, e.g. for making chocolate milk {, drinks and the products for their preparation, pastes for spreading, ~~milk crumb, or milk crumb~~ ([A23G 1/305](#) takes precedence)}*

Project: RP12369 (A23L)

- M A23L **FOODS, FOODSTUFFS; OR NON-ALCOHOLIC BEVERAGES, NOT COVERED BY SUBCLASSES A21D OR A23B-A23J OTHERWISE PROVIDED FOR; THEIR PREPARATION OR TREATMENT, e.g. COOKING, MODIFICATION OF NUTRITIVE QUALITIES, PHYSICAL TREATMENT THEREOF (shaping or working, not fully covered by this subclass, A23P preservation thereof A23B); PRESERVATION OF FOODS OR FOODSTUFFS, IN GENERAL**

WARNING
{In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.}
- M A23L 2/00 **Non-alcoholic beverages; Dry compositions or concentrates therefor (soup concentrates [A23L 23/10](#)); ~~Their preparation~~ *Preparation or treatment thereof* (preparation of non-alcoholic beverages by removal of alcohol [C12H 3/00](#))**
- D A23L 2/42 • Preservation of non-alcoholic beverages
 <administratively transferred to [A23B 70/00](#)>
- D A23L 2/44 • by adding preservatives
 <administratively transferred to [A23B 70/10](#)>
- D A23L 2/46 • by heating
 <administratively transferred to [A23B 70/30](#)>

- D A23L 2/48
- • • by irradiation or electric treatment
<administratively transferred to [A23B 70/35](#)>
- D A23L 2/50
- • by irradiation or electric treatment without heating
<administratively transferred to [A23B 70/50](#)>
- M A23L 2/52
- Adding ingredients (~~adding preservatives A23L 2/44~~~~adding preservatives A23B 70/10~~)
- D A23L 3/00**
- Preservation of foods or foodstuffs, in general, e.g. pasteurising, sterilising, specially adapted for foods or foodstuffs (preserving foods or foodstuffs in association with packaging B65B 55/00)**
- NOTE
- In groups A23L 3/3472 - A23L 3/3562, the last place priority rule is applied, i.e. at each hierarchical level, in the absence of an indication to the contrary, classification is made in the last appropriate place. {This Note corresponds to IPC Note (1) relating to A23L 3/3472 - A23L 3/3562}
- <administratively transferred to [A23B 2/00](#)>**
- D A23L 3/001
- {Details of apparatus, e.g. for transport, for loading or unloading manipulation, pressure feed valves}
<administratively transferred to [A23B 2/001](#)>
- D A23L 3/003
- {Control or safety devices for sterilisation or pasteurisation systems}
<administratively transferred to [A23B 2/003](#)>
- D A23L 3/005
- by heating using irradiation or electric treatment (drying or kilning A23L 3/40)
<administratively transferred to [A23B 2/05](#)>
- D A23L 3/0055
- • {with infrared rays}
<administratively transferred to [A23B 2/055](#)>
- D A23L 3/01
- • using microwaves or dielectric heating
<administratively transferred to [A23B 2/08](#)>
- D A23L 3/015
- by treatment with pressure variation, shock, acceleration or shear stress {or cavitation}
<administratively transferred to [A23B 2/10](#)>
- D A23L 3/0155
- • {using sub- or super-atmospheric pressures, or pressure variations transmitted by a liquid or gas}
<administratively transferred to [A23B 2/103](#)>
- D A23L 3/02
- by heating materials in packages which are progressively transported, continuously or stepwise, through the apparatus
<administratively transferred to [A23B 2/20](#)>
- D A23L 3/022
- • {with packages moving on the spot while being transported}
<administratively transferred to [A23B 2/203](#)>
- D A23L 3/025
- • {with packages on a drum with horizontal axis (A23L 3/022 takes precedence)}
<administratively transferred to [A23B 2/205](#)>
- D A23L 3/027
- • • {transported in a hydrostatic chamber}
<administratively transferred to [A23B 2/2055](#)>
- D A23L 3/04
- • with packages on endless chain or band conveyors {(A23L 3/022 takes precedence)}
<administratively transferred to [A23B 2/22](#)>

- D A23L 3/045
 - • • {transported in a hydrostatic chamber}
 - <administratively transferred to [A23B 2/225](#)>
- D A23L 3/06
 - • with packages transported along a helical path {(A23L 3/022 takes precedence)}
 - <administratively transferred to [A23B 2/25](#)>
- D A23L 3/065
 - • • {transported in a hydrostatic chamber}
 - <administratively transferred to [A23B 2/255](#)>
- D A23L 3/08
 - • with packages on a revolving platform {(A23L 3/022 takes precedence)}
 - <administratively transferred to [A23B 2/28](#)>
- D A23L 3/085
 - • • {transported in a hydrostatic chamber}
 - <administratively transferred to [A23B 2/285](#)>
- D A23L 3/10
 - by heating materials in packages which are not progressively transported through the apparatus
 - <administratively transferred to [A23B 2/30](#)>
- D A23L 3/12
 - • with packages in intercommunicating chambers through which the heating medium is circulated
 - <administratively transferred to [A23B 2/33](#)>
- D A23L 3/14
 - • with packages moving on the spot
 - <administratively transferred to [A23B 2/37](#)>
- D A23L 3/16
 - by heating loose unpacked materials
 - <administratively transferred to [A23B 2/40](#)>
- D A23L 3/165
 - • {in solid state}
 - <administratively transferred to [A23B 2/405](#)>
- D A23L 3/18
 - • while they are progressively transported through the apparatus
 - <administratively transferred to [A23B 2/42](#)>
- D A23L 3/185
 - • • {in solid state}
 - <administratively transferred to [A23B 2/425](#)>
- D A23L 3/20
 - • • with transport along plates
 - <administratively transferred to [A23B 2/44](#)>
- D A23L 3/205
 - • • • {in solid state}
 - <administratively transferred to [A23B 2/445](#)>
- D A23L 3/22
 - • • with transport through tubes
 - <administratively transferred to [A23B 2/46](#)>
- D A23L 3/225
 - • • • {in solid state}
 - <administratively transferred to [A23B 2/465](#)>
- D A23L 3/24
 - • with the materials in spray form
 - <administratively transferred to [A23B 2/48](#)>
- D A23L 3/245
 - • • {in solid state}
 - <administratively transferred to [A23B 2/485](#)>
- D A23L 3/26
 - by irradiation without heating
 - <administratively transferred to [A23B 2/50](#)>
- D A23L 3/263
 - • {with corpuscular or ionising radiation, i.e. X, alpha, beta or omega radiation (laser plasma radiation A23L 3/26)}
 - <administratively transferred to [A23B 2/503](#)>

- D A23L 3/266
- {with corona irradiation}
 - <administratively transferred to [A23B 2/505](#)>
- D A23L 3/28
- with ultraviolet light
 - <administratively transferred to [A23B 2/53](#)>
- D A23L 3/30
- by treatment with ultrasonic waves
 - <administratively transferred to [A23B 2/57](#)>
- D A23L 3/32
- by treatment with electric currents without heating effect
 - <administratively transferred to [A23B 2/60](#)>
- D A23L 3/325
- {by electrolysis}
 - <administratively transferred to [A23B 2/605](#)>
- D A23L 3/34
- by treatment with chemicals
 - <administratively transferred to [A23B 2/70](#)>
- D A23L 3/3409
- in the form of gases, e.g. fumigation; Compositions or apparatus therefor
 - <administratively transferred to [A23B 2/704](#)>
- D A23L 3/34095
- {Details of apparatus for generating or regenerating gases}
 - <administratively transferred to [A23B 2/7045](#)>
- D A23L 3/3418
- in a controlled atmosphere, e.g. partial vacuum, comprising only CO_2 , N_2 , O_2 or H_2O
 - <administratively transferred to [A23B 2/708](#)>
- D A23L 3/3427
- in which an absorbent is placed or used (packages for foodstuffs with provision for absorbing fluids B65D 81/26)
 - <administratively transferred to [A23B 2/712](#)>
- D A23L 3/3436
- Oxygen absorbent
 - <administratively transferred to [A23B 2/717](#)>
- D A23L 3/3445
- in a controlled atmosphere comprising other gases in addition to CO_2 , N_2 , O_2 or H_2O
 - <administratively transferred to [A23B 2/721](#)>
- D A23L 3/3454
- in the form of liquids or solids
 - <administratively transferred to [A23B 2/725](#)>
- D A23L 3/3463
- Organic compounds; Microorganisms; Enzymes
- NOTE**
- In groups A23L 3/3472 – A23L 3/3562, the last place priority rule is applied, i.e. at each hierarchical level, in the absence of an indication to the contrary, classification is made in the last appropriate place. {This Note corresponds to IPC Note relating to A23L 3/3472 – A23L 3/3562.}
- <administratively transferred to [A23B 2/729](#)>
- D A23L 3/34635
- {Antibiotics}
 - <administratively transferred to [A23B 2/7295](#)>
- D A23L 3/3472
- Compounds of undetermined constitution obtained from animals or plants
 - <administratively transferred to [A23B 2/733](#)>
- D A23L 3/3481
- Organic compounds containing oxygen
 - <administratively transferred to [A23B 2/742](#)>
- D A23L 3/349
- with singly-bound oxygen
 - <administratively transferred to [A23B 2/746](#)>

- D A23L 3/3499 with doubly-bound oxygen
<administratively transferred to [A23B 2/75](#)>
- D A23L 3/3508 containing carboxyl groups
<administratively transferred to [A23B 2/754](#)>
- D A23L 3/3517 Carboxylic acid esters
<administratively transferred to [A23B 2/758](#)>
- D A23L 3/3526 Organic compounds containing nitrogen
<administratively transferred to [A23B 2/762](#)>
- D A23L 3/3535 Organic compounds containing sulfur
<administratively transferred to [A23B 2/767](#)>
- D A23L 3/3544 Organic compounds containing hetero-rings
<administratively transferred to [A23B 2/771](#)>
- D A23L 3/3553 Organic compounds containing phosphorus
<administratively transferred to [A23B 2/775](#)>
- D A23L 3/3562 Sugars; Derivatives thereof
<administratively transferred to [A23B 2/779](#)>
- D A23L 3/3571 Microorganisms; Enzymes
<administratively transferred to [A23B 2/783](#)>
- D A23L 3/358 Inorganic compounds
<administratively transferred to [A23B 2/788](#)>
- D A23L 3/3589 Apparatus for preserving using liquids
<administratively transferred to [A23B 2/792](#)>
- D A23L 3/3598 Apparatus for preserving using solids
<administratively transferred to [A23B 2/796](#)>
- D A23L 3/36 Freezing; Subsequent thawing; Cooling
<administratively transferred to [A23B 2/80](#)>
- D A23L 3/361 {the materials being transported through or in the apparatus, with or without shaping, e.g. in form of powder, granules, or flakes (moving on the spot only A23L 3/363)}
<administratively transferred to [A23B 2/803](#)>
- D A23L 3/362 {with packages or with shaping in form of blocks or portions}
<administratively transferred to [A23B 2/8033](#)>
- D A23L 3/363 {the materials not being transported through or in the apparatus with or without shaping, e.g. in form of powder, granules, or flakes}
<administratively transferred to [A23B 2/805](#)>
- D A23L 3/364 {with packages or with shaping in form of blocks or portions}
<administratively transferred to [A23B 2/8055](#)>
- D A23L 3/365 Thawing subsequent to freezing
<administratively transferred to [A23B 2/82](#)>
- D A23L 3/37 with addition of {or treatment with} chemicals
<administratively transferred to [A23B 2/85](#)>
- D A23L 3/375 with direct contact between the food and the chemical, e.g. liquid nitrogen, at cryogenic temperature
<administratively transferred to [A23B 2/88](#)>

- D A23L 3/40
- by drying or kilning; Subsequent reconstitution
<administratively transferred to [A23B 2/90](#)>
- D A23L 3/405
- {Fractionated crystallisation}
<administratively transferred to [A23B 2/905](#)>
- D A23L 3/42
- • with addition of chemicals before or during drying
<administratively transferred to [A23B 2/91](#)>
- D A23L 3/44
- • Freeze-drying
<administratively transferred to [A23B 2/92](#)>
- D A23L 3/46
- • Spray-drying
<administratively transferred to [A23B 2/93](#)>
- D A23L 3/48
- • Thin layer-, drum- or roller-drying
<administratively transferred to [A23B 2/94](#)>
- D A23L 3/485
- • • {Drum- or roller-drying}
<administratively transferred to [A23B 2/945](#)>
- D A23L 3/50
- • Fluidised-bed drying
<administratively transferred to [A23B 2/95](#)>
- D A23L 3/52
- • Foam-drying
<administratively transferred to [A23B 2/96](#)>
- D A23L 3/54
- • using irradiation or electrical treatment, e.g. ultrasonic waves
<administratively transferred to [A23B 2/97](#)>
- C A23L 11/00**
- Pulses, i.e. fruits of leguminous plants, for production of food; Products from legumes; Preparation or treatment thereof (*preservation thereof* [A23B 75/00](#))**
- WARNING**
- Groups [A23L 11/00](#) – [A23L 11/70](#) are impacted by reclassification into group [A23B 75/00](#).
All groups listed should be considered in order to perform a complete search.*
- C A23L 11/01
- {Pulses or legumes in *the* form of whole pieces or fragments thereof, without mashing or comminuting ([A23L 11/10](#) – [A23L 11/70](#) take precedence)}
- C A23L 11/03
- • {Soya beans, e.g. full-fat soya bean flakes or grits}
- C A23L 11/05
- {Mashed or comminuted pulses or legumes; Products made therefrom ([A23L 11/30](#) takes precedence; tofu or soya cheese [A23L 11/45](#); soy drinks [A23L 11/65](#))}
- C A23L 11/07
- • {Soya beans, e.g. oil-extracted soya bean flakes ([A23L 11/30](#) takes precedence)}
- C A23L 11/10
- Rapid cooking pulses
- C A23L 11/30
- Removing undesirable substances, e.g. bitter substances
- C A23L 11/31
- • {by heating without chemical treatment, e.g. steam treatment, cooking}
- C A23L 11/32
- • {by extraction with solvents}
- C A23L 11/33
- • {using enzymes; Enzymatic transformation of pulses or legumes}
- C A23L 11/34
- • {using chemical treatment, adsorption or absorption}
- C A23L 11/35
- • • {combined with heat treatment}
- C A23L 11/36
- • {using irradiation, e.g. with wave energy; *Using using* electrical means or magnetic fields}
- C A23L 11/37
- • {using microorganisms}

- C A23L 11/40 • Pulse curds
- C A23L 11/45 • • Soy bean curds, e.g. tofu
- C A23L 11/50 • Fermented pulses or legumes; Fermentation of pulses or legumes based on the addition of microorganisms (removing undesirable substances [A23L 11/30](#); soy sauce [A23L 27/50](#))
- C A23L 11/60 • Drinks from legumes, e.g. lupine drinks
- C A23L 11/65 • • Soy drinks
- C A23L 11/70 • Germinated pulse products, e.g. from soy bean sprouts

Project: RP11908-F (A23L)

- U A23L 13/00 Meat products; Meat meal; Preparation or treatment thereof**
- M A23L 13/70 • Tenderised or flavoured meat pieces; Macerating or marinating solutions specially adapted therefor
- WARNING
Group A23L 13/70 is impacted by reclassification into groups A23L 13/75 and A23L 13/77.
Groups A23L 13/70, A23L 13/75 and A23L 13/77 should be considered in order to perform a complete search.
- M A23L 13/72 • • using additives, e.g. by injection of solutions
- WARNING
Group A23L 13/72 is impacted by reclassification into groups A23L 13/75 and A23L 13/77.
Groups A23L 13/72, A23L 13/75 and A23L 13/77 should be considered in order to perform a complete search.
- M A23L 13/74 • • using microorganisms or enzymes
- WARNING
Group A23L 13/74 is impacted by reclassification into groups A23L 13/75 and A23L 13/77.
Groups A23L 13/74, A23L 13/75 and A23L 13/77 should be considered in order to perform a complete search.
- M A23L 13/75 • • using macerating or marinating solutions, e.g. marinades containing spices, acids, condiments or flavouring agents
- WARNING
Group A23L 13/75 is incomplete pending reclassification of documents from groups A23L 13/70, A23L 13/72, A23L 13/74 and A23L 13/76.
All groups listed in this Warning should be considered in order to perform a complete search.
- M A23L 13/76 • • by treatment in a gaseous atmosphere, e.g. ageing or ripening; by electrical treatment, irradiation or wave treatment
- WARNING
Group A23L 13/76 is impacted by reclassification into groups A23L 13/75 and A23L 13/77.
Groups A23L 13/76, A23L 13/75 and A23L 13/77 should be considered in order to perform a complete search.
- M A23L 13/77 • • by mechanical treatment, e.g. kneading, rubbing or tumbling
- WARNING
Group A23L 13/77 is incomplete pending reclassification of documents from groups A23L 13/70, A23L 13/72, A23L 13/74 and A23L 13/76.

All groups listed in this Warning should be considered in order to perform a complete search.

Project: RP12369 (A23L)

- M A23L 29/00 Foods or foodstuffs containing additives (containing additives for modifying the nutritive qualities [A23L 33/10](#); containing substantially indigestive additives, e.g. dietary fibres, [A23L 33/21](#); *containing additives for preservation [A23B](#)*); Preparation or treatment thereof
- M A23L 35/00 ~~Food~~*Foods* or foodstuffs not provided for in groups [A23L 5/00](#) -- [A23L 33/00](#); Preparation or treatment thereof (*preservation thereof [A23B](#)*)

Project: RP10469 (A45C)

- C A45C 11/00 Receptacles for purposes not provided for in groups [A45C 1/00-A45C 9/00](#) (specially adapted for toiletry or cosmetic equipment [A45D 29/20](#), [A45D 44/18](#); travelling sewing kits [A45F 3/48](#))

WARNING

Group [A45C 11/00](#) is impacted by reclassification into groups [A45C 11/001](#), [A45C 11/002](#), [A45C 11/003](#), [G06F 1/1629](#) and [H04M 1/0203](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- D A45C 2011/001 • {for portable audio devices, e.g. headphones or MP3-players}
<administratively transferred to [A45C 11/001](#) INV>
- Q A45C 11/001 • {for storing portable audio devices, e.g. headphones or digital music players}
WARNING
Group [A45C 11/001](#) is incomplete pending reclassification of documents from group [A45C 11/00](#).
Group [A45C 11/001](#) is also impacted by reclassification into groups [G06F 1/1629](#) and [H04M 1/0203](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- D A45C 2011/002 • {for portable handheld communication devices, e.g. mobile phone, pager, beeper, PDA, smart phone}
<administratively transferred to [A45C 11/002](#) INV>
- Q A45C 11/002 • {for storing portable handheld communication devices, e.g. pagers or smart phones}
WARNING
Group [A45C 11/002](#) is incomplete pending reclassification of documents from groups [A45C 11/00](#) and [H04B 1/3888](#).
Group [A45C 11/002](#) is also impacted by reclassification into group [H04M 1/0203](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- D A45C 2011/003 • {for portable computing devices, e.g. laptop, tablet, netbook, game boy, navigation system, calculator}
<administratively transferred to [A45C 11/003](#) INV>
- Q A45C 11/003 • {for storing portable computing devices, e.g. laptops, tablets or calculators}
WARNING
Group [A45C 11/003](#) is incomplete pending reclassification of documents from groups [A45C 11/00](#), [G06F 1/1628](#), [G06F 2200/1633](#) and [H04B 1/3888](#).

Group [A45C 11/003](#) is also impacted by reclassification into groups [G06F 1/1629](#) and [G06F 1/1656](#).

All groups listed in this Warning should be considered in order to perform a complete search.

Project: RP10469 (A45F)

- U A45F 3/00 Travelling or camp articles (travelling rugs [A47G 9/06](#)); Sacks or packs carried on the body (convertible into other articles [A45F 4/00](#))**
- U A45F 3/16 • Water-bottles; Mess-tins; Cups
 - U A45F 2003/163 • {Water bottles with purification filter}
 - D A45F 2003/166 • {Hydration systems attached to the body by straps, e.g. incorporated in a backpack}
 - <administratively transferred to [A45F 3/166](#) INV>
 - Q A45F 3/166 • {Hydration systems incorporated in a backpack}
- WARNING**
Group [A45F 3/166](#) is impacted by reclassification into group [A45F 5/1588](#). Groups [A45F 3/166](#) and [A45F 5/1588](#) should be considered in order to perform a complete search.
- U A45F 5/00 Holders or carriers for hand articles; Holders or carriers for use while travelling or camping**
- M A45F 5/14 • Holders for spades, hatchets, ~~or~~ *or the* like implements
 - N A45F 5/1508 • {Holders or carriers for portable audio devices, e.g. headphones or digital music players}
 - N A45F 5/1516 • {Holders or carriers for portable handheld communication devices, e.g. pagers or smart phones}
- WARNING**
Group [A45F 5/1516](#) is incomplete pending reclassification of documents from groups [H04B 2001/3855](#) and [H04B 2001/3861](#). Groups [H04B 2001/3855](#), [H04B 2001/3861](#) and [A45F 5/1516](#) should be considered in order to perform a complete search.
- N A45F 5/1525 • {Holders or carriers for portable computing devices, e.g. laptops, tablets or calculators}
 - N A45F 5/1533 • {Holders or carriers for cameras}
 - N A45F 5/1541 • {Holders or carriers for eyeglasses or spectacles}
 - N A45F 5/155 • {Holders or carriers for thin, flat, rectangular articles, e.g. ID badges or cards}
 - N A45F 5/1558 • {Holders or carriers for keys}
 - N A45F 5/1566 • {Holders or carriers for tubular, rod-shaped articles, e.g. batons}
 - N A45F 5/1575 • {Holders or carriers for portable tools}
 - N A45F 5/1583 • {Holders or carriers for beverage vessels, e.g. bottles}
 - N A45F 5/1588 • {for hydration systems, e.g. bladder with drinking tube}
- WARNING**
Group [A45F 5/1588](#) is incomplete pending reclassification of documents from group [A45F 3/166](#). Groups [A45F 3/166](#) and [A45F 5/1588](#) should be considered in order to perform a complete search.
- D A45F 2200/00 Details not otherwise provided for in A45F**
- D A45F 2200/05 • Holder or carrier for specific articles

- D A45F 2200/0508
 - • Portable audio devices, e.g. walkman, discman, radio, MP3 player, headphones
 - <administratively transferred to [A45F 5/1508](#) INV>
- D A45F 2200/0516
 - • Portable handheld communication devices, e.g. mobile phone, pager, beeper, PDA, smart phone
 - <administratively transferred to [A45F 5/1516](#) INV>
- D A45F 2200/0525
 - • Personal portable computing devices, e.g. laptop, tablet, netbook, game boy, navigation system, calculator
 - <administratively transferred to [A45F 5/1525](#) INV>
- D A45F 2200/0533
 - • Cameras, e.g. reflex, digital, video camera
 - <administratively transferred to [A45F 5/1533](#) INV>
- D A45F 2200/0541
 - • Eyeglasses or spectacles
 - <administratively transferred to [A45F 5/1541](#) INV>
- D A45F 2200/055
 - • Thin, flat, rectangular articles, e.g. ID badges or cards
 - <administratively transferred to [A45F 5/155](#) INV>
- D A45F 2200/0558
 - • Keys
 - <administratively transferred to [A45F 5/1558](#) INV>
- D A45F 2200/0566
 - • Tubular, rod-shaped articles, e.g. batons
 - <administratively transferred to [A45F 5/1566](#) INV>
- D A45F 2200/0575
 - • Portable tools
 - <administratively transferred to [A45F 5/1575](#) INV>
- D A45F 2200/0583
 - • Beverage vessels, e.g. bottles
 - <administratively transferred to [A45F 5/1583](#) INV>
- D A45F 2200/0591
 - • Defense articles, e.g. small arms, handguns, pistols, or the like

Project: MP12463 (A47C)

M A47C **CHAIRS** (~~seats specially adapted for vehicles B60N 2/00~~); **SOFAS**; **BEDS** (~~upholstery in general B68G~~)

WARNINGS

1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:

[A47C 23/053](#) covered by [A47C 23/05](#), [A47C 23/0507](#), [A47C 23/0515](#)

2. {In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.}

- M A47C 1/00** **Chairs adapted for special purposes** (~~features relating to vertical adjustability A47C 3/20~~; ~~convertible chairs A47C 13/00~~; chairs or personal conveyances specially adapted for patients or disabled persons, e.g. **wheelchairs**, [A61G 5/00](#); operating chairs, **or** dental chairs [A61G 15/00](#))
- M A47C 1/02
 - Reclining or easy chairs (~~supports for parts of body A47C 7/36, A47C 7/50, A47C 7/54~~)
- U A47C 1/04
 - Hairdressers' or similar chairs {, e.g. beauty salon chairs}
- M A47C 1/08
 - • with auxiliary seats (~~insertable seats for children A47C 1/11~~)
- M A47C 1/12
 - Theatre, auditorium, or similar chairs (~~seats {detachably mounted on} stadium benches A47C 1/16~~ **detachable seats for mounting on stadium benches** [A47C 1/16](#))

M	A47C 1/16	<ul style="list-style-type: none"> • {Chairs or} seats Seats detachably mounted on stadium benches (detachably mounted children's chairs A47D 1/10)
U	A47C 3/00	Chairs characterised by structural features; Chairs or stools with rotatable or vertically-adjustable seats (A47C 1/00, A47C 4/00 take precedence)
M	A47C 3/02	<ul style="list-style-type: none"> • Rocking chairs (specially for children A47D 13/10)
M	A47C 3/16	<ul style="list-style-type: none"> • of legless type, e.g. with seat directly resting on the floor (A47C 3/14 takes precedence; detachably mounted on stadium benches A47C 1/16; children's chairs mounted on back-rest of chair A47D 1/10 {, legless beach chairs A47C 1/146; inflatable chairs A47C 4/54}); Hassocks; Pouffes
M	A47C 3/20	<ul style="list-style-type: none"> • Chairs or stools with vertically-adjustable seats (tables with variable height A47B 9/00)
M	A47C 4/00	Foldable, collapsible or dismountable chairs (of tubular metal type A47C 5/10; children's foldable chairs A47D 1/02)
U	A47C 4/04	<ul style="list-style-type: none"> • Folding chairs with inflexible seats
M	A47C 4/06	<ul style="list-style-type: none"> • • Attachment of upholstery or fabric to frames (in general A47C 31/02)
U	A47C 4/28	<ul style="list-style-type: none"> • Folding chairs with flexible coverings for the seat or back elements
M	A47C 4/30	<ul style="list-style-type: none"> • • Attachment of upholstery or fabric to frames (in general A47C 31/02)
M	A47C 4/52	<ul style="list-style-type: none"> • Trunk chairs, i.e. chairs collapsible to {self-contained carrying case, e.g.} trunk shape (trunk tables A47B 3/10)
M	A47C 4/54	<ul style="list-style-type: none"> • Inflatable chairs (connection of valves to inflatable elastic bodies B60C 29/00)
U	A47C 5/00	Chairs of special materials
M	A47C 5/04	<ul style="list-style-type: none"> • Metal chairs, e.g. tubular (of rocking type A47C 3/023; of non-tubular folding, collapsible, or dismountable type A47C 4/00 rocking chairs having elastic frames made of tubular material A47C 3/023)
M	A47C 7/00	Parts, details, or accessories of chairs or stools (attaching to floor A47B 91/08)
M	A47C 7/02	<ul style="list-style-type: none"> • Seat parts (adaptation of seats to mounting in tubular chairs A47C 5/06; such parts not restricted to chairs A47C 23/00; removable upholstered units or cushions A47C 27/00)
M	A47C 7/18	<ul style="list-style-type: none"> • • having foamed material included in cushioning part (foamed material mattresses A47C 27/14)
M	A47C 7/36	<ul style="list-style-type: none"> • Support Supports for the head or the back
M	A47C 7/38	<ul style="list-style-type: none"> • • for the head {, e.g. detachable (adjustable coupled to reclining or easy chairs A47C 1/036)}
M	A47C 7/50	<ul style="list-style-type: none"> • Supports for the feet or the legs {coupled to fixed parts of the chair} (coupled to other adjustable parts {of the reclining or easy chair} A47C 1/034, A47C 1/037; {stand-alone rests or supports for the feet or the legs, e.g.} footstools A47C 16/02 reclining or easy chairs having coupled adjustable supporting parts including a leg-rest or foot-rest A47C 1/034; reclining or easy chairs having coupled adjustable supporting parts including a head-rest in combination with a leg-rest or foot-rest A47C 1/037)
U	A47C 7/56	<ul style="list-style-type: none"> • Parts or details of tipping-up chairs, e.g. of theatre chairs
M	A47C 7/58	<ul style="list-style-type: none"> • • Hinges, e.g. for mounting chairs in a curved row (hinges for wings in general E05D)
M	A47C 9/00	Stools for specified purposes (with rotatable seats A47C 3/18; with vertically adjustable seats A47C 3/20 {; other seating furniture for specified purposes A47C 15/004}; footstools A47C 16/02; prayer stools A47C 16/04; platforms or seat-boxes specially adapted for angling A01K 97/22)

M	A47C 9/02	• Office stools {not provided for in main groups A47C 1/00, A47C 3/00 or A47C 7/00} ; Workshop stools
M	A47C 9/10	• Camp, travelling, or sports stools {walking sticks or umbrellas convertible into seats, hunting sticks A45B 5/00}
M	A47C 11/00	Benches not otherwise provided for {school forms A47B 39/00}
M	A47C 15/00	Other seating furniture {school forms A47B 39/00}
M	A47C 16/00	{Stand-alone} rests or supports for feet, legs, arms, back or head {associated with chairs A47C 7/00; associated with beds or sofas A47C 20/00}
M	A47C 16/04	• Prayer- stools; Kneeling stools; Kneeling supports {hassocks or pouffes A47C 3/16}
M	A47C 17/00	Sofas; Couches; Beds {bedsteads A47C 19/00; spring mattresses A47C 23/00; divan bases A47C 23/00; stuffed mattresses A47C 27/00; beds with special provisions for nursing A61G 7/00}
U	A47C 17/52	• Cabinet beds; Table beds, or like beds; Wardrobe beds
M	A47C 17/62	• • Table beds; Billiard table beds, or like beds {(convertible tables A47B 85/06)}
M	A47C 17/64	• Travelling or camp beds {adjusting members for rests A47C 20/00; travelling or camp sacks or packs convertible into beds or mattresses A45F 4/06; stretchers A61G 1/00}
M	A47C 17/86	• Parts or details <i>specially adapted</i> for beds, sofas or couches only not fully covered in a by any single one of the sub-groups A47C 17/02 ; A47C 17/04 ; A47C 17/38 ; A47C 17/52 ; A47C 17/64 ; or A47C 17/84 ; {Drawers in or under beds}
M	A47C 19/00	Bedsteads {spring mattresses with rigid frame or forming part of the bedstead A47C 23/00; bed jointing members or fittings for bedsteads F16B}
M	A47C 19/04	• Extensible bedsteads, e.g. with adjustment of length, width, height {for children's beds A47D 7/00}
M	A47C 19/12	• Folding bedsteads {travelling or camp beds A47C 17/64}
M	A47C 19/20	• Multi-stage bedsteads; {e.g. bunk beds} {multiple wall beds A47C 17/50; suspended beds A47C 17/84} ; Bedsteads stackable to multi-stage bedsteads
M	A47C 19/22	• Combinations of bedsteads with other furniture or with accessories, e.g. with bedside cabinets {bed tables A47B 23/00 -{; bedside cabinets A47B 79/00}
M	A47C 20/00	Head-, foot-, or like rests for beds, sofas or the like {book rests or bed tables A47B 23/00; bed-rests specially adapted for nursing A61G 7/065}
M	A47C 20/02	• of detachable {or loose} type (A47C 20/04 , A47C 20/08 take precedence {; for chairs A47C 7/00; pillows A47G 9/10})
M	A47C 21/00	Attachments for beds, e.g. sheet holders; or bed-cover holders {bed tables supported on the bedstead A47B 23/02; for children's beds {A47D 7/00}; A47D 15/00} ; Ventilating, cooling or heating means in connection with bedsteads or mattresses
M	A47C 21/08	• Devices for prevention against falling-out, e.g. detachable sidewalls-side walls {for children's beds A47D 7/00}
U	A47C 23/00	Spring mattresses with rigid frame or forming part of the bedstead, e.g. box springs; Divan bases; Slatted bed bases
M	A47C 23/30	• using combinations of springs covered by more than one of the groups A47C 23/04; A47C 23/02 A47C 23/06 and A47C 23/12 ; Frames therefor
U	A47C 27/00	Spring, stuffed or fluid mattresses {or cushions} specially adapted for chairs, beds or sofas

- U A47C 27/04 • with spring inlays ([A47C 27/20](#) takes precedence)
- M A47C 27/045 • • Attachment of spring inlays to coverings (~~upholstery attaching means A47C 31/02~~); Use of stiffening sheets, lattices or grids ~~{in, on, or}~~ under spring inlays
- M A47C 27/08 • Fluid mattresses ~~{or cushions}~~ ~~{connecting valves to inflatable elastic bodies B60C 29/00}~~
- M A47C 29/00 **Nets for protection against insects in connection with chairs or beds**
(~~insect nets for animals A01K 13/00~~; ~~insect nets as travelling equipment A45F 3/52~~); Bed canopies
- U A47C 31/00 **Details or accessories for chairs, beds, or the like, not provided for in other groups of this subclass, e.g. upholstery fasteners, mattress protectors, stretching devices for mattress nets**
- M A47C 31/02 • Upholstery attaching means ~~{quilting, quilting means, fastening, fixing or finishing upholstery B68G 7/00}~~
- M A47C 31/12 • Means, e.g. measuring means, for adapting chairs, beds or mattresses to the shape or weight of persons ~~(body measuring means for clothing manufacture A41H 1/00)~~

Project: Unknown (A47K)

- U A47K 10/00 **Body-drying implements; Toilet paper; Holders therefor**
- M A47K 10/24 • Towel dispensers {, e.g. for piled-up or folded textile towels}; Toilet paper dispensers (sheet or web dispensers in general [B65H](#) {; paper dispensers for publicity purposes [G09F 21/22](#), [G09F 23/10](#)}); Dispensers for piled-up or folded textile towels provided or not with devices for taking-up soiled towels as far as not mechanically driven
- M A47K 10/32 • • Dispensers for paper towels or toilet paper

Project: RP12362 (A61B)

- M A61B **DIAGNOSIS; SURGERY; IDENTIFICATION (~~analysing biological material G01N, e.g. G01N 33/48~~; ~~obtaining records using waves other than optical waves, in general G03B 42/00~~ *usefulness limited to only animals A61D*)**

NOTE

This subclass ~~covers~~ instruments, implements and processes for diagnostic, surgical and person-identification purposes, including obstetrics, instruments for cutting corns, vaccination instruments, finger-printing, psycho-physical tests.

WARNINGS

1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:

A61B 17/03	covered by	A61B 17/00
A61B 17/125	covered by	A61B 17/122
A61B 17/138	covered by	A61B 17/12
A61B 17/76	covered by	A61B 17/744
A61B 17/78	covered by	A61B 17/744
A61B 17/94	covered by	A61B 17/29

2. {In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.}

M	A61B 1/00 - A61B 16/00	Diagnosis; Psycho-physical tests
M	A61B 1/00	Instruments for performing medical examinations of the interior of cavities or tubes of the body by visual or photographic inspection, e.g. endoscopes (examination of body cavities or body tracts using ultrasonic, sonic or infrasonic waves A61B 8/12 ; endoscopic instruments for taking cell samples or for biopsy A61B 10/04 ; for surgical purposes A61B 17/00; endoscopic surgical {cutting} instruments {A61B 17/32}; surgical instruments using a laser beam being directed along or through a flexible conduit A61B 18/22); Illuminating arrangements therefor (for the eyes A61B 3/00)
M	A61B 1/24	• for the mouth, i.e. stomatoscopes, e.g. with tongue depressors (tongue depressors per se A61B 13/00) ; Instruments for opening or keeping open the mouth (combined with saliva removers A61C 17/00; mouth openers for animals A61D 15/00)
M	A61B 1/32	• Devices for opening or enlarging the visual field, e.g. of a tube of the body (dilators A61M 29/00)
M	A61B 3/00	Apparatus for testing the eyes; Instruments for examining the eyes (eye inspection using ultrasonic, sonic or infrasonic waves A61B 8/10; devices for treatment of the eyes A61F 9/00; exercisers for the eyes A61H 5/00; optical systems in general G02B)
M	A61B 3/0008	• {provided with illuminating means (A61B 3/117 takes , A61B 3/14 <i>take</i> precedence; goniolenses used for laser treatment A61F 9/009; illuminating means for optical instruments G02B 27/00)}
M	A61B 3/0075	• {provided with adjusting devices, e.g. operated by control lever (manipulators B25J) }
U	A61B 3/02	• Subjective types, i.e. testing apparatus requiring the active assistance of the patient
U	A61B 3/028	• • for testing visual acuity; for determination of refraction, e.g. phoropters
M	A61B 3/04	• • • Trial frames; Sets of lenses for use therewith (lenses per se G02C 7/02)
U	A61B 3/10	• Objective types, i.e. instruments for examining the eyes independent of the patients' perceptions or reactions
U	A61B 3/12	• • for looking at the eye fundus, e.g. ophthalmoscopes (A61B 3/13 takes precedence)
M	A61B 3/125	• • • with contact lenses (contact lenses per se G02C 7/04)
M	A61B 3/14	• • Arrangements specially adapted for eye photography ((apparatus or arrangements for taking photographs per se G03B))
U	A61B 5/00	Measuring for diagnostic purposes (radiation diagnosis A61B 6/00; diagnosis by ultrasonic, sonic or infrasonic waves A61B 8/00); Identification of persons NOTE In this group, the following term is used with the meaning indicated: "measuring" <u>covers</u> also detecting or recording.
M	A61B 5/0002	• {Remote monitoring of patients using telemetry, e.g. transmission of vital signals via a communication network (A61B 5/07 <i>takes precedence</i> ; transmission systems for measured values G08C; transmission H04B; transmission of digital information H04L; wireless communication networks H04W <i>endoradiosondes A61B 5/07</i>)}
U	A61B 5/0015	• • {characterised by features of the telemetry system}
M	A61B 5/0017	• • • {transmitting optical signals (transmission by light H04B 10/00) }

- | | | |
|---|-------------|---|
| M | A61B 5/0033 | <ul style="list-style-type: none"> • {Features or image-related aspects of imaging apparatus classified in A61B 5/00, e.g. for MRI, optical tomography or impedance tomography apparatus; arrangements <i>Arrangements</i> of imaging apparatus in a room (image data processing or generation G06T)} |
| M | A61B 5/0059 | <ul style="list-style-type: none"> • {using light, e.g. diagnosis by transillumination, diascopy, fluorescence (A61B 5/0093, A61B 5/1455, A61B 5/02416 and A61B 5/0261 take precedence <i>photoacoustic A61B 5/0093; optical measurement of heart rate A61B 5/02416; optical measurement of blood flow A61B 5/0261; optical measurement of analytes A61B 5/1455</i>)} |
| U | A61B 5/0093 | <ul style="list-style-type: none"> • {Detecting, measuring or recording by applying one single type of energy and measuring its conversion into another type of energy} |
| M | A61B 5/0097 | <ul style="list-style-type: none"> • • {by applying acoustic waves and detecting light, i.e. acoustooptic <i>acousto-optic</i> measurements} |
| M | A61B 5/02 | <ul style="list-style-type: none"> • Detecting, measuring or recording <i>for evaluating the cardiovascular system, e.g. pulse, heart rate, blood pressure or blood flow; Combined pulse/heart-rate/blood pressure determination; Evaluating a cardiovascular condition not otherwise provided for, e.g. using combinations of techniques provided for in this group with electrocardiography or electroauscultation; Heart catheters for measuring blood pressure</i> |
| M | A61B 5/021 | <ul style="list-style-type: none"> • • Measuring pressure in heart or blood vessels (A61B 5/0205 takes precedence) |
| M | A61B 5/0215 | <ul style="list-style-type: none"> • • • by means inserted into the body (catheters A61M 25/00) |
| M | A61B 5/024 | <ul style="list-style-type: none"> • • Detecting, measuring or recording <i>Measuring</i> pulse rate or heart rate (A61B 5/0205, A61B 5/021 take precedence) |
| U | A61B 5/0245 | <ul style="list-style-type: none"> • • • by using sensing means generating electric signals, {i.e. ECG signals} |
| M | A61B 5/025 | <ul style="list-style-type: none"> • • • within occluders, e.g. responsive to Korotkoff sounds (electric stethoscopes A61B 7/04) |
| U | A61B 5/026 | <ul style="list-style-type: none"> • • Measuring blood flow {(A61B 3/1233, A61B 3/1241 take precedence)} |
| M | A61B 5/029 | <ul style="list-style-type: none"> • • • Measuring or recording blood output from the heart, e.g. minute volume {(A61B 8/065 takes precedence)} |
| M | A61B 5/03 | <ul style="list-style-type: none"> • Detecting, measuring or recording <i>Measuring</i> fluid pressure within the body other than blood pressure, e.g. cerebral pressure {; {Measuring pressure in body tissues or organs (A61B 5/205 takes precedence <i>determining bladder or urethral pressure A61B 5/205</i>)} |
| M | A61B 5/05 | <ul style="list-style-type: none"> • Detecting, measuring or recording for diagnosis by means of electric currents or magnetic fields; Measuring using microwaves or radio waves (impedance plethysmography A61B 5/0295; measuring movement of the entire body or parts thereof A61B 5/11; detecting, measuring or recording bioelectric or biomagnetic signals of the body or parts thereof A61B 5/24) |
| M | A61B 5/06 | <ul style="list-style-type: none"> • Devices, other than using radiation, for detecting or locating foreign bodies {(for removing same A61B 17/50 -); determining position of probes <i>Determining position of diagnostic devices</i> within or on the body of the patient} |
| U | A61B 5/07 | <ul style="list-style-type: none"> • Endoradiosondes |
| M | A61B 5/076 | <ul style="list-style-type: none"> • • {Permanent implantations <i>implantation</i>} (telemetry using implanted circuitry A61B 5/0031; implanted stimulators for therapy A61N 1/3605, A61N 1/362, A61N 1/372)} |
| M | A61B 5/08 | <ul style="list-style-type: none"> • Detecting, measuring or recording <i>Measuring</i> devices for evaluating the respiratory organs (A61B 5/0205 takes precedence) |
| M | A61B 5/0806 | <ul style="list-style-type: none"> • • {by whole-body plethysmography (measuring blood flow using plethysmography A61B 5/0295; impedance plethysmography A61B 5/053; measuring volume of the body or parts thereof A61B 5/1073)} |

- D A61B 5/0809
- {by impedance pneumography}
 - <administratively transferred to [A61B 5/086](#)>
- M A61B 5/0826
- {Detecting or evaluating apnoea events (~~A61B 5/4818 takes precedence~~ [sleep apnoea A61B 5/4818](#))}
- U A61B 5/085
- Measuring impedance of respiratory organs or lung elasticity
- N A61B 5/086
- {by impedance pneumography}
- U A61B 5/087
- Measuring breath flow
- M A61B 5/0875
- {using means carried by the fluid stream, e.g. free-floating balls}
- M A61B 5/103
- ~~Detecting, measuring or recording~~ [Measuring](#) devices for testing the shape, pattern, {colour,} size or movement of the body or parts thereof, for diagnostic purposes (~~A61B 5/08 takes precedence; measuring aids for tailors A41H 1/00; measuring instruments specially adapted for dentistry A61C 19/04~~)
- M A61B 5/1032
- {Determining colour [of tissue](#) for diagnostic purposes (~~measuring colour in general G01J 3/46~~)}
- M A61B 5/11
- Measuring movement of the entire body or parts thereof, e.g. head or hand tremor; [or](#) mobility of a limb ~~{(for measuring pulse A61B 5/02 {A61B 5/1038 takes precedence; motion detection to correct for motion artifacts in physiological signals A61B 5/721})}~~
- M A61B 5/1103
- {Detecting [eye twinkling](#) [muscular movement of the eye, e.g. eyelid movement](#)}
- M A61B 5/1104
- {induced by stimuli or drugs ([A61B 5/1102 takes precedence](#)); (~~A61B 5/1102 takes precedence; investigating medicinal preparations G01N 33/15~~)}
- M A61B 5/1107
- {Measuring contraction of parts of the body, e.g. organ, ~~muscle~~ [or muscle](#)} (~~apparatus for measuring work or force in general G01L~~)
- M A61B 5/145
- Measuring characteristics of blood *in vivo*, e.g. gas concentration, ~~pH-value~~ [or pH-value](#) {; {Measuring characteristics of body fluids or tissues, e.g. interstitial fluid; [or](#) cerebral tissue} (~~measuring of blood pressure or blood flow A61B 5/02; non-radiation detecting or locating of foreign bodies in blood A61B 5/06~~)}
- U A61B 5/1455
- using optical sensors, e.g. spectral photometrical oximeters
- M A61B 5/1459
- invasive, e.g. introduced into the body by a catheter (~~{(A61B 5/1464 takes precedence)}~~)
- M A61B 5/1468
- using chemical or electrochemical methods, e.g. by polarographic means (~~{(A61B 5/1486 takes precedence)}~~)
- M A61B 5/1473
- invasive, e.g. introduced into the body by a catheter (~~{(A61B 5/1482 takes precedence)}~~)
- M A61B 5/1486
- [using](#) enzyme electrodes, e.g. with immobilised oxidase
- M A61B 5/14865
- [invasive](#), e.g. introduced into the body by a catheter or needle or using implanted sensors}
- M A61B 5/15
- Devices for taking samples of blood (~~hypodermic syringes A61M 5/178~~)

NOTE

In these subgroups, the following terms are used with the meaning indicated:

- "piercing element" means skin penetrating component e.g. blade, needle, lancet, laser beam;
- "piercing or lancing device" means device ready to be used for lancing;
- "driving device" means device for driving a piercing element e.g. spring

WARNING

This group and its subgroups are not complete pending a reorganisation. See also [A61B 5/14](#), [A61B 5/1405](#) and subgroups

- U A61B 5/150007
- {Details}

- U A61B 5/150206
 - • • {Construction or design features not otherwise provided for; manufacturing or production; packages; sterilisation of piercing element, piercing device or sampling device}
- M A61B 5/150305
 - • • • {Packages specially adapted for piercing devices or blood sampling devices ~~(kits for diabetes A61M 5/003; packaging in general B65D)~~}
- M A61B 5/150351
 - • • {Caps, stoppers or lids for sealing or closing a blood collection vessel or container, e.g. a test-tube or syringe barrel ~~(caps for bottles or containers in general B65D 41/00)~~}
- M A61B 5/150358
 - • • {Strips for collecting blood, e.g. absorbent ~~(optical reagent test strips G01N 21/8483; chemical reagent test strips G01N 33/4875, G01N 33/52)~~}
- M A61B 5/150366
 - • • {Blood collection bags, e.g. connected to the patient by a catheter comprising means for removing a small sample of collected blood from the bag ~~(collection bags as such A61J 1/05, A61M 1/0209)~~}
- M A61B 5/150374
 - • • {Details of piercing elements or protective means for preventing accidental injuries by such piercing elements ~~(double-ended hollow needles A61B 5/150473, A61B 5/150389; single-ended hollow needles A61B 5/150503, A61B 5/150389)~~}
- U A61B 5/150381
 - • • • {Design of piercing elements}
- M A61B 5/150473
 - • • • • {Double-ended needles, e.g. used with pre-evacuated sampling tubes (hollow piercing element tip design [A61B 5/150396](#); ~~needle sets for catheters A61M 25/06; needles for bringing media into the body A61M 5/32~~)}
- M A61B 5/150503
 - • • • • {Single-ended needles (hollow piercing element tip design [A61B 5/150396](#); ~~needle sets for catheters A61M 25/06; needles for bringing media into the body A61M 5/32~~)}
- M A61B 5/150732
 - • • {Needle holders, for instance for holding the needle by the hub, used for example with double-ended needle and pre-evacuated tube;}
- M A61B 5/150763
 - • • {with identification means ~~(identification means for surgical instruments A61B 90/90)~~}
- M A61B 5/150992
 - • {Blood sampling from a fluid line external to a patient, such as a catheter line, combined with an infusion line; ~~blood~~*Blood* sampling from indwelling needle sets, e.g. sealable ports, luer couplings, ~~valves or valves~~ *(tubing connectors and couplings A61M 39/00)*}
- M A61B 5/22
 - Ergometry; Measuring muscular strength or the force of a muscular blow ~~(exercising apparatus A63B 21/00)~~ ; ~~measuring of work or force in general G01L~~
- U A61B 5/24
 - Detecting, measuring or recording bioelectric or biomagnetic signals of the body or parts thereof

WARNING

Group [A61B 5/24](#) is impacted by reclassification into group [A61B 5/388](#).

Groups [A61B 5/24](#) and [A61B 5/388](#) should be considered in order to perform a complete search.

- U A61B 5/316
 - Modalities, i.e. specific diagnostic methods

WARNING

Group [A61B 5/316](#) is impacted by reclassification into groups [A61B 5/321](#), [A61B 5/329](#), [A61B 5/33](#), [A61B 5/338](#), [A61B 5/343](#), [A61B 5/346](#), [A61B 5/347](#), [A61B 5/353](#), [A61B 5/355](#), [A61B 5/357](#), [A61B 5/358](#), [A61B 5/36](#), [A61B 5/367](#), [A61B 5/372](#), [A61B 5/374](#), [A61B 5/388](#), [A61B 5/395](#) and [A61B 5/397](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- U A61B 5/318
- • • Heart-related electrical modalities, e.g. electrocardiography [ECG]
- WARNING
Group [A61B 5/318](#) is impacted by reclassification into groups [A61B 5/321](#), [A61B 5/329](#) and [A61B 5/33](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- U A61B 5/321
- • • Accessories or supplementary instruments therefor, e.g. cord hangers
- WARNING
Group [A61B 5/321](#) is incomplete pending reclassification of documents from groups [A61B 5/316](#) and [A61B 5/318](#).
Groups [A61B 5/316](#), [A61B 5/318](#) and [A61B 5/321](#) should be considered in order to perform a complete search.
- M A61B 5/322
- • • • Physical templates or devices for measuring ECG waveforms, e.g. electrocardiograph rulers or calipers (~~by template matching A61B 5/35~~)
- M A61B 5/369
- • • Electroencephalography [EEG] (~~devices for psychotechnics A61B 5/16~~)
- WARNING
Group [A61B 5/369](#) is impacted by reclassification into groups [A61B 5/37](#), [A61B 5/372](#), [A61B 5/384](#) and [A61B 5/386](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- M A61B 5/40
- {Detecting, measuring or recording for evaluating the nervous system (~~A61B 5/4806, A61B 5/4821, A61B 5/4824 take precedence~~*for sleep A61B 5/4806; for anaesthesia A61B 5/4821; for pain A61B 5/4824*)}
- M A61B 5/4029
- • {for evaluating the peripheral nervous systems (~~A61B 5/24 takes precedence~~*using bioelectric or biomagnetic signals A61B 5/24*)}
- M A61B 5/4058
- • {for evaluating the central nervous system (~~A61B 5/4806, A61B 5/4821 take precedence~~)}
- M A61B 5/4064
- • • {Evaluating the brain (~~A61B 5/031, A61B 5/369, A61B 5/14553 take precedence~~*for intracranial pressure A61B 5/031; for cerebral blood gases A61B 5/14553; using EEG A61B 5/369*)}
- M A61B 5/407
- • • {Evaluating the spinal cord (~~A61B 5/4896 takes precedence~~*for locating the epidural space A61B 5/4896*)}
- M A61B 5/4076
- • {Diagnosing or monitoring particular conditions of the nervous system (~~A61B 5/4821, A61B 5/4824 take precedence~~)}
- U A61B 5/43
- {Detecting, measuring or recording for evaluating the reproductive systems}
- U A61B 5/4306
- • {for evaluating the female reproductive systems, e.g. gynaecological evaluations}
- M A61B 5/4312
- • • {Breast evaluation or disorder diagnosis (~~A61B 5/0091 takes precedence~~*optical mammography A61B 5/0091*)}
- U A61B 5/45
- {For evaluating or diagnosing the musculoskeletal system or teeth ([A61B 5/1036](#), [A61B 5/1074](#), [A61B 7/006](#) take precedence)}
- M A61B 5/4519
- • {Muscles (~~A61B 5/389, A61B 5/224 take precedence~~*measuring muscular strength A61B 5/224; using electromyography [EMG] A61B 5/389*)}
- U A61B 5/48
- {Other medical applications}
- M A61B 5/4821
- • {Determining level or depth of anaesthesia (~~A61B 5/1106 takes precedence~~*based on movements A61B 5/1106*)}
- M A61B 5/4854
- • {Diagnosis based on concepts of ~~traditional oriental medicine~~*alternative medicine, e.g. homeopathy or non-orthodox*}

- M A61B 5/4857
- {Indicating the phase of biorhythm ~~{clocks or watches with indicators for biological cycles G04B 19/264}~~}
- M A61B 5/486
- {~~Bio-feedback~~ *Biofeedback* (A61B 5/375 takes precedence using *electroencephalography [EEG] A61B 5/375*)}
- M A61B 5/4866
- {Evaluating metabolism (~~A61B 5/083 takes precedence~~ using *breath test A61B 5/083*)}
- U A61B 5/68
- {Arrangements of detecting, measuring or recording means, e.g. sensors, in relation to patient}
- U A61B 5/6801
- {specially adapted to be attached to or worn on the body surface}
- U A61B 5/6802
- {Sensor mounted on worn items}
- U A61B 5/6804
- {Garments; Clothes}
- M A61B 5/6805
- {Vests, *e.g. shirts or gowns*}
- U A61B 5/683
- {Means for maintaining contact with the body (*A61B 5/6802* takes precedence)}
- M A61B 5/6832
- {using adhesives (~~A61B 5/259 takes precedence~~ *conductive adhesive for bioelectric electrodes A61B 5/259*)}
- M A61B 6/00**
- Apparatus or devices for radiation diagnosis; Apparatus or devices for radiation diagnosis combined with radiation therapy equipment (instruments measuring radiation intensity for application in the field of nuclear medicine, e.g. in vivo counting, *G01T 1/161*; ~~apparatus for taking X-ray photographs G03B 42/02~~)**
- NOTE**
- {In this group the following terms or expressions are used with the meaning indicated:
- "radiation" means ionising radiation, e.g. X rays or gamma rays, and does not cover other forms of radiation, e.g. optical
- }
- U A61B 6/02
- Arrangements for diagnosis sequentially in different planes; Stereoscopic radiation diagnosis
- M A61B 6/03
- Computed tomography [CT] ~~{echo-tomography A61B 8/14}~~
- M A61B 6/04
- Positioning of patients; Tilttable beds or the like ~~{operating tables A61G 13/00; operating chairs A61G 15/00}~~
- U A61B 7/00**
- Instruments for auscultation**
- M A61B 7/02
- Stethoscopes ~~{acoustic details thereof G10K 11/00}~~
- M A61B 7/04
- Electric stethoscopes ~~{microphones, acoustic transducers therefor H04R}~~
- M A61B 8/00**
- Diagnosis using ultrasonic, sonic or infrasonic waves ~~(imaging of objects using sonar G01S 15/00)~~**
- M A61B 8/06
- Measuring blood flow ~~{measuring volume flow in general G01F, e.g. G01F 1/66, G01F 1/72; measuring speed of fluids in general G01P 5/00}~~
- M A61B 8/065
- {to determine blood output from the heart ~~{in general A61B 5/029}~~}
- M A61B 8/08
- ~~Detecting organic movements or changes, e.g. tumours, cysts, swellings~~ *Clinical applications (A61B 8/02 -, A61B 8/04, A61B 8/06 take precedence)*
- M A61B 8/0875
- {for diagnosis of bone ~~{A61B 5/4504 takes precedence}~~}
- M A61B 8/12
- in body cavities or body tracts, e.g. by using catheters ~~{catheters per se A61M 25/00}~~
- M A61B 8/13
- Tomography (*A61B 8/10, A61B 8/12* take precedence; ~~tomography for radiation diagnosis A61B 6/02~~)
- U A61B 8/44
- {Constructional features of the ultrasonic, sonic or infrasonic diagnostic device}

- U A61B 8/4483 • • {characterised by features of the ultrasound transducer}
- M A61B 8/4494 • • • {characterised by the arrangement of the transducer elements ~~(devices for short-range imaging using particular transducer elements arrangements under G01S 15/8909; arrangements of transducers in generation of mechanical vibrations of infrasonic, sonic or ultrasonic frequency B06B 1/0607)~~}
- U A61B 8/46 • {Ultrasonic, sonic or infrasonic diagnostic devices with special arrangements for interfacing with the operator or the patient}
- U A61B 8/461 • • {Displaying means of special interest}
- M A61B 8/463 • • • {characterised by displaying multiple images or images and diagnostic data on one display ~~(composite display in devices for short-range imaging with acoustic waves G01S 7/52074)~~}
- M A61B 8/466 • • • {adapted to display 3D data ~~(3D imaging and stereoscopic displays in devices for short-range imaging with acoustic waves G01S 15/8993 and G01S 7/52068, respectively; 3D image rendering G06T 15/00; manipulating 3D models for computer graphics G06T 19/00)~~}
- U A61B 8/48 • {Diagnostic techniques ([A61B 8/13](#) takes precedence)}
- M A61B 8/481 • • {involving the use of contrast ~~agent~~*agents*, e.g. microbubbles introduced into the bloodstream ~~(analysis of echo signal exploiting properties of a contrast enhancer in devices for short-range imaging with acoustic waves G01S 7/52039)~~}
- M A61B 8/52 • {Devices using data or image processing specially adapted for diagnosis using ultrasonic, sonic or infrasonic waves ~~(image processing per se G06T)~~}
- M A61B 8/5207 • • {involving processing of raw data to produce diagnostic data, e.g. for generating an image ~~(reconstruction G06T 11/00)~~}
- U A61B 8/5215 • • {involving processing of medical diagnostic data}
- M A61B 8/5238 • • • {for combining image data of patient, e.g. merging several images from different acquisition modes into one image ~~(for image registration algorithms G06T 7/30)~~}
- M A61B 8/5269 • • {involving detection or reduction of artifacts ~~(for image enhancement algorithms G06T 5/00)~~}
- U A61B 8/58 • {Testing, adjusting or calibrating the diagnostic device}
- M A61B 8/587 • • {Calibration phantoms ~~(models for medical purposes G09B 23/28)~~}
- M A61B 10/00 *Instruments for taking body samples for diagnostic purposes (for taking samples of blood [A61B 5/15](#)); Other methods or instruments for diagnosis, e.g. instruments for taking a cell sample, for biopsy, for vaccination diagnosis for vaccination diagnosis, sex determination or ovulation-period determination (vaccination prophylaxis, vaccination therapy [A61B 17/20](#)); Sex determination; Ovulation-period determination (menstruation tables [G06C 3/00](#)); Throat striking implements*

NOTE

Attention is drawn to group [A61F 13/15](#) which provides for swabs

- M A61B 10/0045 • {Devices for taking samples of body liquids ~~(devices for taking blood samples [A61B 5/15](#))~~}

Project: RP12362, RP12357 (A61B)

- M A61B 10/0096 • {Casings for storing test samples ([A61B 10/0038](#) and [A61B 10/0045](#) take precedence; preservation of living parts of the human or animal body [A01N 1/02](#)[A01N 1/10](#); containers for retaining a material to be analysed [B01L 3/50](#); containers for enzymology or microbiology [C12M 1/16](#); swab-sampler being part of enzymology or microbiology container [C12M 1/30](#))}

Project: RP12362 (A61B)

- U A61B 10/02
 - Instruments for taking cell samples or for biopsy {([A61B 10/0038](#) and [A61B 10/0045](#) take precedence; needle locating or guiding means [A61B 17/3403](#); samplers for enzymology or microbiology [C12M 1/26](#); sampling or preparing biological specimens [G01N 33/48](#))}
- M A61B 10/04
 - • Endoscopic instruments, *e.g. catheter-type instruments*
- M A61B 13/00

Instruments for depressing the tongue (combined with illuminating and viewing instruments [A61B 1/24](#); *combined with saliva removers [A61C 17/10](#)*)
- M A61B 16/00

Devices specially adapted for vivisection or autopsy (~~similar devices for medical purposes, see the relevant groups for such devices {-; autopsy tables [A61G 13/0027](#)}~~)
- M A61B 17/00

Surgical instruments, devices or methods, ~~e.g. tourniquets~~ ([A61B 18/00](#) takes precedence; ~~contraceptive devices, pessaries, or applicators therefor [A61F 6/00](#); dental tools [A61C 3/00](#); eye surgery [A61F 9/007](#); ear surgery [A61F 11/00](#)~~[A61F 11/20](#))
- M A61B 17/00491
 - {Surgical glue applicators (~~surgical adhesives [A61L 24/00](#); two-component delivery syringes [A61M 5/19](#)~~)}
- M A61B 17/02
 - for holding wounds open, *e.g. retractors*; Tractors (~~{specula [A61B 1/32](#); drainage appliances for wounds [A61M 27/00](#)}~~)
- M A61B 17/04
 - for suturing wounds; Holders or packages for needles or suture materials (~~suture materials [A61L 17/00](#)~~)
- M A61B 17/0482
 - • {Needle or suture guides (guides for drills, pins or wire [A61B 17/17](#); ~~for puncturing needles [A61B 17/3403](#); guides for puncturing needles [A61B 17/3403](#)~~)}
- M A61B 17/06
 - • Needles {-; Sutures; Needle-suture combinations}; Holders or packages for needles or suture materials (~~puncturing needles [A61B 17/34](#); hypodermic needles [A61M 5/32](#) {-; sewing needles [D05B 85/00](#)}~~)
- M A61B 17/06004
 - • • {Means for attaching suture to needle (tipping [A61B 17/06195](#); ~~connecting wire to other metallic objects [B21F 15/00](#)~~)}
- M A61B 17/06066
 - • • {Needles, e.g. needle tip configurations (~~making needles [B21G 1/00](#)~~)}
- U A61B 17/068
 - Surgical staplers {-, e.g. containing multiple staples or clamps}{(staplers containing only one staple [A61B 17/10](#); magazines or containers for staples [A61B 17/105](#)); for performing anastomosis [A61B 17/115](#); (staplers in general [B25C 5/00](#))}
- M A61B 17/072
 - • for applying a row of staples in a single action {-, e.g. the staples being applied simultaneously}
- M A61B 17/10
 - for applying or removing wound clamps, {-, {, e.g. containing only one clamp or staple ([A61B 17/076](#) takes precedence; containing multiple wound clamps [A61B 17/068](#))}; Wound clamp magazines (~~containers, packaging elements or packages specially adapted for particular articles or with special means for dispensing contents [B65D 83/00](#), [B65D 85/00](#)~~)
- U A61B 17/11
 - for performing anastomosis; Buttons for anastomosis
- M A61B 17/115
 - • Staplers {for performing anastomosis, *e.g.* in a single operation}
- M A61B 17/12
 - for ligaturing or otherwise compressing tubular parts of the body, e.g. blood vessels; *or* umbilical cord (~~specially adapted for vas deferens or fallopian tubes [A61F 6/20](#); materials for ligaturing blood vessels [A61L 17/00](#)~~)
- M A61B 17/122
 - • Clamps or clips {-, e.g. for the umbilical cord {(for the vas deferens [A61F 6/206](#))}
- U A61B 17/132
 - • Tourniquets {(sphygmomanometer [A61B 5/022](#))}

- M A61B 17/135
 - • • inflatable ~~(for measuring blood pressure A61B 5/022; inflatable pressure pads A61F 5/34)~~
 - M A61B 17/14
 - Surgical saws (~~{A61B 17/1637 takes precedence;}~~ tooth saws A61C 3/12; ~~;~~ dental saws for teeth A61C 3/12) ~~{Accessories therefor}~~
 - M A61B 17/15
 - • Guides therefor ~~{(arrangements for guiding straight saw blades in general B23D 51/025)}~~
 - M A61B 17/16
 - ~~{Bone cutting, breaking or removal means other than saws, e.g.}~~ Osteoclasts *Instruments for performing osteoclasts*; Drills or chisels for bones; Trepan {arthroscopic bone cutters A61B 17/320016; dental implant drills potentially for other surgical use A61C 8/0089; bone grinders A61F 2/4644; A22C 17/06; A61B 17/1662 takes precedence over all other subgroups except A61B 17/17)}
 - U A61B 17/17
 - • Guides {or aligning means} for drills {, mills, pins or wires}
 - U A61B 17/1739
 - • • {specially adapted for particular parts of the body}
 - M A61B 17/176
 - • • • {for the jaw ~~(guiding dental drills A61C 1/082)~~}
 - M A61B 17/20
 - for vaccinating or cleaning the skin previous to the vaccination ~~{(diagnosis by vaccination other than by injuring the skin A61B 10/0035); apparatus for injections A61M Vaccination diagnosis other than by injuring the skin A61B 10/0035)}~~
- NOTE**
Cleaning the skin previous to the vaccination is classified in A61B 90/80
- M A61B 17/22
 - Implements for squeezing-off ulcers or the like on ~~{the inside of}~~ inner organs of the body; Implements for scraping-out cavities of body organs, e.g. bones; *Calculus removers for invasive removal or destruction of calculus using mechanical vibrations*; ~~Calculus smashing apparatus; {Apparatus for removing obstructions in blood vessels, not otherwise provided for (dilators A61M 29/00)}~~
 - U A61B 17/22004
 - • {using mechanical vibrations, e.g. ultrasonic shock waves (A61B 17/225 takes precedence)}
 - U A61B 17/22012
 - • • {in direct contact with, or very close to, the obstruction or concrement (for removing obstructions in blood vessels by laser A61B 18/245)}
 - M A61B 2017/22014
 - • • • {the ultrasound transducer being outside patient's body; with an ultrasound transmission member; with a wave guide; with a vibrated guide wire ~~(not applied in A61B 17/22012)~~}
 - U A61B 17/225
 - • for extracorporeal shock wave lithotripsy [ESWL], e.g. by using ultrasonic waves
 - M A61B 17/2255
 - • • {Means for positioning patient, shock wave apparatus or locating means, e.g. mechanical aspects, patient beds, support arms; ~~aiming means or aiming means~~ *{positioning of patients for radiation diagnosis A61B 6/04; positioning of locating means inside shock wave apparatus A61B 17/2256}*}
 - M A61B 17/28
 - Surgical forceps (*biopsy forceps A61B 10/06*; {for holding suture needles or materials A61B 17/0483; for removing or smashing calculi A61B 17/221; surgical scissors A61B 17/3201} ~~;~~ obstetrical forceps A61B 17/44; ~~for inserting intraocular lenses A61F 2/1662; hand-held gripping tools in general B25B 7/00~~ }
 - M A61B 17/30
 - Surgical pincettes, *i.e. surgical tweezers* {without pivotal connections} (~~{for holding suture needles or materials A61B 17/0483; } wound clamps A61B 17/08 {; hand-held gripping tools without pivotal connections in general B25B 9/02}~~)}
 - M A61B 17/32
 - Surgical cutting instruments (~~{(A61B 18/042 takes precedence; suture cutters A61B 17/0467; instruments for ligaturing or cutting A61B 17/128; } implements for ligaturing and cutting {A61B 17/122, A61B 17/12; instruments for rupturing the amniotic membrane A61B 17/4208; specially adapted knives for eye surgery A61F 9/0133}~~)}

- U A61B 17/3205 • • Excision instruments
- M A61B 17/32053 • • • {Punch like cutting instruments, e.g. using a cylindrical or oval knife
([A61B 17/326](#) takes precedence; trepans [A61B 17/1695](#); ~~for use on the cornea A61F 9/007~~)}
- U A61B 17/3209 • • Incision instruments
- U A61B 17/3211 • • • Surgical scalpels, knives; Accessories therefor
- M A61B 17/3217 • • • • Devices for removing or collecting used scalpel blades ~~{(for sharps A61B 50/362)}~~
- M A61B 17/34 • Trocars; Puncturing needles ~~{(pointed biopsy instruments A61B 10/0233; devices for piercing the ear lobes A44C 7/001; seals or hemostasis valves A61M 39/06)}~~
- M A61B 17/3401 • • {Puncturing needles for the peridural or subarachnoid space or the plexus, e.g. for anaesthesia ~~(local anaesthesia A61M 19/00)~~}
- M A61B 17/3403 • • {Needle locating or guiding means ~~(guides for suture needles A61B 17/0482; guiding or tracking by nuclear magnetic resonance G01R 33/285)}~~}
- M A61B 17/42 • Gynaecological or obstetrical instruments or methods {(ligaturing clamps or clips for the umbilical cord [A61B 17/122](#); curettage [A61B 17/320708](#); ~~dilators A61M 29/00~~)}
- M A61B 17/425 • • for reproduction or fertilisation ~~{(specially adapted for use with animals A61D 19/00)}~~
- M A61B 17/46 • • Embryotomes ~~(for animals A61D 1/10)~~
- M A61B 17/50 • Instruments {, other than pincettes or toothpicks,} for removing foreign bodies from the human body (~~locating otherwise A61B 5/06; locating by radiation A61B 6/00; {removing calculi A61B 17/22; from the eyes A61F 9/00709}~~) *surgical pincettes, i.e. surgical tweezers, A61B 17/30*
- M A61B 17/54 • Chiropodists' instruments {, e.g. pedicure ~~(chiropractic devices A61H 1/008)~~}
- U A61B 17/56 • Surgical instruments or methods for treatment of bones or joints; Devices specially adapted therefor

NOTES

1. Documents concerning exclusively surgical methods are classified only in this group.
2. Surgical instruments or devices are classified only in the relevant subgroups

- M A61B 17/58 • • for osteosynthesis, e.g. bone plates, screws ~~{, setting implements} or the like or setting implements~~ ([A61B 17/14](#), [A61B 17/16](#) take precedence)
- U A61B 17/68 • • • Internal fixation devices {, including fasteners and spinal fixators, even if a part thereof projects from the skin (bone staples [A61B 17/0642](#))}
- M A61B 17/70 • • • • ~~Spinal positioners or stabilisers {; Bone stabilisers~~ *Spinal positioners or stabilisers, e.g. stabilisers* comprising fluid filler in an implant}
- U A61B 17/7074 • • • • • {Tools specially adapted for spinal fixation operations other than for bone removal or filler handling ([A61B 17/7062](#), [A61B 17/808](#), [A61B 17/8858](#) take precedence; for spinal image producing devices [A61B 90/36](#), [A61B 34/20](#); markers [A61B 90/39](#))}
- U A61B 17/7076 • • • • • • {for driving, positioning or assembling spinal clamps or bone anchors specially adapted for spinal fixation}
- M A61B 17/7082 • • • • • • {for driving, i.e. rotating, screws or screw parts specially adapted for spinal fixation, e.g. for driving polyaxial or tulip-headed screws ~~(driving other bone screws A61B 17/8875)~~}
- M A61B 17/72 • • • • Intramedullary ~~{pins, nails or other} devices {devices, e.g. pins or nails~~ ([A61B 17/744](#) takes precedence)}

- U A61B 18/00** Surgical instruments, devices or methods for transferring non-mechanical forms of energy to or from the body (eye surgery [A61F 9/007](#); ear surgery [A61F 11/00](#))
- M A61B 18/02** • by cooling, e.g. cryogenic techniques (~~devices for cooling specific reflex points of the body within cell-life limits A61H 39/06~~)
- M A61B 18/04** • by heating (by applying electromagnetic radiation [A61B 18/18](#); ~~hyperthermia using electric or magnetic fields, radiation or ultrasound A61N~~)
- M A61B 18/18** • by applying electromagnetic radiation, e.g. microwaves (~~radiation therapy A61N 5/00~~)
- U A61B 18/20** • • using laser
- U A61B 2018/2035** • • {Beam shaping or redirecting; Optical components therefor ([A61B 2018/2255](#) takes precedence)}
- M A61B 2018/20553** • • • {with special lens or reflector arrangement (~~A61B 2018/2255; A61B 2018/2261; A61B 2018/2266; A61B 2018/2272; A61B 2018/2277; A61B 2018/2283 take precedence~~)}

Project: MP12467 (A61B)

- U A61B 34/00** Computer-aided surgery; Manipulators or robots specially adapted for use in surgery
- U A61B 34/30** • Surgical robots
- M A61B 34/37** • • ~~Master-slave~~ **Leader-follower** robots ([A61B 34/35](#) takes precedence)

Project: RP12362 (A61B)

- M A61B 90/00** Instruments, implements or accessories specially adapted for surgery or diagnosis and not covered by any of the groups [A61B 1/00](#) - [A61B 50/00](#), e.g. for luxation treatment or for protecting wound edges (~~protective face masks A41D 13/11; surgeon's or patient's gowns or dresses A41D 13/12; devices for carrying-off, for treatment of, or for carrying-over, body liquids A61M 1/00~~)
- M A61B 90/05** • {Splash shields for protection of the surgeon, e.g. splash guards connected to the apparatus (~~A41D 13/11 takes precedence~~)}
- M A61B 90/60** • Supports for surgeons, e.g. chairs or hand supports (seats for dentists or surgeons associated with dental chairs or operating chairs [A61G 15/00](#) [A61G 15/08](#))
- N A61B 2217/00 - A61B 2218/00** **Surgery**
- D A61B 2218/00 - A61B 2576/00** **Diagnosis; Psycho-physical tests**
- N A61B 2503/00 - A61B 2576/00** **Diagnosis**
- M A61B 2576/00** Medical imaging apparatus involving image processing or analysis ([A61B 1/00009](#), [A61B 6/52](#) and [A61B 8/52](#) take precedence; ~~image processing per se G06T; details of algorithms for analysing medical images G06T 7/0012~~)

Project: MP12363 (A61F)

M	A61F 2/00	Filters implantable into blood vessels; Prostheses, i.e. artificial substitutes or replacements for parts of the body; Appliances for connecting them with the body; Devices providing patency to, or preventing collapsing of, tubular structures of the body, e.g. stents (as cosmetic articles, see the relevant subclasses, e.g. wigs, hair pieces, A41G 3/00, A41G 5/00; artificial nails A45D 31/00; dental prostheses A61C 13/00; materials for prostheses A61L 27/00; artificial kidneys A61M 1/14; artificial hearts A61M 60/00; artificial kidneys A61M 1/14)
M	A61F 2/02	• Prostheses implantable into the body {{closure means for urethra or rectum or for artificial body openings therefor A61F 2/0004}}
M	A61F 2/04	• • Hollow or tubular parts of organs, e.g. bladders, tracheae, bronchi or bile ducts (A61F 2/18 , A61F 2/20 take precedence; devices, other than stent-grafts, providing patency to, or preventing collapsing of, tubular structures of the body other than stent-grafts, e.g. stents A61F 2/82; instruments specially adapted for placement or removal of stents or stent-grafts A61F 2/95)
U	A61F 2/06	• • • Blood vessels
M	A61F 2/062	• • • {Apparatus for the production of blood vessels made from natural tissue or with layers of living cells (prostheses made from natural tissue or living cells A61L 27/507)}
M	A61F 2/08	• • Muscles; Tendons; Ligaments {{sutures A61B 17/04}}
M	A61F 2/12	• • Mammary prostheses and implants
M	A61F 2/14	• • Eye parts, e.g. lenses; or corneal implants; {Implanting instruments specially adapted therefor} ; Artificial eyes
M	A61F 2/20	• • { Epiglottis }; Larynxes; Tracheae combined with larynxes or for use therewith (tracheae, bronchi per se A61F 2/04 -; tracheostomy tubes A61M 16/0465)}
U	A61F 2/24	• • Heart valves {; Vascular valves, e.g. venous valves; Heart implants, e.g. passive devices for improving the function of the native valve or the heart muscle; Transmyocardial revascularisation [TMR] devices; Valves implantable in the body}
M	A61F 2/2412	• • • {with soft flexible valve members, e.g. tissue valves shaped like natural valves (check valves with flexible valve members in general F16K 15/14)}
M	A61F 2/28	• • Bones (joints A61F 2/30)
M	A61F 2/2875	• • • {Skull or cranium (A61F 2/2803 and takes A61F 2/3099 take precedence; joints for temporo-mandibular [TM] joints [TMJ] A61F 2/3099)}
U	A61F 2/30	• • Joints
M	A61F 2/46	• • • Special tools or methods for implanting or extracting artificial joints, accessories, bone grafts or substitutes, or particular adaptations therefor for implanting artificial joints
U	A61F 2/50	• Prostheses not implantable in the body {{closure means for urethra or rectum or for artificial body openings therefor A61F 2/0004}}
M	A61F 2/52	• • Mammary prostheses (brassieres A41C 3/00 brassieres with stiffening or bust-forming inserts A41C 3/10, A41C 3/14)
M	A61F 2/82	• Devices providing patency to, or preventing collapsing of, tubular structures of the body, e.g. stents (stent-grafts for tubular structures of the body other than blood vessels A61F 2/04 ; stent-grafts for blood vessels A61F 2/07 ; instruments specially adapted for placement or removal of stents or stent-grafts A61F 2/95; for closing wounds, or holding wounds closed A61B 17/04 - A61B 17/115; dilators A61M 29/00)
U	A61F 2/86	• • Stents in a form characterised by the wire-like elements; Stents in the form characterised by a net-like or mesh-like structure

M	A61F 2/88	<ul style="list-style-type: none"> • • the wire-like elements formed as helical or spiral coils (forming a net-like or mesh-like structure A61F 2/90)
U	A61F 2/90	<ul style="list-style-type: none"> • • characterised by a net-like or mesh-like structure
M	A61F 2/91	<ul style="list-style-type: none"> • • • made from perforated sheet materials <i>sheets</i> or tubes, e.g. perforated by laser cuts or etched holes
M	A61F 4/00	Methods or devices enabling patients or disabled persons to operate an apparatus or a device not forming part of the body (operating or control means for prostheses A61F 2/48, A61F 2/68)
M	A61F 5/00	Orthopaedic methods or devices for non-surgical treatment of bones or joints (surgical instruments or methods for treatment of bones or joints, devices specially adapted therefor A61B 17/56); Nursing devices; {Anti-rape devices} <i>Nursing devices</i> (bandages, dressings or absorbent pads A61F 13/00) <i>{; Anti-rape devices}</i>
M	A61F 5/01	<ul style="list-style-type: none"> • Orthopaedic devices, e.g. <i>long-term immobilising or pressure directing devices for treating broken or deformed bones such as</i> splints, casts or braces
M	A61F 5/02	<ul style="list-style-type: none"> • Orthopaedic corsets (arm-rests for use as writing aids B43L 15/00)
M	A61F 5/03	<ul style="list-style-type: none"> • Corsets or bandages for abdomen, teat or breast support, with or without pads ((trusses A61F 5/24, pressure-pads A61F 5/30); brassieres A41C 3/00) <p><u>NOTE</u> Bandages for support of breasts or abdomen are classified in group A61F 13/14</p>
M	A61F 5/04	<ul style="list-style-type: none"> • Devices for stretching or reducing fractured limbs; Devices for distractions; Splints ((plaster of Paris bandages A61F 13/04; with surgery A61B 17/60))
M	A61F 5/05	<ul style="list-style-type: none"> • • for immobilising (<i>A61F 5/0102 A61F 5/042</i> takes precedence)
M	A61F 5/30	<ul style="list-style-type: none"> • Pressure- pads (corn-pads, corn-rings A61F 13/06; {tourniquets A61B 17/132})
M	A61F 5/34	<ul style="list-style-type: none"> • • Pressure pads filled with air or liquid (valves specially adapted for medical use A61M 39/00; connection of valves to inflatable elastic bodies B60C 29/00; {valves per se F16K})
M	A61F 5/37	<ul style="list-style-type: none"> • Restraining devices for the body or for body parts {, e.g. slings}; Restraining shirts ((handcuffs E05B 75/00))
M	A61F 5/41	<ul style="list-style-type: none"> • Devices for promoting penis erection (penis implants A61F 2/26; massage of the genitals A61H 19/00)
M	A61F 5/44	<ul style="list-style-type: none"> • Devices worn by the patient for reception of urine, faeces, catamenial or other discharge; {Portable urination aids} <i>Devices worn by the patient for reception of urine, faeces, catamenial or other discharge</i> (absorbent pads, e.g. sanitary towels, A61F 13/15; drainage appliances for wounds A61M 27/00; {emptying devices for urine bags B65B 69/0016}); Colostomy devices (adhesives for colostomy devices A61L 24/00; materials for colostomy devices A61L 28/00)
M	A61F 5/443	<ul style="list-style-type: none"> • • having {adhesive seals for securing to the body, e.g. of} hydrocolloid type <i>seals</i>, e.g. gels, starches, karaya gums ((adhesives or sealing pads therefor A61L 24/00))
M	A61F 5/56	<ul style="list-style-type: none"> • Devices for preventing snoring ((by influencing the respiratory system by gas treatment A61M 16/00))
M	A61F 6/00	Contraceptive devices; Pessaries; Applicators therefor (chemical aspects of contraception A61K)
U	A61F 6/06	<ul style="list-style-type: none"> • for use by females (A61F 6/20 takes precedence)
U	A61F 6/14	<ul style="list-style-type: none"> • intra-uterine type
M	A61F 6/18	<ul style="list-style-type: none"> • • Inserters or removers {; Apparatus for loading an intra-uterine device into an insertion tube}

U	A61F 6/20	• Vas deferens occluders; Fallopian occluders
M	A61F 6/202	• {Means specially adapted for ligaturing, compressing or clamping of oviduct or vas deferens (of tubular organs in general A61B 17/12) }
M	A61F 7/00	Heating or cooling appliances for medical or therapeutic treatment of the human body (heating or cooling means in connection with bedsteads or mattresses A47C 21/00; massage, therapeutic baths A61H); hyperthermia using electric or magnetic fields or ultrasound A61N; electric heating elements H05B)
M	A61F 7/08	• Warming pads, pans or mats (A61F 7/02 takes precedence) ; Hot-water bottles
M	A61F 9/00	Methods or devices for treatment of the eyes; Devices for putting - in contact - lenses; Devices to correct squinting; Apparatus to guide the blind; Protective devices for the eyes, carried on the body or in the hand (caps with means for protecting the eyes A42B 1/018A42B 1/0181; visors for helmets A42B 3/22; retractors A61B 17/02; manipulators specially adapted for use in surgery A61B 34/70); appliances to aid invalids to move about A61H 3/00; exercisers for the eyes A61H 5/00; eye baths A61H 35/02; sunglasses or goggles having the same features as spectacles G02C)
M	A61F 9/02	• Goggles {(breathing masks A62B 18/00; swimming goggles A63B 33/002; diving masks B63C 11/12 for swimming A63B 33/00)}
M	A61F 9/04	• Eye-masks {}; Devices to be worn on the face, not intended for looking through; Eye-pads for sunbathing (eye-bandages A61F 13/12; protective face-masks A41D 13/11; protectors for shampooing A45D)
M	A61F 9/06	• Masks, shields or hoods for welders (safety devices for welding in general F16P 1/00)
U	A61F 13/00	Bandages or dressings (radioactive dressings {A61N 5/1029}); Absorbent pads
M	A61F 13/04	• Plaster of Paris bandages; Other stiffening bandages (A61F 13/06 - A61F 13/15 take precedence; <i>orthopaedic casts made from stiffening bandages A61F 5/01</i>)
M	A61F 13/10	• specially adapted for fingers, hands; or arms; Finger-stalls; Nail-protectors {(restraining devices for arms A61F 5/37; shoulder bandages A61F 13/14)}
M	A61F 13/15	• Absorbent pads, e.g. sanitary towels, swabs or tampons for external or internal application to the body (non-absorbent catamenial receptacles A61F 5/44) ; Supporting or fastening means therefor; Tampon applicators
M	A61F 13/36	• Surgical swabs, e.g. for absorbency or packing body cavities during surgery (A61F 13/38 takes , A61M 35/006 take precedence)
M	A61F 13/38	• Swabs having a stick-type handle, { {, e.g. cotton tips} (ear cleaners other than cotton tips A61F 11/006; swabs containing a liquid, e.g. in a rupturable reservoir, A61M 35/006A61M 35/006 takes precedence) }
U	A61F 13/45	• characterised by the shape (cup-shaped type tampons A61F 13/2045)
U	A61F 13/47	• Sanitary towels, incontinence pads or napkins (A61F 13/49 takes precedence)
M	A61F 13/472	• specially adapted for female use {(A61F 13/474, A61F 13/475, A61F 13/476 take precedence)}
M	A61F 13/476	• characterised by encircling the crotch region of the undergarment, <i>e.g. with flaps</i>
M	A61F 13/49	• Absorbent articles specially adapted to be worn around the waist, e.g. diapers, <i>nappies</i>
M	A61F 13/505	• with separable parts, e.g. combination of disposable and reusable parts; (A61F 13/20, { {, A61F 13/49003} take precedence; supporting or fastening means A61F 13/56; {belts or the like A61F 13/64})

- M A61F 13/51
- characterised by the outer layers ~~{of the pads (wicking or transfer layers A61F 13/537 A61F 13/20 takes precedence)}~~
- U A61F 13/53
- characterised by the absorbing medium (A61F 13/20 takes precedence)
- M A61F 13/534
- having an inhomogeneous composition through the thickness of the pad (A61F 13/538, A61F 13/539 take precedence; ~~homogeneous cores with tissue wrapping A61F 13/53~~)
- M A61F 13/535
- inhomogeneous in the plane of the pad, e.g. core absorbent layers being of different sizes ~~{{(A61F 13/5323, A61F 13/537 take precedence)}~~
- U A61F 13/56
- Supporting or fastening means
- U A61F 13/58
- Adhesive tab fastener elements (~~(A61F 13/5611, A61F 13/5616, A61F 13/66 take precedence)~~
- M A61F 13/581
- {Tab fastener elements combining adhesive and mechanical fastening ~~(fabric strip fastener elements A61F 13/62)}~~
- M A61F 13/62
- {Mechanical fastening means; ~~(A61F 13/5611, A61F 13/5616, A61F 13/581, A61F 13/66 take precedence);~~ Fabric strip fastener elements, e.g. hook and loop ~~(A61F 13/66 takes precedence)~~
- M A61F 15/00
- Auxiliary appliances for wound dressings; Dispensing containers for dressings or bandages ~~{{(packaging of absorbent articles such as diapers, feminine hygiene absorbing pads or tampons A61F 13/551; packaging of wound dressings A61F 13/00072)}~~**

Project: MP12470 (A61H)

- M A61H 31/00
- ~~Artificial respiration by a force applied to the chest; Artificial respiration or heart~~Heart stimulation, e.g. heart massage ~~(artificial respiration by treatment with gas or air, e.g. mouth-to-mouth respiration A61M 16/00; applying electric currents by contact electrodes for stimulation, e.g. heart pace-makers, A61N 1/36~~); teaching or training models, demonstration models for medical purposes ~~G09B 23/288}~~**
- M A61H 31/02
- ~~"Iron-lungs" {, i.e. involving chest expansion by applying underpressure thereon}, whether or not combined with gas breathing means~~Iron lungs

Project: RP12357 (A61J)

- U A61J 1/00
- Containers specially adapted for medical or pharmaceutical purposes (capsules or the like for oral use ~~A61J 3/07~~; specially adapted for surgical or diagnostic appliances or instruments ~~A61B 50/30~~; containers for radioactive substances ~~G21F 5/00~~)**
- U A61J 1/05
- for collecting, storing or administering blood, plasma or medical fluids ~~{{(multiple bags systems for separating or storing blood components A61M 1/0209; Infusion or perfusion containers)}~~
- C A61J 1/10
- Bag-type containers
- WARNING**
*Group A61J 1/10 is incomplete pending reclassification of documents from group A01N 1/146.
 Group A61J 1/10 is also impacted by reclassification into groups C12N 5/54 - C12N 5/548.
 Groups A01N 1/146, A61J 1/10 and C12N 5/54 - C12N 5/548 should be considered in order to perform a complete search.*
- C A61J 1/12
- with means for holding samples of contents
- WARNING**
Group A61J 1/12 is impacted by reclassification into groups C12N 5/54 - C12N 5/548.

Groups A61J 1/12 and C12N 5/54 - C12N 5/548 should be considered in order to perform a complete search.

- U A61J 1/14 • Details; Accessories therefor ([A61J 7/00](#) takes precedence; openers [B65D](#), [B67B 7/00](#))

- C A61J 1/16 • • Holders for containers

WARNING

Group A61J 1/16 is impacted by reclassification into groups C12N 5/54 - C12N 5/548.

Groups A61J 1/16 and C12N 5/54 - C12N 5/548 should be considered in order to perform a complete search.

- C A61J 1/165 • • • {Cooled holders, e.g. for medications, insulin, blood; ~~or~~ plasma}

WARNING

Group A61J 1/165 is impacted by reclassification into groups C12N 5/54 - C12N 5/548.

Groups A61J 1/165 and C12N 5/54 - C12N 5/548 should be considered in order to perform a complete search.

Project: Unknown (A61K)

A61K

PREPARATIONS FOR MEDICAL, DENTAL OR TOILETRY PURPOSES

(devices or methods specially adapted for bringing pharmaceutical products into particular physical or administering forms [A61J 3/00](#); chemical aspects of, or use of materials for deodorisation of air, for disinfection or sterilisation, or for bandages, dressings, absorbent pads or surgical articles [A61L](#); soap compositions [C11D](#))

NOTES

1. This subclass covers the following subject matter, whether set forth as a composition (mixture), process of preparing the composition or process of treating using the composition:

- a. Drug or other biological compositions which are capable of:
 - preventing, alleviating, treating or curing abnormal or pathological conditions of the living body by such means as destroying a parasitic organism, or limiting the effect of the disease or abnormality by chemically altering the physiology of the host or parasite (biocides [A01N 25/00](#) - [A01N 65/00](#));
 - maintaining, increasing, decreasing, limiting, or destroying a physiological body function, e.g. vitamin compositions, sex sterilants, fertility inhibitors, growth promoters, or the like (sex sterilants for invertebrates, e.g. insects, [A01N](#); plant growth regulators [A01N 25/00](#) - [A01N 65/00](#));
 - diagnosing a physiological condition or state by an in vivo test, e.g. X-ray contrast or skin patch test compositions (measuring or testing processes involving enzymes or microorganisms [C12Q](#); in vitro testing of biological material, e.g. blood, urine, [G01N](#), e.g. [G01N 33/48](#))
- b. Body treating compositions generally intended for deodorising, protecting, adorning or grooming the body, e.g. cosmetics, dentifrices, tooth filling materials.

2. Attention is drawn to the definitions of groups of chemical elements following the title of section [C](#).

3. Attention is drawn to the notes in class [C07](#), for example the notes following the title of the subclass [C07D](#), setting forth the rules for classifying organic

compounds in that class, which rules are also applicable, if not otherwise indicated, to the classification of organic compounds in [A61K](#).

4. In this subclass, with the exception of group [A61K 8/00](#), the last place priority rule is applied, i.e. at each hierarchical level, in the absence of an indication to the contrary, classification is made in the last appropriate place.

5. Therapeutic activity of medicinal preparations is further classified in subclass [A61P](#).

WARNINGS

1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:

A61K 9/133 A61K9/133	covered by	A61K 9/127
A61K 9/18	covered by	A61K 9/14
A61K 9/22	covered by	A61K 9/20
A61K 9/24	covered by	A61K 9/209
A61K 9/26	covered by	A61K 9/2077 , A61K 9/2081
A61K 9/30	covered by	A61K 9/28
A61K 9/32	covered by	A61K 9/28
A61K 9/34	covered by	A61K 9/28
A61K 9/36	covered by	A61K 9/28
A61K 9/38	covered by	A61K 9/28
A61K 9/40	covered by	A61K 9/28
A61K 9/42	covered by	A61K 9/28
A61K 9/44	covered by	A61K 9/2072
A61K 9/46	covered by	A61K 9/0007
A61K 9/52	covered by	A61K 9/50
A61K 9/54	covered by	A61K 9/5073 , A61K 9/5078 , A61K 9/5084
A61K 9/56	covered by	A61K 9/50
A61K 9/58	covered by	A61K 9/50
A61K 9/60	covered by	A61K 9/50
A61K 9/62	covered by	A61K 9/50
A61K 9/64	covered by	A61K 9/50
A61K 9/66	covered by	A61K 9/48
A61K 9/68	covered by	A61K 9/0058
A61K 9/72	covered by	A61K 9/0073
A61K 39/108	covered by	A61K 39/0258 , A61K 39/0266
A61K 39/112	covered by	A61K 39/0275 , A61K 39/0283
A61K 45/08	covered by	A61K 31/00 , A61K 47/00
A61K 47/04	covered by	A61K 47/02
A61K 50/00	covered by	A61K 9/0009 , C09J 9/02

The following IPC indexing codes are not in the CPC scheme:

A61K 101/00 - A61K 103/00	covered by	A61K 51/00 - A61K 51/1296
A61K 125/00 - A61K 135/00	covered by	A61K 36/00 - A61K 36/9068

2. Subgroups of [A61K 48/00](#) are incomplete (Jan. 2003). Documents are being reclassified from [A61K 48/00](#) to its subgroups

3. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

Project: MP12460 (A61K)

U A61K 9/00 Medicinal preparations characterised by special physical form {(nuclear magnetic resonance contrast preparations or magnetic resonance imaging contrast preparations [A61K 49/18](#); preparations containing radioactive substances [A61K 51/12](#))}

NOTE

Among the one-dot groups of [A61K 9/00](#), classification is not made in the last appropriate place.

[A61K 9/00](#) is subdivided according to the following concepts:

- the drug release technique ([A61K 9/0002](#) and subgroups),
- the site of application ([A61K 9/0012](#) and subgroups), and
- the physical form ([A61K 9/0087](#) - [A61K 9/7023](#)).

Where relevant, documents are classified in more than one of these subdivisions.

- U A61K 9/10 • Dispersions; Emulsions {([A61K 9/06](#) takes precedence; composition of dispersions, emulsions [A61K 47/00](#))}
- M A61K 9/127 • *Liposomes* *Synthetic bilayered vehicles, e.g. liposomes or liposomes with cholesterol as the only non-phosphatidyl surfactant*
- M A61K 9/1271 • • {Non-conventional liposomes, e.g. PEGylated liposomes, ~~liposomes coated or liposomes coated or grafted~~ with polymers (~~liposome as conjugate~~ [A61K 47/6911](#) ~~liposomes as conjugates~~ {[A61K 47/6911](#)})}
- M A61K 9/1272 • • • {~~with substantial amounts of~~ *comprising* non-phosphatidyl, i.e. non-acylglycerophosphate, surfactants as bilayer-forming substances, e.g. cationic lipids *or non-phosphatidyl liposomes coated or grafted with polymers* (~~with cholesterol as the only non-phosphatidyl surfactant~~ [A61K 9/127](#); lipids as modifying ~~agent~~ *agents* {[A61K 47/543](#)})}
- M A61K 9/1273 • • • {Polymersomes; ~~Liposomes with polymerisable or polymerised bilayer-forming substances~~ (~~polymers grafted or coated on phosphatidyl liposomes~~ [A61K 9/1271](#), ~~on non-phosphatidyl liposomes~~ [A61K 9/1272](#))}
- M A61K 9/1274 • • {Non-vesicle bilayer structures, e.g. liquid crystals, tubules, cubic phases; *or* cochleates; ~~Sponge phases~~}
- M A61K 9/1275 • • {*Lipoproteins* *Lipoproteins or protein-free species thereof, e.g. chylomicrons; Chylomicrons*; ~~Artificial HDL, LDL, VLDL, protein-free species thereof~~ *high-density lipoproteins [HDL], low-density lipoproteins [LDL] or very-low-density lipoproteins [VLDL]*; ~~Precursors thereof~~}
- M A61K 9/1276 • • {Globules of milk ~~or constituents thereof~~; *Constituents thereof*}
- M A61K 9/1277 • • {~~Processes for preparing~~ *Preparation processes*; ~~Proliposomes~~}
- M A61K 9/1278 • • • {Post-loading, e.g. by ion or pH gradient}

Project: RP10429-F (A61K)

U A61K 35/00 Medicinal preparations containing materials or reaction products thereof with undetermined constitution

NOTES

1. In this group, classification is made for each active component or material. For each active component or material, classification is then made in the last appropriate place.

2. When classifying in this group, classification is also made in group [B01D 15/08](#) insofar as subject matter of general interest relating to chromatography is concerned.

- U A61K 35/12
- Materials from mammals; Compositions comprising non-specified tissues or cells; Compositions comprising non-embryonic stem cells; Genetically modified cells (vaccines or medicinal preparations containing antigens or antibodies [A61K 39/00](#))

NOTE

If the cells are characterised, classification is made in the group covering the corresponding tissue or tissue of origin.

- U A61K 35/14
- • Blood; Artificial blood (perfluorocarbons [A61K 31/02](#); umbilical cord blood [A61K 35/51](#); haemoglobin [A61K 38/42](#))

- M A61K 35/15
- • Cells of the myeloid line, e.g. granulocytes, basophils, eosinophils, neutrophils, leucocytes, monocytes, macrophages or mast cells; Myeloid precursor cells; Antigen-presenting cells, e.g. dendritic cells (presenting a specific antigen [A61K 39/00](#); therapeutic combinations of antibodies, or fragments thereof, and blood-derived cells [A61K 39/00](#))

WARNING

Group A61K 35/15 is impacted by reclassification into groups A61K 39/46 - A61K 39/46484, A61K 2239/00 - A61K 2239/59.

All groups listed in this Warning should be considered in order to perform a complete search.

- M A61K 35/17
- • Lymphocytes; B-cells; T-cells; Natural killer cells; Interferon-activated or cytokine-activated lymphocytes (when activated by a specific antigen [A61K 39/00](#))

WARNING

Group A61K 35/17 is impacted by reclassification into groups A61K 39/46 - A61K 39/46484, A61K 2239/00 - A61K 2239/59.

All groups listed in this Warning should be considered in order to perform a complete search.

- M A61K 39/00
- Medicinal preparations containing antigens or antibodies (materials for immunoassay [G01N 33/53](#))**

NOTES

1. Groups [A61K 39/002](#) - [A61K 39/295](#) cover preparations containing protozoa, bacteria, viruses, or subunits thereof, e.g. membrane parts.
2. Preparation of antigen or antibody compositions is also classified in subclass [C12N](#), if the step of cultivating the microorganism is of interest.
3. Documents relating to new peptides, e.g. enzymes, or new DNA or RNA encoding for peptides and their use in medicinal preparations are classified in subclass [C07K](#) or in group [C12N 9/00](#) according to the peptides, with the appropriate indexing codes relating to their medical uses.
4. Documents relating to antibodies or DNA or RNA encoding for antibodies and their use in medicinal preparations are classified in group [C07K 16/00](#) or in group [C12N 9/0002](#) according to the antibodies, with the appropriate indexing codes relating to their medical uses.
5. Documents relating to new therapeutical uses of antibodies or DNA or RNA encoding for antibodies are classified in group [C07K 16/00](#) or in group [C12N 9/0002](#) according to the antibodies, with the appropriate indexing codes relating to their medical uses.
6. Documents relating to medicinal preparations containing different antibodies as active ingredients are classified in group [C07K 16/00](#) according to the different active antibodies, with the appropriate indexing codes relating to their medical uses. However, documents relating to medicinal preparations containing antibodies and other compounds as active ingredients are classified in

groups [A61K 39/395](#) - [A61K 39/42](#), in association with symbol [A61K 2300/00](#) in Combination Sets.

WARNING

Group A61K 39/00 is impacted by reclassification into group A61K 39/46. Groups A61K 39/00 and A61K 39/46 should be considered in order to perform a complete search.

U A61K 39/0005

- {Vertebrate antigens (from snakes [A61K 39/38](#))}

M A61K 39/0011

- • {Cancer antigens}

WARNING

Group A61K 39/0011 is impacted by reclassification into groups A61K 39/46 - A61K 39/4637, A61K 39/4644, A61K 39/464401, A61K 39/464499 and A61K 2239/00 - A61K 2239/59.

All groups listed in this Warning should be considered in order to perform a complete search.

M A61K 39/001102

- • • {Receptors, cell surface antigens or cell surface determinants}

WARNING

Group A61K 39/001102 is impacted by reclassification into groups A61K 39/46 - A61K 39/4637, A61K 39/464401, A61K 39/464402 and A61K 2239/00 - A61K 2239/59.

All groups listed in this Warning should be considered in order to perform a complete search.

M A61K 39/001103

- • • • {Receptors for growth factors}

WARNING

Group A61K 39/001103 is impacted by reclassification into groups A61K 39/46 - A61K 39/4637, A61K 39/464401, A61K 39/464403 and A61K 2239/00 - A61K 2239/59.

All groups listed in this Warning should be considered in order to perform a complete search.

M A61K 39/001104

- • • • • {Epidermal growth factor receptors [EGFR]}

WARNING

Group A61K 39/001104 is impacted by reclassification into groups A61K 39/46 - A61K 39/4637, A61K 39/464401, A61K 39/464404 and A61K 2239/00 - A61K 2239/59.

All groups listed in this Warning should be considered in order to perform a complete search.

M A61K 39/001106

- • • • • {Her-2/neu/ErbB2, Her-3/ErbB3 or Her 4/ErbB4}

WARNING

Group A61K 39/001106 is impacted by reclassification into groups A61K 39/46 - A61K 39/4637, A61K 39/464401, A61K 39/464406 and A61K 2239/00 - A61K 2239/59.

All groups listed in this Warning should be considered in order to perform a complete search.

M A61K 39/001107

- • • • • {Fibroblast growth factor receptors [FGFR]}

WARNING

Group A61K 39/001107 is impacted by reclassification into groups A61K 39/46 - A61K 39/4637, A61K 39/464401, A61K 39/464407 and A61K 2239/00 - A61K 2239/59.

All groups listed in this Warning should be considered in order to perform a complete search.

M A61K 39/001108 {Platelet-derived growth factor receptors [PDGFR]}

WARNING

Group A61K 39/001108 is impacted by reclassification into groups A61K 39/46 - A61K 39/4637, A61K 39/464401, A61K 39/464408 and A61K 2239/00 - A61K 2239/59.

All groups listed in this Warning should be considered in order to perform a complete search.

M A61K 39/001109 {Vascular endothelial growth factor receptors [VEGFR]}

WARNING

Group A61K 39/001109 is impacted by reclassification into groups A61K 39/46 - A61K 39/4637, A61K 39/464401, A61K 39/464409 and A61K 2239/00 - A61K 2239/59.

All groups listed in this Warning should be considered in order to perform a complete search.

M A61K 39/00111 {Hepatocyte growth factor receptor [HGFR or c-met]}

WARNING

Group A61K 39/00111 is impacted by reclassification into groups A61K 39/46 - A61K 39/4637, A61K 39/464401, A61K 39/46441 and A61K 2239/00 - A61K 2239/59.

All groups listed in this Warning should be considered in order to perform a complete search.

M A61K 39/001111 {Immunoglobulin superfamily}

WARNING

Group A61K 39/001111 is impacted by reclassification into groups A61K 39/46 - A61K 39/4637, A61K 39/464401, A61K 39/464411 and A61K 2239/00 - A61K 2239/59.

All groups listed in this Warning should be considered in order to perform a complete search.

M A61K 39/001112 {CD19 or B4}

WARNING

Group A61K 39/001112 is impacted by reclassification into groups A61K 39/46 - A61K 39/4637, A61K 39/464401, A61K 39/464412 and A61K 2239/00 - A61K 2239/59.

All groups listed in this Warning should be considered in order to perform a complete search.

M A61K 39/001113 {CD22, BL-CAM, siglec-2 or sialic acid- binding Ig-related lectin 2}

WARNING

Group A61K 39/001113 is impacted by reclassification into groups A61K 39/46 - A61K 39/4637, A61K 39/464401, A61K 39/464413 and A61K 2239/00 - A61K 2239/59.

All groups listed in this Warning should be considered in order to perform a complete search.

M A61K 39/001114 {CD74, Ii, MHC class II invariant chain or MHC class II gamma chain}

WARNING

Group A61K 39/001114 is impacted by reclassification into groups A61K 39/46 - A61K 39/4637, A61K 39/464401, A61K 39/464414 and A61K 2239/00 - A61K 2239/59.

All groups listed in this Warning should be considered in order to perform a complete search.

M A61K 39/001116 . . . {Receptors for cytokines}

WARNING

Group A61K 39/001116 is impacted by reclassification into groups A61K 39/46 - A61K 39/4637, A61K 39/464401, A61K 39/464416 and A61K 2239/00 - A61K 2239/59.

All groups listed in this Warning should be considered in order to perform a complete search.

M A61K 39/001117 . . . {Receptors for tumor necrosis factors [TNF], e.g. lymphotoxin receptor [LTR] or CD30}

WARNING

Group A61K 39/001117 is impacted by reclassification into groups A61K 39/46 - A61K 39/4637, A61K 39/464401, A61K 39/464417 and A61K 2239/00 - A61K 2239/59.

All groups listed in this Warning should be considered in order to perform a complete search.

M A61K 39/001118 . . . {Receptors for colony stimulating factors [CSF]}

WARNING

Group A61K 39/001118 is impacted by reclassification into groups A61K 39/46 - A61K 39/4637, A61K 39/464401, A61K 39/464418 and A61K 2239/00 - A61K 2239/59.

All groups listed in this Warning should be considered in order to perform a complete search.

M A61K 39/001119 . . . {Receptors for interleukins [IL]}

WARNING

Group A61K 39/001119 is impacted by reclassification into groups A61K 39/46 - A61K 39/4637, A61K 39/464401, A61K 39/464419 and A61K 2239/00 - A61K 2239/59.

All groups listed in this Warning should be considered in order to perform a complete search.

M A61K 39/00112 . . . {Receptors for interferons [IFN]}

WARNING

Group A61K 39/00112 is impacted by reclassification into groups A61K 39/46 - A61K 39/4637, A61K 39/464401, A61K 39/46442 and A61K 2239/00 - A61K 2239/59.

All groups listed in this Warning should be considered in order to perform a complete search.

M A61K 39/001121 . . . {Receptors for chemokines}

WARNING

Group A61K 39/001121 is impacted by reclassification into groups A61K 39/46 - A61K 39/4637, A61K 39/464401, A61K 39/464421 and A61K 2239/00 - A61K 2239/59.

All groups listed in this Warning should be considered in order to perform a complete search.

M A61K 39/001122 . . . {Ephrin Receptors [Eph]}

WARNING

Group A61K 39/001122 is impacted by reclassification into groups A61K 39/46 - A61K 39/4637, A61K 39/464401, A61K 39/464422 and A61K 2239/00 - A61K 2239/59.

All groups listed in this Warning should be considered in order to perform a complete search.

M A61K 39/001124 . . . {CD20}

WARNING

Group A61K 39/001124 is impacted by reclassification into groups A61K 39/46 - A61K 39/4637, A61K 39/464401, A61K 39/464424, A61K 2239/00 - A61K 2239/59.

All groups listed in this Warning should be considered in order to perform a complete search.

M A61K 39/001126 . . . {CD38 not IgG}

WARNING

Group A61K 39/001126 is impacted by reclassification into groups A61K 39/46 - A61K 39/4637, A61K 39/464401, A61K 39/464426, A61K 2239/00 - A61K 2239/59.

All groups listed in this Warning should be considered in order to perform a complete search.

M A61K 39/001128 . . . {CD44 not IgG}

WARNING

Group A61K 39/001128 is impacted by reclassification into groups A61K 39/46 - A61K 39/4637, A61K 39/464401, A61K 39/464428, A61K 2239/00 - A61K 2239/59.

All groups listed in this Warning should be considered in order to perform a complete search.

M A61K 39/001129 . . . {Molecules with a "CD" designation not provided for elsewhere}

WARNING

Group A61K 39/001129 is impacted by reclassification into groups A61K 39/46 - A61K 39/4637, A61K 39/464401, A61K 39/464429, A61K 2239/00 - A61K 2239/59.

All groups listed in this Warning should be considered in order to perform a complete search.

M A61K 39/00113 . . . {Growth factors}

WARNING

Group A61K 39/00113 is impacted by reclassification into groups A61K 39/46 - A61K 39/4637, A61K 39/464401, A61K 39/46443, A61K 2239/00 - A61K 2239/59.

All groups listed in this Warning should be considered in order to perform a complete search.

M A61K 39/001131 . . . {Epidermal growth factor [EGF]}

WARNING

Group A61K 39/001131 is impacted by reclassification into groups A61K 39/46 - A61K 39/4637, A61K 39/464401, A61K 39/464431, A61K 2239/00 - A61K 2239/59.

All groups listed in this Warning should be considered in order to perform a complete search.

M	A61K 39/001132	• • • {Fibroblast growth factors [FGF]}	<p><u>WARNING</u></p> <p>Group A61K 39/001132 is impacted by reclassification into groups A61K 39/46 - A61K 39/4637, A61K 39/464401, A61K 39/464432, A61K 2239/00 - A61K 2239/59.</p> <p>All groups listed in this Warning should be considered in order to perform a complete search.</p>
M	A61K 39/001133	• • • {Platelet-derived growth factor [PDGF]}	<p><u>WARNING</u></p> <p>Group A61K 39/001133 is impacted by reclassification into groups A61K 39/46 - A61K 39/4637, A61K 39/464401, A61K 39/464433 and A61K 2239/00 - A61K 2239/59.</p> <p>All groups listed in this Warning should be considered in order to perform a complete search.</p>
M	A61K 39/001134	• • • {Transforming growth factor [TGF]}	<p><u>WARNING</u></p> <p>Group A61K 39/001134 is impacted by reclassification into groups A61K 39/46 - A61K 39/4637, A61K 39/464401, A61K 39/464434 and A61K 2239/00 - A61K 2239/59.</p> <p>All groups listed in this Warning should be considered in order to perform a complete search.</p>
M	A61K 39/001135	• • • {Vascular endothelial growth factor [VEGF]}	<p><u>WARNING</u></p> <p>Group A61K 39/001135 is impacted by reclassification into groups A61K 39/46 - A61K 39/4637, A61K 39/464401, A61K 39/464435 and A61K 2239/00 - A61K 2239/59.</p> <p>All groups listed in this Warning should be considered in order to perform a complete search.</p>
M	A61K 39/001136	• • • {Cytokines}	<p><u>WARNING</u></p> <p>Group A61K 39/001136 is impacted by reclassification into groups A61K 39/46 - A61K 39/4637, A61K 39/464401, A61K 39/464436 and A61K 2239/00 - A61K 2239/59.</p> <p>All groups listed in this Warning should be considered in order to perform a complete search.</p>
M	A61K 39/001138	• • • {Tumor necrosis factors [TNF] or CD70}	<p><u>WARNING</u></p> <p>Group A61K 39/001138 is impacted by reclassification into groups A61K 39/46 - A61K 39/4637, A61K 39/464401, A61K 39/464438 and A61K 2239/00 - A61K 2239/59.</p> <p>All groups listed in this Warning should be considered in order to perform a complete search.</p>
M	A61K 39/001139	• • • {Colony stimulating factors [CSF]}	<p><u>WARNING</u></p> <p>Group A61K 39/001139 is impacted by reclassification into groups A61K 39/46 - A61K 39/4637, A61K 39/464401, A61K 39/464439 and A61K 2239/00 - A61K 2239/59.</p> <p>All groups listed in this Warning should be considered in order to perform a complete search.</p>

M	A61K 39/00114	<ul style="list-style-type: none"> • • • {Interleukins [IL]} <p><u>WARNING</u> Group A61K 39/00114 is impacted by reclassification into groups A61K 39/46 – A61K 39/4637, A61K 39/464401, A61K 39/46444 and A61K 2239/00 – A61K 2239/59. All groups listed in this Warning should be considered in order to perform a complete search.</p>
M	A61K 39/001141	<ul style="list-style-type: none"> • • • {Interferons [IFN]} <p><u>WARNING</u> Group A61K 39/001141 is impacted by reclassification into groups A61K 39/46 – A61K 39/4637, A61K 39/464401, A61K 39/464441 and A61K 2239/00 – A61K 2239/59. All groups listed in this Warning should be considered in order to perform a complete search.</p>
M	A61K 39/001142	<ul style="list-style-type: none"> • • • {Chemokines} <p><u>WARNING</u> Group A61K 39/001142 is impacted by reclassification into groups A61K 39/46 – A61K 39/4637, A61K 39/464401, A61K 39/464442 and A61K 2239/00 – A61K 2239/59. All groups listed in this Warning should be considered in order to perform a complete search.</p>
M	A61K 39/001144	<ul style="list-style-type: none"> • • • {Hormones, e.g. calcitonin} <p><u>WARNING</u> Group A61K 39/001144 is impacted by reclassification into groups A61K 39/46 – A61K 39/4637, A61K 39/464401, A61K 39/464444 and A61K 2239/00 – A61K 2239/59. All groups listed in this Warning should be considered in order to perform a complete search.</p>
M	A61K 39/001148	<ul style="list-style-type: none"> • • • {Regulators of development} <p><u>WARNING</u> Group A61K 39/001148 is impacted by reclassification into groups A61K 39/46 – A61K 39/4637, A61K 39/464401, A61K 39/464448 and A61K 2239/00 – A61K 2239/59. All groups listed in this Warning should be considered in order to perform a complete search.</p>
M	A61K 39/001149	<ul style="list-style-type: none"> • • • {Cell cycle regulated proteins, e.g. cyclin, CDC, CDK or INK-CCR} <p><u>WARNING</u> Group A61K 39/001149 is impacted by reclassification into groups A61K 39/46 – A61K 39/4637, A61K 39/464401, A61K 39/464449 and A61K 2239/00 – A61K 2239/59. All groups listed in this Warning should be considered in order to perform a complete search.</p>
M	A61K 39/00115	<ul style="list-style-type: none"> • • • {Apoptosis related proteins, e.g. survivin or livin} <p><u>WARNING</u> Group A61K 39/00115 is impacted by reclassification into groups A61K 39/46 – A61K 39/4637, A61K 39/464401, A61K 39/46445, A61K 2239/00 – A61K 2239/10 and A61K 2239/59. All groups listed in this Warning should be considered in order to perform a complete search.</p>

M A61K 39/001151 {p53}

WARNING

Group A61K 39/001151 is impacted by reclassification into groups A61K 39/46 - A61K 39/4637, A61K 39/464401, A61K 39/464451 and A61K 2239/00 - A61K 2239/59.

All groups listed in this Warning should be considered in order to perform a complete search.

M A61K 39/001152 . . . {Transcription factors, e.g. SOX or c-MYC}

WARNING

Group A61K 39/001152 is impacted by reclassification into groups A61K 39/46 - A61K 39/4637, A61K 39/464401, A61K 39/464452 and A61K 2239/00 - A61K 2239/59.

All groups listed in this Warning should be considered in order to perform a complete search.

M A61K 39/001153 {Wilms tumor 1 [WT1]}

WARNING

Group A61K 39/001153 is impacted by reclassification into groups A61K 39/46 - A61K 39/4637, A61K 39/464401, A61K 39/464453 and A61K 2239/00 - A61K 2239/59.

All groups listed in this Warning should be considered in order to perform a complete search.

M A61K 39/001154 . . . {Enzymes}

WARNING

Group A61K 39/001154 is impacted by reclassification into groups A61K 39/46 - A61K 39/4637, A61K 39/464401, A61K 39/464454 and A61K 2239/00 - A61K 2239/59.

All groups listed in this Warning should be considered in order to perform a complete search.

M A61K 39/001156 {Tyrosinase and tyrosinase related proteinases [TRP-1 or TRP-2]}

WARNING

Group A61K 39/001156 is impacted by reclassification into groups A61K 39/46 - A61K 39/4637, A61K 39/464401, A61K 39/464456 and A61K 2239/00 - A61K 2239/59.

All groups listed in this Warning should be considered in order to perform a complete search.

M A61K 39/001157 {Telomerase or TERT [telomerase reverse transcriptase]}

WARNING

Group A61K 39/001157 is impacted by reclassification into groups A61K 39/46 - A61K 39/4637, A61K 39/464401, A61K 39/464457 and A61K 2239/00 - A61K 2239/59.

All groups listed in this Warning should be considered in order to perform a complete search.

M A61K 39/001158 {Proteinases}

WARNING

Group A61K 39/001158 is impacted by reclassification into groups A61K 39/46 - A61K 39/4637, A61K 39/464401, A61K 39/464458 and A61K 2239/00 - A61K 2239/59.

All groups listed in this Warning should be considered in order to perform a complete search.

M A61K 39/001159 {Matrix metalloproteinases [MMP]}

WARNING

Group A61K 39/001159 is impacted by reclassification into groups A61K 39/46 - A61K 39/4637, A61K 39/464401, A61K 39/464459 and A61K 2239/00 - A61K 2239/59.

All groups listed in this Warning should be considered in order to perform a complete search.

M A61K 39/00116 {Serine proteases, e.g. kallikrein}

WARNING

Group A61K 39/00116 is impacted by reclassification into groups A61K 39/46 - A61K 39/4637, A61K 39/464401, A61K 39/46446 and A61K 2239/00 - A61K 2239/59.

All groups listed in this Warning should be considered in order to perform a complete search.

M A61K 39/001161 {Caspases}

WARNING

Group A61K 39/001161 is impacted by reclassification into groups A61K 39/46 - A61K 39/4637, A61K 39/464401, A61K 39/464461 and A61K 2239/00 - A61K 2239/59.

All groups listed in this Warning should be considered in order to perform a complete search.

M A61K 39/001162 {Kinases, e.g. Raf or Src}

WARNING

Group A61K 39/001162 is impacted by reclassification into groups A61K 39/46 - A61K 39/4637, A61K 39/464401, A61K 39/464462 and A61K 2239/00 - A61K 2239/59.

All groups listed in this Warning should be considered in order to perform a complete search.

M A61K 39/001163 {Phosphatases}

WARNING

Group A61K 39/001163 is impacted by reclassification into groups A61K 39/46 - A61K 39/4637, A61K 39/464401, A61K 39/464463 and A61K 2239/00 - A61K 2239/59.

All groups listed in this Warning should be considered in order to perform a complete search.

M A61K 39/001164 {GTPases, e.g. Ras or Rho}

WARNING

Group A61K 39/001164 is impacted by reclassification into groups A61K 39/46 - A61K 39/4637, A61K 39/464401, A61K 39/464464 and A61K 2239/00 - A61K 2239/59.

All groups listed in this Warning should be considered in order to perform a complete search.

M A61K 39/001166 . . . {Adhesion molecules, e.g. NRCAM, EpCAM or cadherins}

WARNING

Group A61K 39/001166 is impacted by reclassification into groups A61K 39/46 - A61K 39/4637, A61K 39/464401, A61K 39/464466 and A61K 2239/00 - A61K 2239/59.

All groups listed in this Warning should be considered in order to perform a complete search.

M	A61K 39/001168	<ul style="list-style-type: none"> • • • {Mesothelin [MSLN]} <p><u>WARNING</u> Group A61K 39/001168 is impacted by reclassification into groups A61K 39/46 – A61K 39/4637, A61K 39/464401, A61K 39/464468 and A61K 2239/00 – A61K 2239/59. All groups listed in this Warning should be considered in order to perform a complete search.</p>
M	A61K 39/001169	<ul style="list-style-type: none"> • • • {Tumor associated carbohydrates} <p><u>WARNING</u> Group A61K 39/001169 is impacted by reclassification into groups A61K 39/46 – A61K 39/4637, A61K 39/464401, A61K 39/464469 and A61K 2239/00 – A61K 2239/59. All groups listed in this Warning should be considered in order to perform a complete search.</p>
M	A61K 39/00117	<ul style="list-style-type: none"> • • • {Mucins, e.g. MUC-1} <p><u>WARNING</u> Group A61K 39/00117 is impacted by reclassification into groups A61K 39/46 – A61K 39/4637, A61K 39/464401, A61K 39/46447 and A61K 2239/00 – A61K 2239/59. All groups listed in this Warning should be considered in order to perform a complete search.</p>
M	A61K 39/001171	<ul style="list-style-type: none"> • • • {Gangliosides, e.g. GM2, GD2 or GD3} <p><u>WARNING</u> Group A61K 39/001171 is impacted by reclassification into groups A61K 39/46 – A61K 39/4637, A61K 39/464401, A61K 39/464471 and A61K 2239/00 – A61K 2239/59. All groups listed in this Warning should be considered in order to perform a complete search.</p>
M	A61K 39/001172	<ul style="list-style-type: none"> • • • {Sialyl-Thomson-nouvelle antigen [sTn]} <p><u>WARNING</u> Group A61K 39/001172 is impacted by reclassification into groups A61K 39/46 – A61K 39/4637, A61K 39/464401, A61K 39/464472 and A61K 2239/00 – A61K 2239/59. All groups listed in this Warning should be considered in order to perform a complete search.</p>
M	A61K 39/001173	<ul style="list-style-type: none"> • • • {Globo-H} <p><u>WARNING</u> Group A61K 39/001173 is impacted by reclassification into groups A61K 39/46 – A61K 39/4637, A61K 39/464401, A61K 39/464473 and A61K 2239/00 – A61K 2239/59. All groups listed in this Warning should be considered in order to perform a complete search.</p>
M	A61K 39/001174	<ul style="list-style-type: none"> • • • {Proteoglycans, e.g. glypican, brevican or CSPG4} <p><u>WARNING</u> Group A61K 39/001174 is impacted by reclassification into groups A61K 39/46 – A61K 39/4637, A61K 39/464401, A61K 39/464474 and A61K 2239/00 – A61K 2239/59. All groups listed in this Warning should be considered in order to perform a complete search.</p>

M	A61K 39/001176	<ul style="list-style-type: none"> • • • {Heat shock proteins} <p><u>WARNING</u> Group A61K 39/001176 is impacted by reclassification into groups A61K 39/46 – A61K 39/4637, A61K 39/464401, A61K 39/464476 and A61K 2239/00 – A61K 2239/59. All groups listed in this Warning should be considered in order to perform a complete search.</p>
M	A61K 39/001178	<ul style="list-style-type: none"> • • • {Tumor rejection antigen precursor [TRAP]} <p><u>WARNING</u> Group A61K 39/001178 is impacted by reclassification into groups A61K 39/46 – A61K 39/4637, A61K 39/464401, A61K 39/464478 and A61K 2239/00 – A61K 2239/59. All groups listed in this Warning should be considered in order to perform a complete search.</p>
M	A61K 39/00118	<ul style="list-style-type: none"> • • • {from embryonic or fetal origin} <p><u>WARNING</u> Group A61K 39/00118 is impacted by reclassification into groups A61K 39/46 – A61K 39/4637, A61K 39/464401, A61K 39/46448 and A61K 2239/00 – A61K 2239/59. All groups listed in this Warning should be considered in order to perform a complete search.</p>
M	A61K 39/001181	<ul style="list-style-type: none"> • • • • {Alpha-feto protein} <p><u>WARNING</u> Group A61K 39/001181 is impacted by reclassification into groups A61K 39/46 – A61K 39/4637, A61K 39/464401, A61K 39/464481 and A61K 2239/00 – A61K 2239/59. All groups listed in this Warning should be considered in order to perform a complete search.</p>
M	A61K 39/001182	<ul style="list-style-type: none"> • • • • {Carcinoembryonic antigen [CEA]} <p><u>WARNING</u> Group A61K 39/001182 is impacted by reclassification into groups A61K 39/46 – A61K 39/4637, A61K 39/464401, A61K 39/464482 and A61K 2239/00 – A61K 2239/59. All groups listed in this Warning should be considered in order to perform a complete search.</p>
M	A61K 39/001184	<ul style="list-style-type: none"> • • • {Cancer testis antigens, e.g. SSX, BAGE, GAGE or SAGE} <p><u>WARNING</u> Group A61K 39/001184 is impacted by reclassification into groups A61K 39/46 – A61K 39/4637, A61K 39/464401, A61K 39/464484 and A61K 2239/00 – A61K 2239/59. All groups listed in this Warning should be considered in order to perform a complete search.</p>
M	A61K 39/001186	<ul style="list-style-type: none"> • • • • {MAGE} <p><u>WARNING</u> Group A61K 39/001186 is impacted by reclassification into groups A61K 39/46 – A61K 39/4637, A61K 39/464401, A61K 39/464486 and A61K 2239/00 – A61K 2239/59. All groups listed in this Warning should be considered in order to perform a complete search.</p>

M A61K 39/001188 . . . {NY-ESO}

WARNING

Group A61K 39/001188 is impacted by reclassification into groups A61K 39/46 - A61K 39/4637, A61K 39/464401, A61K 39/464488 and A61K 2239/00 - A61K 2239/59.

All groups listed in this Warning should be considered in order to perform a complete search.

M A61K 39/001189 . . . {PRAME}

WARNING

Group A61K 39/001189 is impacted by reclassification into groups A61K 39/46 - A61K 39/4637, A61K 39/464401, A61K 39/464489 and A61K 2239/00 - A61K 2239/59.

All groups listed in this Warning should be considered in order to perform a complete search.

M A61K 39/00119 . . {Melanoma antigens}

WARNING

Group A61K 39/00119 is impacted by reclassification into groups A61K 39/46 - A61K 39/4637, A61K 39/464401, A61K 39/46449 and A61K 2239/00 - A61K 2239/59.

All groups listed in this Warning should be considered in order to perform a complete search.

M A61K 39/001191 . . . {Melan-A/MART}

WARNING

Group A61K 39/001191 is impacted by reclassification into groups A61K 39/46 - A61K 39/4637, A61K 39/464401, A61K 39/464491 and A61K 2239/00 - A61K 2239/59.

All groups listed in this Warning should be considered in order to perform a complete search.

M A61K 39/001192 . . . {Glycoprotein 100 [Gp100]}

WARNING

Group A61K 39/001192 is impacted by reclassification into groups A61K 39/46 - A61K 39/4637, A61K 39/464401, A61K 39/464492 and A61K 2239/00 - A61K 2239/59.

All groups listed in this Warning should be considered in order to perform a complete search.

M A61K 39/001193 . . . {Prostate associated antigens e.g. Prostate stem cell antigen [PSCA]; Prostate carcinoma tumor antigen [PCTA]; PAP or PSGR}

WARNING

Group A61K 39/001193 is impacted by reclassification into groups A61K 39/46 - A61K 39/4637, A61K 39/464401, A61K 39/464493 and A61K 2239/00 - A61K 2239/59.

All groups listed in this Warning should be considered in order to perform a complete search.

M A61K 39/001194 . . . {Prostate specific antigen [PSA]}

WARNING

Group A61K 39/001194 is impacted by reclassification into groups A61K 39/46 - A61K 39/4637, A61K 39/464401, A61K 39/464494 and A61K 2239/00 - A61K 2239/59.

All groups listed in this Warning should be considered in order to perform a complete search.

M A61K 39/001195 . . . {Prostate specific membrane antigen [PSMA]}

WARNING

Group A61K 39/001195 is impacted by reclassification into groups A61K 39/46 -- A61K 39/4637, A61K 39/464401, A61K 39/464495 and A61K 2239/00 -- A61K 2239/59.

All groups listed in this Warning should be considered in order to perform a complete search.

M A61K 39/001196 . . . {Fusion proteins originating from gene translocation in cancer cells}

WARNING

Group A61K 39/001196 is impacted by reclassification into groups A61K 39/46 -- A61K 39/4637, A61K 39/464401, A61K 39/464496 and A61K 2239/00 -- A61K 2239/59.

All groups listed in this Warning should be considered in order to perform a complete search.

M A61K 39/001197 . . . {Breakpoint cluster region-abelson tyrosine kinase [BCR-ABL]}

WARNING

Group A61K 39/001197 is impacted by reclassification into groups A61K 39/46 -- A61K 39/4637, A61K 39/464401, A61K 39/464497 and A61K 2239/00 -- A61K 2239/59.

All groups listed in this Warning should be considered in order to perform a complete search.

M A61K 39/001198 . . . {Pml-RARalpha}

WARNING

Group A61K 39/001198 is impacted by reclassification into groups A61K 39/46 -- A61K 39/4637, A61K 39/464401, A61K 39/464498 and A61K 2239/00 -- A61K 2239/59.

All groups listed in this Warning should be considered in order to perform a complete search.

Project: RP12360 (A61K)

D A61K 39/46 . {Cellular immunotherapy}

NOTE

{In this group, C-Sets are used for classification. The detailed information about the C-Sets construction and the associated syntax rules are found in the Definitions of A61K 39/46.}

WARNING

Group A61K 39/46 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/00 -- A61K 39/001198, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.

All groups listed in this Warning should be considered in order to perform a complete search.

<administratively transferred to [A61K 40/00](#)>

- D A61K 39/461
- {characterised by the cell type used}
- WARNING
Groups A61K 39/461 – A61K 39/4615 are incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/0011 – A61K 39/001198, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646. All groups listed in this Warning should be considered in order to perform a complete search.
- <administratively transferred to [A61K 40/10](#)>
- D A61K 39/4611
- • {T-cells, e.g. tumor infiltrating lymphocytes [TIL], lymphokine-activated killer cells [LAK] or regulatory T cells [Treg]}
- <administratively transferred to [A61K 40/11](#)>
- D A61K 39/4612
- • {B-cells}
- <administratively transferred to [A61K 40/13](#)>
- D A61K 39/4613
- • {Natural-killer cells [NK or NK-T]}
- <administratively transferred to [A61K 40/15](#)>
- D A61K 39/4614
- • {Monocytes; Macrophages}
- <administratively transferred to [A61K 40/17](#)>
- D A61K 39/4615
- • {Dendritic cells}
- <administratively transferred to [A61K 40/19](#)>
- D A61K 39/462
- {characterized by the effect or the function of the cells}
- WARNING
Groups A61K 39/462, A61K 39/4621, and A61K 39/4622 are incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/0011 – A61K 39/001198, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646. All groups listed in this Warning should be considered in order to perform a complete search.
- <administratively transferred to [A61K 40/20](#)>
- D A61K 39/4621
- • {immunosuppressive or immunotolerising}
- <administratively transferred to [A61K 40/22](#)>
- D A61K 39/4622
- • {Antigen-presenting cells}
- <administratively transferred to [A61K 40/24](#)>
- D A61K 39/463
- {characterised by recombinant expression}
- WARNING
Groups A61K 39/463 – A61K 39/4637 are incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/0011 – A61K 39/001198, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646. All groups listed in this Warning should be considered in order to perform a complete search.
- <administratively transferred to [A61K 40/30](#)>
- D A61K 39/4631
- • {Chimeric Antigen Receptors [CAR]}
- <administratively transferred to [A61K 40/31](#)>

- D A61K 39/4632 . . . {T-cell receptors [TCR]; antibody T-cell receptor constructs}
<administratively transferred to [A61K 40/32](#)>
- D A61K 39/4633 . . . {Antibodies or T cell engagers}
<administratively transferred to [A61K 40/33](#)>
- D A61K 39/4634 . . . {Antigenic peptides; polypeptides}
<administratively transferred to [A61K 40/34](#)>
- D A61K 39/4635 . . . {Cytokines}
<administratively transferred to [A61K 40/35](#)>
- D A61K 39/4636 . . . {Immune checkpoint inhibitors}
<administratively transferred to [A61K 40/36](#)>
- D A61K 39/4637 . . . {Other peptides or polypeptides}
<administratively transferred to [A61K 40/30](#)>
- D A61K 39/464 . . . {characterised by the antigen targeted or presented}
- WARNING**
Groups A61K 39/464 -- A61K 39/46484 are incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.
All groups listed in this Warning should be considered in order to perform a complete search.
- <administratively transferred to [A61K 40/40](#)>
- D A61K 39/4641 . . . {Fungal antigens, e.g. Trichophyton, Aspergillus or Candida}
<administratively transferred to [A61K 40/44](#)>
- D A61K 39/4642 . . . {Invertebrate antigens}
<administratively transferred to [A61K 40/405](#)>
- D A61K 39/4643 . . . {Vertebrate antigens}
<administratively transferred to [A61K 40/41](#)>
- D A61K 39/46431 {Contraceptive or sex hormones}
<administratively transferred to [A61K 40/412](#)>
- D A61K 39/46432 {Nervous system antigens}
<administratively transferred to [A61K 40/414](#)>
- D A61K 39/46433 {Antigens related to auto-immune diseases; Preparations to induce self-tolerance}
<administratively transferred to [A61K 40/416](#)>
- D A61K 39/46434 {Antigens related to induction of tolerance to non-self}
<administratively transferred to [A61K 40/418](#)>
- D A61K 39/4644 {Cancer antigens}
- WARNING**
Groups A61K 39/4644 and A61K 39/464499 are incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/0011, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.

All groups listed in this Warning should be considered in order to perform a complete search.

<administratively transferred to [A61K 40/42](#)>

D A61K 39/464401 {Neoantigens}

WARNING

Group A61K 39/464401 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/0011–A61K 39/001198, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.

All groups listed in this Warning should be considered in order to perform a complete search.

<administratively transferred to [A61K 40/4201](#)>

D A61K 39/464402 {Receptors, cell surface antigens or cell surface determinants}

WARNING

Group A61K 39/464402 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/001102, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.

All groups listed in this Warning should be considered in order to perform a complete search.

<administratively transferred to [A61K 40/4202](#)>

D A61K 39/464403 {Receptors for growth factors}

WARNING

Group A61K 39/464403 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/001103, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.

All groups listed in this Warning should be considered in order to perform a complete search.

<administratively transferred to [A61K 40/4203](#)>

D A61K 39/464404 {Epidermal growth factor receptors [EGFR]}

WARNING

Group A61K 39/464404 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/001104, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.

All groups listed in this Warning should be considered in order to perform a complete search.

<administratively transferred to [A61K 40/4204](#)>

D A61K 39/464406 {Her-2/neu/ErbB2, Her-3/ErbB3 or Her-4/ ErbB4}

WARNING

Group A61K 39/464406 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/001106, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156,

~~A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636,
C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064,
C12N 5/0645 and C12N 5/0646.~~

All groups listed in this Warning should be considered in order to perform a complete search.

<administratively transferred to [A61K 40/4205](#)>

D A61K 39/464407 {Fibroblast growth factor receptors [FGFR]}

WARNING

Group A61K 39/464407 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/001107, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.

All groups listed in this Warning should be considered in order to perform a complete search.

<administratively transferred to [A61K 40/4206](#)>

D A61K 39/464408 {Platelet-derived growth factor receptors [PDGFR]}

WARNING

Group A61K 39/464408 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/001108, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.

All groups listed in this Warning should be considered in order to perform a complete search.

<administratively transferred to [A61K 40/4207](#)>

D A61K 39/464409 {Vascular endothelial growth factor receptors [VEGFR]}

WARNING

Group A61K 39/464409 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/001109, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.

All groups listed in this Warning should be considered in order to perform a complete search.

<administratively transferred to [A61K 40/4208](#)>

D A61K 39/46441 {Hepatocyte growth factor receptor [HGFR or c-met]}

WARNING

Group A61K 39/46441 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/00111, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.

All groups listed in this Warning should be considered in order to perform a complete search.

<administratively transferred to [A61K 40/4209](#)>

- D A61K 39/464411 {Immunoglobulin-superfamily}
- WARNING
Group A61K 39/464411 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/001111, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.
All groups listed in this Warning should be considered in order to perform a complete search.
- <administratively transferred to [A61K 40/421](#)>
- D A61K 39/464412 {CD19 or B4}
- WARNING
Group A61K 39/464412 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/001112, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.
All groups listed in this Warning should be considered in order to perform a complete search.
- <administratively transferred to [A61K 40/4211](#)>
- D A61K 39/464413 {CD22, BL-CAM, siglec-2 or sialic acid binding Ig-related lectin 2}
- WARNING
Group A61K 39/464413 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/001113, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.
All groups listed in this Warning should be considered in order to perform a complete search.
- <administratively transferred to [A61K 40/4212](#)>
- D A61K 39/464414 {CD74, Ii, MHC class II invariant chain or MHC class II gamma chain}
- WARNING
Group A61K 39/464414 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/001114, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.
All groups listed in this Warning should be considered in order to perform a complete search.
- <administratively transferred to [A61K 40/4213](#)>
- D A61K 39/464416 {Receptors for cytokines}
- WARNING
Group A61K 39/464416 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/001116, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636,

~~C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064,
C12N 5/0645 and C12N 5/0646.~~

All groups listed in this Warning should be considered in order to perform a complete search.

<administratively transferred to [A61K 40/4214](#)>

- D A61K 39/464417 {Receptors for tumor necrosis factors [TNF], e.g. lymphotoxin receptor [LTR], CD30}

WARNING

Group A61K 39/464417 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/001117, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.

All groups listed in this Warning should be considered in order to perform a complete search.

<administratively transferred to [A61K 40/4215](#)>

- D A61K 39/464418 {Receptors for colony stimulating factors [CSF]}

WARNING

Group A61K 39/464418 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/001118, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.

All groups listed in this Warning should be considered in order to perform a complete search.

<administratively transferred to [A61K 40/4216](#)>

- D A61K 39/464419 {Receptors for interleukins [IL]}

WARNING

Group A61K 39/464419 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/001119, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.

All groups listed in this Warning should be considered in order to perform a complete search.

<administratively transferred to [A61K 40/4217](#)>

- D A61K 39/46442 {Receptors for interferons [IFN]}

WARNING

Group A61K 39/46442 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/00112, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.

All groups listed in this Warning should be considered in order to perform a complete search.

<administratively transferred to [A61K 40/4218](#)>

- D A61K 39/464421 {Receptors for chemokines}
- WARNING
 Group A61K 39/464421 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/001121, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.
 All groups listed in this Warning should be considered in order to perform a complete search.
- <administratively transferred to [A61K 40/4219](#)>
- D A61K 39/464422 {Ephrin Receptors [Eph]}
- WARNING
 Group A61K 39/464422 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/001122, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.
 All groups listed in this Warning should be considered in order to perform a complete search.
- <administratively transferred to [A61K 40/422](#)>
- D A61K 39/464424 {CD20}
- WARNING
 Group A61K 39/464424 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/001124, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.
 All groups listed in this Warning should be considered in order to perform a complete search.
- <administratively transferred to [A61K 40/4221](#)>
- D A61K 39/464426 {CD38 not IgG}
- WARNING
 Group A61K 39/464426 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/001126, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.
 All groups listed in this Warning should be considered in order to perform a complete search.
- <administratively transferred to [A61K 40/4222](#)>
- D A61K 39/464428 {CD44 not IgG}
- WARNING
 Group A61K 39/464428 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/001128, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.

All groups listed in this Warning should be considered in order to perform a complete search.

<administratively transferred to [A61K 40/4223](#)>

D A61K 39/464429 {Molecules with a "CD" designation not provided for elsewhere}

WARNING

Group A61K 39/464429 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/001129, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.

All groups listed in this Warning should be considered in order to perform a complete search.

<administratively transferred to [A61K 40/4224](#)>

D A61K 39/46443 {Growth factors}

WARNING

Group A61K 39/46443 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/00113, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.

All groups listed in this Warning should be considered in order to perform a complete search.

<administratively transferred to [A61K 40/4225](#)>

D A61K 39/464431 {Epidermal growth factor [EGF]}

WARNING

Group A61K 39/464431 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/001131, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.

All groups listed in this Warning should be considered in order to perform a complete search.

<administratively transferred to [A61K 40/4226](#)>

D A61K 39/464432 {Fibroblast growth factors [FGF]}

WARNING

Group A61K 39/464432 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/001132, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.

All groups listed in this Warning should be considered in order to perform a complete search.

<administratively transferred to [A61K 40/4227](#)>

D A61K 39/464433 {Platelet-derived growth factor [PDGF]}

WARNING

Group A61K 39/464433 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/001133, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156,

A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636,
C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064,
C12N 5/0645 and C12N 5/0646.

All groups listed in this Warning should be considered in order to
perform a complete search.

<administratively transferred to [A61K 40/4228](#)>

D A61K 39/464434 {Transforming growth factor [TGF]}

WARNING

Group A61K 39/464434 is incomplete pending reclassification of
documents from groups A61K 35/15, A61K 35/17, A61K 39/001134,
A61K 2039/5152, A61K 2039/5154, A61K 2039/5156,
A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636,
C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064,
C12N 5/0645 and C12N 5/0646.

All groups listed in this Warning should be considered in order to
perform a complete search.

<administratively transferred to [A61K 40/4229](#)>

D A61K 39/464435 {Vascular endothelial growth factor [VEGF]}

WARNING

Group A61K 39/464435 is incomplete pending reclassification of
documents from groups A61K 35/15, A61K 35/17, A61K 39/001135,
A61K 2039/5152, A61K 2039/5154, A61K 2039/5156,
A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636,
C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064,
C12N 5/0645 and C12N 5/0646.

All groups listed in this Warning should be considered in order to
perform a complete search.

<administratively transferred to [A61K 40/423](#)>

D A61K 39/464436 {Cytokines}

WARNING

Group A61K 39/464436 is incomplete pending reclassification of
documents from groups A61K 35/15, A61K 35/17, A61K 39/001136,
A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158,
C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637,
C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and
C12N 5/0646.

All groups listed in this Warning should be considered in order to
perform a complete search.

<administratively transferred to [A61K 40/4231](#)>

D A61K 39/464438 {Tumor necrosis factors [TNF], CD70}

WARNING

Group A61K 39/464438 is incomplete pending reclassification of
documents from groups A61K 35/15, A61K 35/17, A61K 39/001138,
A61K 2039/5152, A61K 2039/5154, A61K 2039/5156,
A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636,
C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064,
C12N 5/0645 and C12N 5/0646.

All groups listed in this Warning should be considered in order to
perform a complete search.

<administratively transferred to [A61K 40/4232](#)>

- D A61K 39/464439 {Colony stimulating factors [CSF]}
- WARNING
Group A61K 39/464439 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/001139, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.
All groups listed in this Warning should be considered in order to perform a complete search.
- <administratively transferred to [A61K 40/4233](#)>
- D A61K 39/46444 {Interleukins [IL]}
- WARNING
Group A61K 39/46444 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/00114, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.
All groups listed in this Warning should be considered in order to perform a complete search.
- <administratively transferred to [A61K 40/4234](#)>
- D A61K 39/464441 {Interferons [IFN]}
- WARNING
Group A61K 39/464441 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/001141, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.
All groups listed in this Warning should be considered in order to perform a complete search.
- <administratively transferred to [A61K 40/4235](#)>
- D A61K 39/464442 {Chemokines}
- WARNING
Group A61K 39/464442 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/001142, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.
All groups listed in this Warning should be considered in order to perform a complete search.
- <administratively transferred to [A61K 40/4236](#)>
- D A61K 39/464444 {Hormones, e.g. calcitonin}
- WARNING
Group A61K 39/464444 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/001144, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.

All groups listed in this Warning should be considered in order to perform a complete search.

<administratively transferred to [A61K 40/4237](#)>

D A61K 39/464448 {Regulators of development}

WARNING

Group A61K 39/464448 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/001148, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.

All groups listed in this Warning should be considered in order to perform a complete search.

<administratively transferred to [A61K 40/4238](#)>

D A61K 39/464449 {Cell cycle regulated proteins, e.g. cyclin, CDC, CDK or INK-CCR}

WARNING

Group A61K 39/464449 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/001149, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.

All groups listed in this Warning should be considered in order to perform a complete search.

<administratively transferred to [A61K 40/4239](#)>

D A61K 39/46445 {Apoptosis related proteins, e.g. survivin or livin}

WARNING

Group A61K 39/46445 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/00115, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.

All groups listed in this Warning should be considered in order to perform a complete search.

<administratively transferred to [A61K 40/424](#)>

D A61K 39/464451 {p53}

WARNING

Group A61K 39/464451 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/001151, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.

All groups listed in this Warning should be considered in order to perform a complete search.

<administratively transferred to [A61K 40/4241](#)>

D A61K 39/464452 {Transcription factors, e.g. SOX or c-MYC}

WARNING

Group A61K 39/464452 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/001152, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158,

C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637,
C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and
C12N 5/0646.

All groups listed in this Warning should be considered in order to
perform a complete search.

<administratively transferred to [A61K 40/4242](#)>

D A61K 39/464453 {Wilms tumor 1 [WT1]}

WARNING

Group A61K 39/464453 is incomplete pending reclassification of
documents from groups A61K 35/15, A61K 35/17, A61K 39/001153,
A61K 2039/5152, A61K 2039/5154, A61K 2039/5156,
A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636,
C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064,
C12N 5/0645 and C12N 5/0646.

All groups listed in this Warning should be considered in order to
perform a complete search.

<administratively transferred to [A61K 40/4243](#)>

D A61K 39/464454 {Enzymes}

WARNING

Group A61K 39/464454 is incomplete pending reclassification of
documents from groups A61K 35/15, A61K 35/17, A61K 39/001154,
A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158,
C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637,
C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and
C12N 5/0646.

All groups listed in this Warning should be considered in order to
perform a complete search.

<administratively transferred to [A61K 40/4244](#)>

D A61K 39/464456 {Tyrosinase or tyrosinase related proteinases [TRP-1 or TRP-2]}

WARNING

Group A61K 39/464456 is incomplete pending reclassification of
documents from groups A61K 35/15, A61K 35/17, A61K 39/001156,
A61K 2039/5152, A61K 2039/5154, A61K 2039/5156,
A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636,
C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064,
C12N 5/0645 and C12N 5/0646.

All groups listed in this Warning should be considered in order to
perform a complete search.

<administratively transferred to [A61K 40/4245](#)>

D A61K 39/464457 {Telomerase or [telomerase reverse transcriptase [TERT]]}

WARNING

Group A61K 39/464457 is incomplete pending reclassification of
documents from groups A61K 35/15, A61K 35/17, A61K 39/001157,
A61K 2039/5152, A61K 2039/5154, A61K 2039/5156,
A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636,
C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064,
C12N 5/0645 and C12N 5/0646.

All groups listed in this Warning should be considered in order to
perform a complete search.

<administratively transferred to [A61K 40/4246](#)>

D A61K 39/464458 {Proteinases}

WARNING

Group A61K 39/464458 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/001158, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.

All groups listed in this Warning should be considered in order to perform a complete search.

<administratively transferred to [A61K 40/4247](#)>

D A61K 39/464459 {Matrix metalloproteinases [MMP]}

WARNING

Group A61K 39/464459 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/001159, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.

All groups listed in this Warning should be considered in order to perform a complete search.

<administratively transferred to [A61K 40/4248](#)>

D A61K 39/46446 {Serine proteases, e.g. kallikrein}

WARNING

Group A61K 39/46446 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/00116, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.

All groups listed in this Warning should be considered in order to perform a complete search.

<administratively transferred to [A61K 40/4249](#)>

D A61K 39/464461 {Caspases}

WARNING

Group A61K 39/464461 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/001161, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.

All groups listed in this Warning should be considered in order to perform a complete search.

<administratively transferred to [A61K 40/425](#)>

D A61K 39/464462 {Kinases, e.g. Raf or Src}

WARNING

Group A61K 39/464462 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/001162, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.

All groups listed in this Warning should be considered in order to perform a complete search.

<administratively transferred to [A61K 40/4251](#)>

D A61K 39/464463 {Phosphatases}

WARNING

Group A61K 39/464463 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/001163, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.

All groups listed in this Warning should be considered in order to perform a complete search.

<administratively transferred to [A61K 40/4252](#)>

D A61K 39/464464 {GTPases, e.g. Ras or Rho}

WARNING

Group A61K 39/464464 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/001164, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.

All groups listed in this Warning should be considered in order to perform a complete search.

<administratively transferred to [A61K 40/4253](#)>

D A61K 39/464466 {Adhesion molecules, e.g. NRCAM, EpCAM or cadherins}

WARNING

Group A61K 39/464466 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/001166, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.

All groups listed in this Warning should be considered in order to perform a complete search.

<administratively transferred to [A61K 40/4254](#)>

D A61K 39/464468 {Mesothelin [MSLN]}

WARNING

Group A61K 39/464468 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/001168, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.

All groups listed in this Warning should be considered in order to perform a complete search.

<administratively transferred to [A61K 40/4255](#)>

D A61K 39/464469 {Tumor associated carbohydrates}

WARNING

Group A61K 39/464469 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/001169, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158,

C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637,
C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and
C12N 5/0646.

All groups listed in this Warning should be considered in order to
perform a complete search.

<administratively transferred to [A61K 40/4256](#)>

D A61K 39/46447 {Mucins, e.g. MUC-1}

WARNING

Group A61K 39/46447 is incomplete pending reclassification of
documents from groups A61K 35/15, A61K 35/17, A61K 39/00117,
A61K 2039/5152, A61K 2039/5154, A61K 2039/5156,
A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636,
C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064,
C12N 5/0645 and C12N 5/0646.

All groups listed in this Warning should be considered in order to
perform a complete search.

<administratively transferred to [A61K 40/4257](#)>

D A61K 39/464471 {Gangliosides, e.g. GM2, GD2 or GD3}

WARNING

Group A61K 39/464471 is incomplete pending reclassification of
documents from groups A61K 35/15, A61K 35/17, A61K 39/001171,
A61K 2039/5152, A61K 2039/5154, A61K 2039/5156,
A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636,
C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064,
C12N 5/0645 and C12N 5/0646.

All groups listed in this Warning should be considered in order to
perform a complete search.

<administratively transferred to [A61K 40/4258](#)>

D A61K 39/464472 {Sialyl-Thomson-nouvelle antigen [sTn]}

WARNING

Group A61K 39/464472 is incomplete pending reclassification of
documents from groups A61K 35/15, A61K 35/17, A61K 39/001172,
A61K 2039/5152, A61K 2039/5154, A61K 2039/5156,
A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636,
C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064,
C12N 5/0645 and C12N 5/0646.

All groups listed in this Warning should be considered in order to
perform a complete search.

<administratively transferred to [A61K 40/4259](#)>

D A61K 39/464473 {Globo-H}

WARNING

Group A61K 39/464473 is incomplete pending reclassification of
documents from groups A61K 35/15, A61K 35/17, A61K 39/001173,
A61K 2039/5152, A61K 2039/5154, A61K 2039/5156,
A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636,
C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064,
C12N 5/0645 and C12N 5/0646.

All groups listed in this Warning should be considered in order to
perform a complete search.

<administratively transferred to [A61K 40/426](#)>

- D A61K 39/464474 {Proteoglycans, e.g. glypican, brevican or CSPG4}
- WARNING
Group A61K 39/464474 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/001174, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.
All groups listed in this Warning should be considered in order to perform a complete search.
- <administratively transferred to [A61K 40/4261](#)>
- D A61K 39/464476 {Heat shock proteins}
- WARNING
Group A61K 39/464476 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/001176, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.
All groups listed in this Warning should be considered in order to perform a complete search.
- <administratively transferred to [A61K 40/4262](#)>
- D A61K 39/464478 {Tumor rejection antigen precursor [TRAP]}
- WARNING
Group A61K 39/464478 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/001178, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.
All groups listed in this Warning should be considered in order to perform a complete search.
- <administratively transferred to [A61K 40/4263](#)>
- D A61K 39/46448 {from embryonic or fetal origin}
- WARNING
Group A61K 39/46448 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/00118, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.
All groups listed in this Warning should be considered in order to perform a complete search.
- <administratively transferred to [A61K 40/4264](#)>
- D A61K 39/464481 {Alpha-feto protein}
- WARNING
Group A61K 39/464481 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/001181, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.

All groups listed in this Warning should be considered in order to perform a complete search.

<administratively transferred to [A61K 40/4265](#)>

D A61K 39/464482 {Carcinoembryonic antigen [CEA]}

WARNING

Group A61K 39/464482 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/001182, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.

All groups listed in this Warning should be considered in order to perform a complete search.

<administratively transferred to [A61K 40/4266](#)>

D A61K 39/464484 {Cancer testis antigens, e.g. SSX, BAGE, GAGE or SAGE}

WARNING

Group A61K 39/464484 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/001184, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.

All groups listed in this Warning should be considered in order to perform a complete search.

<administratively transferred to [A61K 40/4267](#)>

D A61K 39/464486 {MAGE}

WARNING

Group A61K 39/464486 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/001186, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.

All groups listed in this Warning should be considered in order to perform a complete search.

<administratively transferred to [A61K 40/4268](#)>

D A61K 39/464488 {NY-ESO}

WARNING

Group A61K 39/464488 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/001188, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.

All groups listed in this Warning should be considered in order to perform a complete search.

<administratively transferred to [A61K 40/4269](#)>

D A61K 39/464489 {PRAME}

WARNING

Group A61K 39/464489 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/001189, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156,

A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.

All groups listed in this Warning should be considered in order to perform a complete search.

<administratively transferred to [A61K 40/427](#)>

D A61K 39/46449 {Melanoma antigens}

WARNING

Group A61K 39/46449 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/00119, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.

All groups listed in this Warning should be considered in order to perform a complete search.

<administratively transferred to [A61K 40/4271](#)>

D A61K 39/464491 {Melan-A/MART}

WARNING

Group A61K 39/464491 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/001191, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.

All groups listed in this Warning should be considered in order to perform a complete search.

<administratively transferred to [A61K 40/4272](#)>

D A61K 39/464492 {Glycoprotein-100 [Gp100]}

WARNING

Group A61K 39/464492 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/001192, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.

All groups listed in this Warning should be considered in order to perform a complete search.

<administratively transferred to [A61K 40/4273](#)>

D A61K 39/464493 {Prostate associated antigens e.g. Prostate stem cell antigen [PSCA]; Prostate carcinoma tumor antigen [PCTA]; Prostatic acid phosphatase [PAP]; Prostate-specific G-protein-coupled receptor [PSGR]}

WARNING

Group A61K 39/464493 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/001193, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.

All groups listed in this Warning should be considered in order to perform a complete search.

<administratively transferred to [A61K 40/4274](#)>

- D A61K 39/464494 {Prostate specific antigen [PSA]}
- WARNING
 Group A61K 39/464494 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/001194, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.
 All groups listed in this Warning should be considered in order to perform a complete search.
- <administratively transferred to [A61K 40/4275](#)>
- D A61K 39/464495 {Prostate specific membrane antigen [PSMA]}
- WARNING
 Group A61K 39/464495 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/001195, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.
 All groups listed in this Warning should be considered in order to perform a complete search.
- <administratively transferred to [A61K 40/4276](#)>
- D A61K 39/464496 {Fusion proteins originating from gene translocation in cancer cells}
- WARNING
 Group A61K 39/464496 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/001196, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.
 All groups listed in this Warning should be considered in order to perform a complete search.
- <administratively transferred to [A61K 40/4277](#)>
- D A61K 39/464497 {Breakpoint cluster region-abelson tyrosine kinase [BCR-ABL]}
- WARNING
 Group A61K 39/464497 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/001197, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.
 All groups listed in this Warning should be considered in order to perform a complete search.
- <administratively transferred to [A61K 40/4278](#)>
- D A61K 39/464498 {Pml-RARalpha}
- WARNING
 Group A61K 39/464498 is incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/001198, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646.

All groups listed in this Warning should be considered in order to perform a complete search.

- <administratively transferred to [A61K 40/4279](#)>
- D A61K 39/464499 {Undefined tumor antigens, e.g. tumor lysate or antigens targeted by cells isolated from tumor}
- <administratively transferred to [A61K 40/428](#)>
- D A61K 39/4645 {Lipids; Lipoproteins}
- <administratively transferred to [A61K 40/4285](#)>
- D A61K 39/4646 . . . {Small organic molecules e.g. cocaine or nicotine}
- <administratively transferred to [A61K 40/429](#)>
- D A61K 39/4647 . . . {Protozoa antigens}
- <administratively transferred to [A61K 40/43](#)>
- D A61K 39/464711 {Trypanosoma antigens}
- <administratively transferred to [A61K 40/432](#)>
- D A61K 39/464712 {Leishmania antigens}
- <administratively transferred to [A61K 40/434](#)>
- D A61K 39/464713 {Coccidia antigens}
- <administratively transferred to [A61K 40/436](#)>
- D A61K 39/464714 {Hemosporidia antigens, e.g. Plasmodium antigens}
- <administratively transferred to [A61K 40/438](#)>
- D A61K 39/464715 {Babesia antigens, e.g. Theileria antigens}
- <administratively transferred to [A61K 40/4385](#)>
- D A61K 39/4648 . . . {Bacterial antigens}
- <administratively transferred to [A61K 40/45](#)>
- D A61K 39/464811 {Bacterioidetes, e.g. Bacteroides, Ornithobacter or Porphyromonas}
- <administratively transferred to [A61K 40/4512](#)>
- D A61K 39/464812 {Spirochetes, e.g. Treponema, Leptospira or Borrelia}
- <administratively transferred to [A61K 40/4514](#)>
- D A61K 39/464813 {Rickettsiales, e.g. Anaplasma}
- <administratively transferred to [A61K 40/4516](#)>
- D A61K 39/464814 {Mollicutes, e.g. Mycoplasma or Erysipelothrix}
- <administratively transferred to [A61K 40/4518](#)>
- D A61K 39/464815 {Enterobacteriales, e.g. Enterobacter}
- <administratively transferred to [A61K 40/452](#)>
- D A61K 39/464816 {Yersinia}
- <administratively transferred to [A61K 40/4522](#)>
- D A61K 39/464817 {Mycobacterium, e.g. Mycobacterium tuberculosis}
- <administratively transferred to [A61K 40/4524](#)>
- D A61K 39/464818 {Corynebacterium or Propionibacterium, Actinobacteria, e.g. Actinomyces, Streptomyces, Nocardia, Bifidobacterium or Gardnerella}
- <administratively transferred to [A61K 40/4526](#)>
- D A61K 39/464819 {Bacillus}
- <administratively transferred to [A61K 40/4528](#)>

- D A61K 39/46482 . . . {Clostridium, e.g. Clostridium tetani}
<administratively transferred to [A61K 40/453](#)>
- D A61K 39/464821 . . . {Staphylococcus}
<administratively transferred to [A61K 40/4532](#)>
- D A61K 39/464822 . . . {Streptococcus}
<administratively transferred to [A61K 40/4534](#)>
- D A61K 39/464823 . . . {Lactobacillales, e.g. aerococcus, enterococcus, lactobacillus or lactococcus}
<administratively transferred to [A61K 40/4536](#)>
- D A61K 39/464824 . . . {Neisseria}
<administratively transferred to [A61K 40/4538](#)>
- D A61K 39/464825 . . . {Brucella; Bordetella, e.g. Bordetella pertussis}
<administratively transferred to [A61K 40/454](#)>
- D A61K 39/464826 . . . {Pasteurellales, e.g. Actinobacillus, Pasteurella; Haemophilus}
<administratively transferred to [A61K 40/4542](#)>
- D A61K 39/464827 . . . {Pseudomonadales, e.g. Pseudomonas}
<administratively transferred to [A61K 40/4544](#)>
- D A61K 39/464828 . . . {Moraxella}
<administratively transferred to [A61K 40/4546](#)>
- D A61K 39/464829 . . . {Delta proteobacteriales, e.g. Lawsonia; Epsilon proteobacteriales}
<administratively transferred to [A61K 40/4548](#)>
- D A61K 39/46483 . . . {Vibrio; Campylobacter}
<administratively transferred to [A61K 40/455](#)>
- D A61K 39/464831 . . . {Escherichia; Klebsiella}
<administratively transferred to [A61K 40/456](#)>
- D A61K 39/464832 . . . {Salmonella; Shigella}
<administratively transferred to [A61K 40/4562](#)>
- D A61K 39/464833 . . . {Fusobacterium}
<administratively transferred to [A61K 40/4564](#)>
- D A61K 39/464834 . . . {Polyvalent bacterial antigens}
<administratively transferred to [A61K 40/4566](#)>
- D A61K 39/464835 . . . {Chlamydiaceae, e.g. Chlamydia trachomatis or Chlamydia psittaci}
<administratively transferred to [A61K 40/4568](#)>
- D A61K 39/464838 . . . {Viral antigens}
<administratively transferred to [A61K 40/46](#)>
- D A61K 39/464839 . . . {Allergens}
<administratively transferred to [A61K 40/48](#)>
- D A61K 39/46484 . . . {from pollen}
<administratively transferred to [A61K 40/482](#)>

Project: RP10429-F (A61K)

- U A61K 2039/51 . {comprising whole cells, viruses or DNA/RNA}
- U A61K 2039/515 . {Animal cells}

M	A61K 2039/5152	<ul style="list-style-type: none"> • • • {Tumor cells} <p><u>WARNING</u> Group A61K 2039/5152 is impacted by reclassification into groups A61K 39/46 – A61K 39/46484, A61K 2239/00 – A61K 2239/59. All groups listed in this Warning should be considered in order to perform a complete search.</p>
M	A61K 2039/5154	<ul style="list-style-type: none"> • • • {Antigen presenting cells [APCs], e.g. dendritic cells or macrophages} <p><u>WARNING</u> Group A61K 2039/5154 is impacted by reclassification into groups A61K 39/46 – A61K 39/46484 and A61K 2239/00 – A61K 2239/59. All groups listed in this Warning should be considered in order to perform a complete search.</p>
M	A61K 2039/5156	<ul style="list-style-type: none"> • • • {expressing foreign proteins} <p><u>WARNING</u> Group A61K 2039/5156 is impacted by reclassification into groups A61K 39/46 – A61K 39/46484 and A61K 2239/00 – A61K 2239/59. All groups listed in this Warning should be considered in order to perform a complete search.</p>
M	A61K 2039/5158	<ul style="list-style-type: none"> • • • {Antigen-pulsed cells, e.g. T-cells} <p><u>WARNING</u> Group A61K 2039/5158 is impacted by reclassification into groups A61K 39/46, A61K 39/461 – A61K 39/46484 and A61K 2239/00 – A61K 2239/59. All groups listed in this Warning should be considered in order to perform a complete search.</p>

Project: RP12360 (A61K)

U	A61K 2039/80	• {Vaccine for a specifically defined cancer}
U	A61K 2039/892	• • {Reproductive system [uterus, ovaries, cervix, testes]}
N	A61K 40/00	<p>Cellular immunotherapy (medicinal preparations containing antigens or antibodies A61K 39/00)</p> <p><u>NOTE</u> <i>In this group, C-Sets are used for classification. The detailed information about the C-Sets construction and the associated syntax rules are found in the Definitions of A61K 40/00.</i></p>
N	A61K 40/10	• characterised by the cell type used
N	A61K 40/11	• • T-cells, e.g. tumour infiltrating lymphocytes [TIL] or regulatory T [Treg] cells; Lymphokine-activated killer [LAK] cells
N	A61K 40/13	• • B-cells
N	A61K 40/15	• • Natural-killer [NK] cells; Natural-killer T [NKT] cells
N	A61K 40/17	• • Monocytes; Macrophages
N	A61K 40/19	• • Dendritic cells
N	A61K 40/20	• characterised by the effect or the function of the cells
N	A61K 40/22	• • Immunosuppressive or immunotolerising
N	A61K 40/24	• • Antigen-presenting cells [APC]
N	A61K 40/30	• characterised by the recombinant expression of specific molecules in the cells of the immune system

N	A61K 40/31	• • Chimeric antigen receptors [CAR]
N	A61K 40/32	• • T-cell receptors [TCR]
N	A61K 40/33	• • Antibodies; T-cell engagers
N	A61K 40/34	• • Antigenic peptides
N	A61K 40/35	• • Cytokines
N	A61K 40/36	• • Immune checkpoint inhibitors
N	A61K 40/40	• characterised by antigens that are targeted or presented by cells of the immune system
N	A61K 40/405	• • {Invertebrates antigens}
N	A61K 40/41	• • Vertebrate antigens
N	A61K 40/412	• • • {Contraceptive or sex hormones}
N	A61K 40/414	• • • {Nervous system antigens}
N	A61K 40/416	• • • {Antigens related to auto-immune diseases; Preparations to induce self-tolerance}
N	A61K 40/418	• • • {Antigens related to induction of tolerance to non-self}
N	A61K 40/42	• • • Cancer antigens
N	A61K 40/4201	• • • • {Neoantigens}
N	A61K 40/4202	• • • • {Receptors, cell surface antigens or cell surface determinants}
N	A61K 40/4203	• • • • • {Receptors for growth factors}
N	A61K 40/4204	• • • • • {Epidermal growth factor receptors [EGFR]}
N	A61K 40/4205	• • • • • {Her-2/neu/ErbB2, Her-3/ErbB3 or Her 4/ ErbB4}
N	A61K 40/4206	• • • • • {Fibroblast growth factor receptors [FGFR]}
N	A61K 40/4207	• • • • • {Platelet-derived growth factor receptors [PDGFR]}
N	A61K 40/4208	• • • • • {Vascular endothelial growth factor receptors [VEGFR]}
N	A61K 40/4209	• • • • • {Hepatocyte growth factor receptor [HGFR] or c-met}
N	A61K 40/421	• • • • • {Immunoglobulin superfamily}
N	A61K 40/4211	• • • • • {CD19 or B4}
N	A61K 40/4212	• • • • • {CD22, BL-CAM, siglec-2 or sialic acid binding Ig-related lectin 2}
N	A61K 40/4213	• • • • • {CD74, Ii, MHC class II invariant chain or MHC class II gamma chain}
N	A61K 40/4214	• • • • • {Receptors for cytokines}
N	A61K 40/4215	• • • • • {Receptors for tumor necrosis factors [TNF], e.g. lymphotoxin receptor [LTR], CD30}
N	A61K 40/4216	• • • • • {Receptors for colony stimulating factors [CSF]}
N	A61K 40/4217	• • • • • {Receptors for interleukins [IL]}
N	A61K 40/4218	• • • • • {Receptors for interferons [IFN]}
N	A61K 40/4219	• • • • • {Receptors for chemokines}
N	A61K 40/422	• • • • • {Ephrin Receptors [Eph]}
N	A61K 40/4221	• • • • • {CD20}
N	A61K 40/4222	• • • • • {CD38 not IgG}
N	A61K 40/4223	• • • • • {CD44 not IgG}
N	A61K 40/4224	• • • • • {Molecules with a "CD" designation not provided for elsewhere}
N	A61K 40/4225	• • • • • {Growth factors}
N	A61K 40/4226	• • • • • {Epidermal growth factor [EGF]}
N	A61K 40/4227	• • • • • {Fibroblast growth factors [FGF]}
N	A61K 40/4228	• • • • • {Platelet-derived growth factor [PDGF]}

N	A61K 40/4229	. . . . . {Transforming growth factor [TGF]}
N	A61K 40/423	. . . . . {Vascular endothelial growth factor [VEGF]}
N	A61K 40/4231	. . . . . {Cytokines}
N	A61K 40/4232	. . . . . {Tumor necrosis factors [TNF] or CD70}
N	A61K 40/4233	. . . . . {Colony stimulating factors [CSF]}
N	A61K 40/4234	. . . . . {Interleukins [IL]}
N	A61K 40/4235	. . . . . {Interferons [IFN]}
N	A61K 40/4236	. . . . . {Chemokines}
N	A61K 40/4237	. . . . . {Hormones, e.g. calcitonin}
N	A61K 40/4238	. . . . . {Regulators of development}
N	A61K 40/4239	. . . . . {Cell cycle regulated proteins, e.g. cyclin, CDC, CDK or INK-CCR}
N	A61K 40/424	. . . . . {Apoptosis related proteins, e.g. survivin or livin}
N	A61K 40/4241	. . . . . {p53}
N	A61K 40/4242	. . . . . {Transcription factors, e.g. SOX or c-MYC}
N	A61K 40/4243	. . . . . {Wilms tumor 1 [WT1]}
N	A61K 40/4244	. . . . . {Enzymes}
N	A61K 40/4245	. . . . . {Tyrosinase or tyrosinase related proteinases [TRP-1 or TRP-2]}
N	A61K 40/4246	. . . . . {Telomerase or [telomerase reverse transcriptase [TERT]}
N	A61K 40/4247	. . . . . {Proteinases}
N	A61K 40/4248	. . . . . {Matrix metalloproteinases [MMP]}
N	A61K 40/4249	. . . . . {Serine proteases, e.g. kallikrein}
N	A61K 40/425	. . . . . {Caspases}
N	A61K 40/4251	. . . . . {Kinases, e.g. Raf or Src}
N	A61K 40/4252	. . . . . {Phosphatases}
N	A61K 40/4253	. . . . . {GTPases, e.g. Ras or Rho}
N	A61K 40/4254	. . . . . {Adhesion molecules, e.g. NRCAM, EpCAM or cadherins}
N	A61K 40/4255	. . . . . {Mesothelin [MSLN]}
N	A61K 40/4256	. . . . . {Tumor associated carbohydrates}
N	A61K 40/4257	. . . . . {Mucins, e.g. MUC-1}
N	A61K 40/4258	. . . . . {Gangliosides, e.g. GM2, GD2 or GD3}
N	A61K 40/4259	. . . . . {Sialyl-Thomson-nouvelle antigen [sTn]}
N	A61K 40/426	. . . . . {Globo-H}
N	A61K 40/4261	. . . . . {Proteoglycans, e.g. glypican, brevican or CSPG4}
N	A61K 40/4262	. . . . . {Heat shock proteins}
N	A61K 40/4263	. . . . . {Tumor rejection antigen precursor [TRAP]}
N	A61K 40/4264	. . . . . {from embryonic or fetal origin}
N	A61K 40/4265	. . . . . {Alpha-feto protein}
N	A61K 40/4266	. . . . . {Carcinoembryonic antigen [CEA]}
N	A61K 40/4267	. . . . . {Cancer testis antigens, e.g. SSX, BAGE, GAGE or SAGE}
N	A61K 40/4268	. . . . . {MAGE}
N	A61K 40/4269	. . . . . {NY-ESO}
N	A61K 40/427	. . . . . {PRAME}
N	A61K 40/4271	. . . . . {Melanoma antigens}
N	A61K 40/4272	. . . . . {Melan-A/MART}

N	A61K 40/4273	. . . . {Glycoprotein 100 [Gp100]}
N	A61K 40/4274	. . . . {Prostate associated antigens e.g. Prostate stem cell antigen [PSCA]; Prostate carcinoma tumor antigen [PCTA]; Prostatic acid phosphatase [PAP]; Prostate-specific G-protein-coupled receptor [PSGR]}
N	A61K 40/4275	. . . . {Prostate specific antigen [PSA]}
N	A61K 40/4276	. . . . {Prostate specific membrane antigen [PSMA]}
N	A61K 40/4277	. . . . {Fusion proteins originating from gene translocation in cancer cells}
N	A61K 40/4278	. . . . {Breakpoint cluster region-abelson tyrosine kinase [BCR-ABL]}
N	A61K 40/4279	. . . . {Pml-RARalpha}
N	A61K 40/428	. . . . {Undefined tumor antigens, e.g. tumor lysate or antigens targeted by cells isolated from tumor}
N	A61K 40/4285	. . . {Lipids; Lipoproteins}
N	A61K 40/429	. . {Small organic molecules e.g. cocaine or nicotine}
N	A61K 40/43	. . Protozoan antigens
N	A61K 40/432	. . . {Trypanosoma antigens}
N	A61K 40/434	. . . {Leishmania antigens}
N	A61K 40/436	. . . {Coccidia antigens}
N	A61K 40/438	. . . {Hemosporidia antigens, e.g. Plasmodium antigens}
N	A61K 40/4385	. . . . {Babesia antigens, e.g. Theileria antigens}
N	A61K 40/44	. . Fungal antigens
N	A61K 40/45	. . Bacterial antigens
N	A61K 40/4512	. . . {Bacterioidetes, e.g. Bacteroides, Ornithobacter or Porphyromonas}
N	A61K 40/4514	. . . {Spirochetes, e.g. Treponema, Leptospira or Borrelia}
N	A61K 40/4516	. . . {Rickettsiales, e.g. Anaplasma}
N	A61K 40/4518	. . . {Mollicutes, e.g. Mycoplasma or Erysipelothrix}
N	A61K 40/452	. . . {Enterobacteriales, e.g. Enterobacter}
N	A61K 40/4522	. . . . {Yersinia}
N	A61K 40/4524	. . . {Mycobacterium, e.g. Mycobacterium tuberculosis}
N	A61K 40/4526	. . . {Corynebacterium or Propionibacterium, Actinobacteria, e.g. Actinomyces, Streptomyces, Nocardia, Bifidobacterium or Gardnerella}
N	A61K 40/4528	. . . {Bacillus}
N	A61K 40/453	. . . {Clostridium, e.g. Clostridium tetani}
N	A61K 40/4532	. . . {Staphylococcus}
N	A61K 40/4534	. . . {Streptococcus}
N	A61K 40/4536	. . . {Lactobacillales, e.g. aerococcus, enterococcus, lactobacillus or lactococcus}
N	A61K 40/4538	. . . {Neisseria}
N	A61K 40/454	. . . {Brucella; Bordetella, e.g. Bordetella pertussis}
N	A61K 40/4542	. . . {Pasteurellales, e.g. Actinobacillus, Pasteurella; Haemophilus}
N	A61K 40/4544	. . . {Pseudomonadales, e.g. Pseudomonas}
N	A61K 40/4546	. . . . {Moraxella}
N	A61K 40/4548	. . . {Delta proteobacteriales, e.g. Lawsonia; Epsilon proteobacteriales}
N	A61K 40/455	. . . {Vibrio; Campylobacter}
N	A61K 40/456	. . . {Escherichia; Klebsiella}
N	A61K 40/4562	. . . {Salmonella; Shigella}

- N A61K 40/4564 • • • {*Fusobacterium*}
- N A61K 40/4566 • • • {Polyvalent bacterial antigens}
- N A61K 40/4568 • • • {*Chlamydiaceae*, e.g. *Chlamydia trachomatis* or *Chlamydia psittaci*}
- N A61K 40/46 • • Viral antigens
- N A61K 40/48 • • Allergens
- N A61K 40/482 • • • {from pollen}
- N A61K 40/50 • characterised by the use of allogeneic cells

Project: RP10429-F (A61K)

- M A61K 2239/00** Indexing codes associated with cellular immunotherapy of group
A61K 39/46 **A61K 40/00**

WARNING

Groups A61K 2239/00 -- A61K 2239/59 are incomplete pending reclassification of documents from groups A61K 35/15, A61K 35/17, A61K 39/0011 -- A61K 39/001198, A61K 2039/5152, A61K 2039/5154, A61K 2039/5156, A61K 2039/5158, C12N 5/0634, C12N 5/0635, C12N 5/0636, C12N 5/0637, C12N 5/0638, C12N 5/0639, C12N 5/064, C12N 5/0645 and C12N 5/0646. All groups listed in this Warning should be considered in order to perform a complete search.

Project: RP12360 (A61K)

- D A61K 2239/26 • Universal/off-the-shelf cellular immunotherapy; Allogenic cells or means to avoid rejection
 <administratively transferred to [A61K 40/50](#)>

Project: RP12357 (A61M)

- U A61M 1/00** Suction or pumping devices for medical purposes; Devices for carrying-off, for treatment of, or for carrying-over, body-liquids; Drainage systems (catheters [A61M 25/00](#); tube connectors, tube couplings, valves or branch units specially adapted for medical use [A61M 39/00](#); devices for taking samples of blood [A61B 5/15](#); filters implantable into blood vessels [A61F 2/01](#))
- U A61M 1/02 • Blood transfusion apparatus (blood infusion by syringes [A61M 5/14](#))
- C A61M 1/0272 • • {Apparatus for treatment of blood or blood constituents prior to or for conservation, e.g. freezing, drying or centrifuging}

WARNING

Group [A61M 1/0272](#) is incomplete pending reclassification of documents from groups [A01N 1/14](#), [A01N 1/142](#) and [A01N 1/146](#).

Group [A61M 1/0272](#) is also impacted by reclassification into groups [C12N 5/54](#) - [C12N 5/548](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- C A61M 1/0277 • • • {Frames constraining or supporting bags, e.g. during freezing}

WARNING

Group [A61M 1/0277](#) is incomplete pending reclassification of documents from groups [A01N 1/14](#), [A01N 1/142](#) and [A01N 1/146](#).

Group [A61M 1/0277](#) is also impacted by reclassification into groups [C12N 5/54](#) - [C12N 5/548](#).

All groups listed in this Warning should be considered in order to perform a complete search.

Project: RP12358 (A61M)

- U A61M 5/00 Devices for bringing media into the body in a subcutaneous, intra-vascular or intramuscular way; Accessories therefor, e.g. filling or cleaning devices, arm-rests ({vaccination appliances for veterinary use [A61D 1/025](#)}; tube connectors, tube couplings, valves or branch units specially adapted for medical use [A61M 39/00](#); containers specially adapted for medical or pharmaceutical purposes [A61J 1/00](#); {combinations of vial and syringe for mixing or transferring their contents [A61J 1/20](#); holders for containers for collecting, storing or administering blood or medical fluids [A61J 1/16](#)})
- U A61M 5/14 • Infusion devices, e.g. infusing by gravity; Blood infusion; Accessories therefor
- U A61M 5/142 • • Pressure infusion, e.g. using pumps

NOTE

In this group, the following expression is used with the meaning indicated:

- "pressure infusion" includes powered injection working at a controlled rate

- U A61M 5/145 • • • using pressurised reservoirs, e.g. pressurised by means of pistons
- U A61M 5/148 • • • • flexible, {e.g. independent bags}{[A61M 5/155](#) takes precedence}
- M A61M 5/152 • • • • • pressurised by contraction of elastic reservoirs {(containers for dispensing contents by contraction of an elastic bag provided therein, in general ~~B65D 83/0061~~[B65D 83/7711](#))}

Project: MP12470 (A61M)

- M A61M 16/00 Devices for influencing the respiratory system of patients by gas treatment, e.g. ~~mouth-to-mouth respiration~~[ventilators \(iron lungs \[A61H 31/02\]\(#\)\)](#); Tracheal tubes (~~stimulating the respiratory movement by mechanical, pneumatic or electrical means, iron lungs combined with gas breathing means [A61H 31/00](#)~~)

Project: RP10476 (B01D)

- C B01D 15/00 Separating processes involving the treatment of liquids with solid sorbents (~~using liquid sorbents [B01D 11/00](#); ion-exchange processes or materials, sorbent materials in general [B01J](#), e.g. sorbents for chromatography [B01J 20/281](#); for investigating or analysing materials [G01N 30/00](#)~~); Apparatus therefor

WARNING

Group [B01D 15/00](#) is impacted by reclassification into groups [B01D 15/122](#) and [B01D 15/267](#).

Groups [B01D 15/00](#), [B01D 15/122](#) and [B01D 15/267](#) should be considered in order to perform a complete search.

- C B01D 15/08 • Selective adsorption, e.g. chromatography

NOTE

In order that group [B01D 15/08](#) may provide a basis for a complete search with respect to chromatography in general, all subject matter of general interest is classified in this group even if it is classified primarily in the application-oriented groups, for example dairy products [A23C 9/148](#), treatment of blood, e.g. [A61M 1/36](#), optically active organic compounds [C07B 57/00](#) or peptides [C07K 1/16](#)

WARNING

Group [B01D 15/08](#) is impacted by reclassification into groups [B01D 15/102](#), [B01D 15/122](#), [B01D 15/222](#) and [B01D 15/267](#).

All groups listed in this Warning should be considered in order to perform a complete search.

C B01D 15/10

- • characterised by constructional or operational features

WARNING

Group B01D 15/10 is impacted by reclassification into group B01D 15/102. Groups B01D 15/10 and B01D 15/102 should be considered in order to perform a complete search.

N B01D 15/102

- • {Process control, e.g. determination or optimization of process parameters; Programmable logic control [PLC]}

WARNING

Group B01D 15/102 is incomplete pending reclassification of documents from groups B01D 15/08, B01D 15/10, B01D 15/18, B01D 15/1807, B01D 15/1814, B01D 15/1821, B01D 15/1828, B01D 15/1835, B01D 15/1842, B01D 15/185, B01D 15/1857, B01D 15/1864, B01D 15/1871, B01D 15/1878, B01D 15/1885 and B01D 15/1892. All groups listed in this Warning should be considered in order to perform a complete search.

C B01D 15/12

- • relating to the preparation of the feed

WARNING

Group B01D 15/12 is impacted by reclassification into group B01D 15/122. Groups B01D 15/12 and B01D 15/122 should be considered in order to perform a complete search.

N B01D 15/122

- • • {Solid phase extraction}

WARNING

Group B01D 15/122 is incomplete pending reclassification of documents from groups B01D 15/00, B01D 15/08, B01D 15/12, B01D 15/125 and B01D 15/22. All groups listed in this Warning should be considered in order to perform a complete search.

C B01D 15/125

- • • {Pre-filtration}

WARNING

Group B01D 15/125 is impacted by reclassification into group B01D 15/122. Groups B01D 15/125 and B01D 15/122 should be considered in order to perform a complete search.

U B01D 15/16

- • relating to the conditioning of the fluid carrier

U B01D 15/166

- • • {Fluid composition conditioning, e.g. gradient}

M B01D 15/168

- • • • {pH gradient; or chromatofocusing, i.e. separation according to the isoelectric point pI}

C B01D 15/18

- • relating to flow patterns

WARNING

Group B01D 15/18 is impacted by reclassification into groups B01D 15/102, B01D 15/1801, B01D 15/1894 and B01D 15/1896. All groups listed in this Warning should be considered in order to perform a complete search.

- N B01D 15/1801 . . . {Radial flow}
- WARNING
 Group [B01D 15/1801](#) is incomplete pending reclassification of documents from groups [B01D 15/18](#), [B01D 15/1807](#), [B01D 15/1814](#), [B01D 15/1821](#), [B01D 15/1828](#), [B01D 15/1835](#), [B01D 15/1842](#), [B01D 15/185](#), [B01D 15/1857](#), [B01D 15/1864](#), [B01D 15/1871](#), [B01D 15/1878](#), [B01D 15/1885](#), [B01D 15/1892](#) and [B01D 15/22](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- C B01D 15/1807 . . . {using counter-currents, e.g. fluidised beds}
- WARNING
 Group [B01D 15/1807](#) is impacted by reclassification into groups [B01D 15/102](#), [B01D 15/1801](#), [B01D 15/1894](#) and [B01D 15/1896](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- C B01D 15/1814 . . . {~~recycling~~Recycling of the fraction to be distributed}
- WARNING
 Group [B01D 15/1814](#) is impacted by reclassification into groups [B01D 15/102](#), [B01D 15/1801](#), [B01D 15/1894](#) and [B01D 15/1896](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- C B01D 15/1821 . . . {Simulated moving beds}
- WARNING
 Group [B01D 15/1821](#) is impacted by reclassification into groups [B01D 15/102](#), [B01D 15/1801](#), [B01D 15/1894](#) and [B01D 15/1896](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- C B01D 15/1828 . . . {~~characterized~~characterised by process features}
- WARNING
 Group [B01D 15/1828](#) is impacted by reclassification into groups [B01D 15/102](#), [B01D 15/1801](#), [B01D 15/1894](#) and [B01D 15/1896](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- C B01D 15/1835 . . . {Flushing}
- WARNING
 Group [B01D 15/1835](#) is impacted by reclassification into groups [B01D 15/102](#), [B01D 15/1801](#), [B01D 15/1894](#) and [B01D 15/1896](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- C B01D 15/1842 . . . {~~characterized~~characterised by apparatus features}
- WARNING
 Group [B01D 15/1842](#) is impacted by reclassification into groups [B01D 15/102](#), [B01D 15/1801](#), [B01D 15/1894](#) and [B01D 15/1896](#).
 All groups listed in this Warning should be considered in order to perform a complete search.

- C B01D 15/185 {characterizedcharacterised by the components to be separated}
- WARNING
Group B01D 15/185 is impacted by reclassification into groups B01D 15/102, B01D 15/1801, B01D 15/1894 and B01D 15/1896. All groups listed in this Warning should be considered in order to perform a complete search.
- C B01D 15/1857 {Reactive simulated moving beds}
- WARNING
Group B01D 15/1857 is impacted by reclassification into groups B01D 15/102, B01D 15/1801, B01D 15/1894 and B01D 15/1896. All groups listed in this Warning should be considered in order to perform a complete search.
- C B01D 15/1864 {using two or more columns}
- WARNING
Group B01D 15/1864 is impacted by reclassification into groups B01D 15/102, B01D 15/1801, B01D 15/1867, B01D 15/1894 and B01D 15/1896. All groups listed in this Warning should be considered in order to perform a complete search.
- N B01D 15/1867 {with intermediate treatments or steps performed between columns}
- WARNING
Group B01D 15/1867 is incomplete pending reclassification of documents from groups B01D 15/1864, B01D 15/36, B01D 15/361, B01D 15/362, B01D 15/363, B01D 15/364, B01D 15/365, B01D 15/366, B01D 15/367, B01D 15/368, B01D 15/38, B01D 15/3804, B01D 15/3809, B01D 15/3814, B01D 15/3819, B01D 15/3823, B01D 15/3828, B01D 15/3833, B01D 15/3842, B01D 15/3847, B01D 15/3852, B01D 15/3857, B01D 15/3861, B01D 15/3866, B01D 15/3871, B01D 15/3876, B01D 15/388 and B01D 15/3885. All groups listed in this Warning should be considered in order to perform a complete search.
- C B01D 15/1871 {placed in series}
- WARNING
Group B01D 15/1871 is impacted by reclassification into groups B01D 15/102, B01D 15/1801, B01D 15/1894 and B01D 15/1896. All groups listed in this Warning should be considered in order to perform a complete search.
- C B01D 15/1878 {for multi-dimensional chromatography}
- WARNING
Group B01D 15/1878 is impacted by reclassification into groups B01D 15/102, B01D 15/1801, B01D 15/1894 and B01D 15/1896. All groups listed in this Warning should be considered in order to perform a complete search.
- C B01D 15/1885 {placed in parallel}
- WARNING
Group B01D 15/1885 is impacted by reclassification into groups B01D 15/102, B01D 15/1801, B01D 15/1894 and B01D 15/1896. All groups listed in this Warning should be considered in order to perform a complete search.

- C B01D 15/1892 . . . {the sorbent material moving as a whole, e.g. continuous annular chromatography, true moving beds *or centrifugal chromatography*}
- WARNING
Group [B01D 15/1892](#) is impacted by reclassification into groups [B01D 15/102](#), [B01D 15/1801](#), [B01D 15/1894](#) and [B01D 15/1896](#). All groups listed in this Warning should be considered in order to perform a complete search.
- N B01D 15/1894 . . . {Liquid-liquid chromatography, e.g. centrifugal partition chromatography or extraction chromatography}
- WARNING
Group [B01D 15/1894](#) is incomplete pending reclassification of documents from groups [B01D 15/18](#), [B01D 15/1807](#), [B01D 15/1814](#), [B01D 15/1821](#), [B01D 15/1828](#), [B01D 15/1835](#), [B01D 15/1842](#), [B01D 15/185](#), [B01D 15/1857](#), [B01D 15/1864](#), [B01D 15/1871](#), [B01D 15/1878](#), [B01D 15/1885](#), [B01D 15/1892](#), [B01D 15/22](#) and [B01D 15/30](#). All groups listed in this Warning should be considered in order to perform a complete search.
- N B01D 15/1896 . . . {Membrane chromatography or membrane adsorbers}
- WARNING
Group [B01D 15/1896](#) is incomplete pending reclassification of documents from groups [B01D 15/18](#), [B01D 15/1807](#), [B01D 15/1814](#), [B01D 15/1821](#), [B01D 15/1828](#), [B01D 15/1835](#), [B01D 15/1842](#), [B01D 15/185](#), [B01D 15/1857](#), [B01D 15/1864](#), [B01D 15/1871](#), [B01D 15/1878](#), [B01D 15/1885](#), [B01D 15/1892](#), [B01D 15/22](#), [B01D 15/36](#), [B01D 15/361](#), [B01D 15/362](#), [B01D 15/363](#), [B01D 15/364](#), [B01D 15/365](#), [B01D 15/366](#), [B01D 15/367](#), [B01D 15/368](#), [B01D 15/38](#), [B01D 15/3804](#), [B01D 15/3809](#), [B01D 15/3814](#), [B01D 15/3819](#), [B01D 15/3823](#), [B01D 15/3828](#), [B01D 15/3833](#), [B01D 15/3842](#), [B01D 15/3847](#), [B01D 15/3852](#), [B01D 15/3857](#), [B01D 15/3861](#), [B01D 15/3866](#), [B01D 15/3871](#), [B01D 15/3876](#), [B01D 15/388](#) and [B01D 15/3885](#). All groups listed in this Warning should be considered in order to perform a complete search.
- C B01D 15/22 . . . relating to the construction of the column
- WARNING
Group [B01D 15/22](#) is impacted by reclassification into groups [B01D 15/122](#), [B01D 15/1801](#), [B01D 15/1894](#), [B01D 15/1896](#) and [B01D 15/222](#). All groups listed in this Warning should be considered in order to perform a complete search.
- N B01D 15/222 . . . {Arrangements of modules or cassettes}
- WARNING
Group [B01D 15/222](#) is incomplete pending reclassification of documents from groups [B01D 15/08](#) and [B01D 15/22](#). Groups [B01D 15/08](#), [B01D 15/22](#) and [B01D 15/222](#) should be considered in order to perform a complete search.
- C B01D 15/26 . . characterised by the separation mechanism
- WARNING
Group [B01D 15/26](#) is impacted by reclassification into group [B01D 15/267](#). Groups [B01D 15/26](#) and [B01D 15/267](#) should be considered in order to perform a complete search.

- C B01D 15/265 . . . {Adsorption chromatography}
- WARNING
Group [B01D 15/265](#) is impacted by reclassification into group [B01D 15/267](#).
Groups [B01D 15/265](#) and [B01D 15/267](#) should be considered in order to perform a complete search.
- N B01D 15/267 . . . {using neutral sorbents, e.g. activated carbon or diatomaceous earth}
- WARNING
Group [B01D 15/267](#) is incomplete pending reclassification of documents from groups [B01D 15/00](#), [B01D 15/08](#), [B01D 15/26](#) and [B01D 15/265](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- C B01D 15/30 . . . Partition chromatography
- WARNING
Group [B01D 15/30](#) is impacted by reclassification into group [B01D 15/1894](#).
Groups [B01D 15/30](#) and [B01D 15/1894](#) should be considered in order to perform a complete search.
- T B01D 15/34 . . . Size-selective separation, e.g. size-exclusion chromatography, gel filtration, permeation-exclusion chromatography; Gel filtration; Permeation
- D B01D 15/345 . . . {Perfusive chromatography}
- <administratively transferred to [B01D 15/34](#)>
- C B01D 15/36 . . . involving ionic interaction, e.g. ion-exchange, ion-pair, ion-suppression or ion-exclusion
- WARNING
Group [B01D 15/36](#) is impacted by reclassification into groups [B01D 15/1867](#) and [B01D 15/1896](#).
Groups [B01D 15/36](#), [B01D 15/1867](#) and [B01D 15/1896](#) should be considered in order to perform a complete search.
- C B01D 15/361 . . . {Ion-exchange}
- WARNING
Group [B01D 15/361](#) is impacted by reclassification into groups [B01D 15/1867](#) and [B01D 15/1896](#).
Groups [B01D 15/361](#), [B01D 15/1867](#) and [B01D 15/1896](#) should be considered in order to perform a complete search.
- C B01D 15/362 . . . {Cation-exchange}
- WARNING
Group [B01D 15/362](#) is impacted by reclassification into groups [B01D 15/1867](#) and [B01D 15/1896](#).
Groups [B01D 15/362](#), [B01D 15/1867](#) and [B01D 15/1896](#) should be considered in order to perform a complete search.
- C B01D 15/363 . . . {Anion-exchange}
- WARNING
Group [B01D 15/363](#) is impacted by reclassification into groups [B01D 15/1867](#) and [B01D 15/1896](#).
Groups [B01D 15/363](#), [B01D 15/1867](#) and [B01D 15/1896](#) should be considered in order to perform a complete search.

- C B01D 15/364 {Amphoteric or zwitterionic ion-exchanger}
- WARNING
Group B01D 15/364 is impacted by reclassification into groups B01D 15/1867 and B01D 15/1896.
Groups B01D 15/364, B01D 15/1867 and B01D 15/1896 should be considered in order to perform a complete search.
- C B01D 15/365 {Ion-exclusion}
- WARNING
Group B01D 15/365 is impacted by reclassification into groups B01D 15/1867 and B01D 15/1896.
Groups B01D 15/365, B01D 15/1867 and B01D 15/1896 should be considered in order to perform a complete search.
- C B01D 15/366 {Ion-pair, e.g. ion-pair reversed phase}
- WARNING
Group B01D 15/366 is impacted by reclassification into groups B01D 15/1867 and B01D 15/1896.
Groups B01D 15/366, B01D 15/1867 and B01D 15/1896 should be considered in order to perform a complete search.
- C B01D 15/367 {Ion-suppression}
- WARNING
Group B01D 15/367 is impacted by reclassification into groups B01D 15/1867 and B01D 15/1896.
Groups B01D 15/367, B01D 15/1867 and B01D 15/1896 should be considered in order to perform a complete search.
- C B01D 15/368 {Cation- π interaction}
- WARNING
Group B01D 15/368 is impacted by reclassification into groups B01D 15/1867 and B01D 15/1896.
Groups B01D 15/368, B01D 15/1867 and B01D 15/1896 should be considered in order to perform a complete search.
- C B01D 15/38 involving specific interaction not covered by one or more of groups {B01D 15/265 and} B01D 15/30 - B01D 15/36, e.g. affinity, ligand exchange or chiral chromatography
- WARNING
Group B01D 15/38 is impacted by reclassification into groups B01D 15/1867 and B01D 15/1896.
Groups B01D 15/38, B01D 15/1867 and B01D 15/1896 should be considered in order to perform a complete search.
- C B01D 15/3804 {Affinity chromatography}
- WARNING
Group B01D 15/3804 is impacted by reclassification into groups B01D 15/1867 and B01D 15/1896.
Groups B01D 15/3804, B01D 15/1867 and B01D 15/1896 should be considered in order to perform a complete search.
- C B01D 15/3809 {of the antigen-antibody type, e.g. protein A, G₊ or L chromatography}
- WARNING
Group B01D 15/3809 is impacted by reclassification into groups B01D 15/1867 and B01D 15/1896.

Groups B01D 15/3809, B01D 15/1867 and B01D 15/1896 should be considered in order to perform a complete search.

- C B01D 15/3814 {of the substrate or ~~co-factor~~ cofactor-enzyme type}

WARNING

*Group B01D 15/3814 is impacted by reclassification into groups B01D 15/1867 and B01D 15/1896.
Groups B01D 15/3814, B01D 15/1867 and B01D 15/1896 should be considered in order to perform a complete search.*

- C B01D 15/3819 {of the nucleic acid-nucleic acid binding protein type}

WARNING

*Group B01D 15/3819 is impacted by reclassification into groups B01D 15/1867 and B01D 15/1896.
Groups B01D 15/3819, B01D 15/1867 and B01D 15/1896 should be considered in order to perform a complete search.*

- C B01D 15/3823 {of other types, e.g. avidin, streptavidin, or biotin}

WARNING

*Group B01D 15/3823 is impacted by reclassification into groups B01D 15/1867 and B01D 15/1896.
Groups B01D 15/3823, B01D 15/1867 and B01D 15/1896 should be considered in order to perform a complete search.*

- C B01D 15/3828 {Ligand exchange chromatography, e.g. complexation, chelation or metal interaction chromatography}

WARNING

*Group B01D 15/3828 is impacted by reclassification into groups B01D 15/1867 and B01D 15/1896.
Groups B01D 15/3828, B01D 15/1867 and B01D 15/1896 should be considered in order to perform a complete search.*

- C B01D 15/3833 {Chiral chromatography}

WARNING

*Group B01D 15/3833 is impacted by reclassification into groups B01D 15/1867 and B01D 15/1896.
Groups B01D 15/3833, B01D 15/1867 and B01D 15/1896 should be considered in order to perform a complete search.*

- D B01D 2015/3838 {~~Ligand exchange chromatography, e.g. complexation chromatography, chelation chromatography, metal interaction chromatography~~
<administratively transferred to [B01D 15/3828](#) INV>

- C B01D 15/3842 {Micellar chromatography}

WARNING

*Group B01D 15/3842 is impacted by reclassification into groups B01D 15/1867 and B01D 15/1896.
Groups B01D 15/3842, B01D 15/1867 and B01D 15/1896 should be considered in order to perform a complete search.*

- C B01D 15/3847 {Multimodal interactions}

WARNING

Group B01D 15/3847 is impacted by reclassification into groups B01D 15/1867 and B01D 15/1896.

Groups B01D 15/3847, B01D 15/1867 and B01D 15/1896 should be considered in order to perform a complete search.

- C B01D 15/3852 . . . {using imprinted phases or molecular recognition}; ~~using imprinted phases~~

WARNING

*Group B01D 15/3852 is impacted by reclassification into groups B01D 15/1867 and B01D 15/1896.
Groups B01D 15/3852, B01D 15/1867 and B01D 15/1896 should be considered in order to perform a complete search.*

- C B01D 15/3857 . . . {Reaction chromatography}

WARNING

*Group B01D 15/3857 is impacted by reclassification into groups B01D 15/1867 and B01D 15/1896.
Groups B01D 15/3857, B01D 15/1867 and B01D 15/1896 should be considered in order to perform a complete search.*

- C B01D 15/3861 . . . {using an external stimulus}

WARNING

*Group B01D 15/3861 is impacted by reclassification into groups B01D 15/1867 and B01D 15/1896.
Groups B01D 15/3861, B01D 15/1867 and B01D 15/1896 should be considered in order to perform a complete search.*

- C B01D 15/3866 . . . {using ~~ultra-sound~~ultrasound}

WARNING

*Group B01D 15/3866 is impacted by reclassification into groups B01D 15/1867 and B01D 15/1896.
Groups B01D 15/3866, B01D 15/1867 and B01D 15/1896 should be considered in order to perform a complete search.*

- C B01D 15/3871 . . . {using light}

WARNING

*Group B01D 15/3871 is impacted by reclassification into groups B01D 15/1867 and B01D 15/1896.
Groups B01D 15/3871, B01D 15/1867 and B01D 15/1896 should be considered in order to perform a complete search.*

- C B01D 15/3876 . . . {modifying the temperature}

WARNING

*Group B01D 15/3876 is impacted by reclassification into groups B01D 15/1867 and B01D 15/1896.
Groups B01D 15/3876, B01D 15/1867 and B01D 15/1896 should be considered in order to perform a complete search.*

- C B01D 15/388 . . . {modifying the pH}

WARNING

*Group B01D 15/388 is impacted by reclassification into groups B01D 15/1867 and B01D 15/1896.
Groups B01D 15/388, B01D 15/1867 and B01D 15/1896 should be considered in order to perform a complete search.*

- C B01D 15/3885 {~~Using~~*using* electrical or magnetic means}

WARNING

Group B01D 15/3885 is impacted by reclassification into groups B01D 15/1867 and B01D 15/1896.

Groups B01D 15/3885, B01D 15/1867 and B01D 15/1896 should be considered in order to perform a complete search.

- D B01D 2015/389 {using ultra-sound}
<administratively transferred to [B01D 15/3866](#) INV>

- D B01D 2015/3895 {using light}
<administratively transferred to [B01D 15/3871](#) INV>

- D B01D 2215/00** **~~Separating processes involving the treatment of liquids with adsorbents~~**
<administratively transferred to [B01D 15/00](#) ADD>

- D B01D 2215/02 . with ~~moving~~ adsorbents
<administratively transferred to [B01D 15/02](#) ADD>

- D B01D 2215/021 . . Physically moving or fluidising the adsorbent beads or particles or slurry, excluding the movement of the entire columns
<administratively transferred to [B01D 15/1892](#) ADD>

- D B01D 2215/022 . . Physically moving the adsorbent as a whole, e.g. belts, discs or sheets
<administratively transferred to [B01D 15/1892](#) ADD>

- D B01D 2215/023 . . Simulated moving beds
<administratively transferred to [B01D 15/1821](#) ADD>

- D B01D 2215/024 . . . Provisions to deal with recirculated volumes, e.g. in order to regulate flow
<administratively transferred to [B01D 15/1828](#) ADD>

- D B01D 2215/025 . . . Reekon with dead volumes between sections
<administratively transferred to [B01D 15/1828](#) ADD>

- D B01D 2215/026 . . . Flushing the injection conduits
<administratively transferred to [B01D 15/1835](#) ADD>

- D B01D 2215/027 . . . Used at supercritical conditions of temperature or pressure
<administratively transferred to [B01D 15/40](#) ADD>

- D B01D 2215/028 . . . Co-current flow
<administratively transferred to [B01D 15/1828](#) ADD>

- D B01D 2215/029 . . Centrifuge-like arrangements
<administratively transferred to [B01D 15/1894](#) ADD>

Project: RP0757-F (B01F)

- M B01F** **MIXING, e.g. DISSOLVING, EMULSIFYING OR DISPERSING (mixing paints [B44D 3/06](#))**

NOTES

1. This subclass covers:

- agitation or homogenisation of products formed by a combination of two or more components with the purpose of obtaining a homogeneous composition or homogeneous conditions in the mass of material;
- stirring of a single material with the purpose of obtaining homogeneous conditions in the mass of material;

- mixing, agitation and homogenisation of materials, irrespective of the application in which it is produced, whenever the device or the method are directed to achieve the desired effect.
2. In this subclass, the following term is used with the meaning indicated:
- "mixing" also covers stirring of a single material.

WARNING

{In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.}

U B01F 23/00

Mixing according to the phases to be mixed, e.g. dispersing or emulsifying

NOTE

In this group, the following term is used with the meaning indicated:

- "gases" covers also vapours.

U B01F 23/20

- Mixing gases with liquids

U B01F 23/23

- • by introducing gases into liquid media, e.g. for producing aerated liquids

U B01F 23/231

- • • by bubbling (mixers with gas or liquid agitation, e.g. with air supply tubes [B01F 33/40](#))

U B01F 23/23105

- • • • {Arrangement or manipulation of the gas bubbling devices}

M B01F 23/2312

- • • • • {Diffusers}

WARNING

Group B01F 23/2312 is impacted by reclassification into groups B01F 23/23121, B01F 23/23122, B01F 23/23123, B01F 23/231231, B01F 23/231232, B01F 23/231233, B01F 23/23124, B01F 23/231241, B01F 23/231242, B01F 23/231243, B01F 23/231244, B01F 23/231245, B01F 23/23125, B01F 23/23126, B01F 23/231261, B01F 23/231262, B01F 23/231263, B01F 23/231264, B01F 23/231265, B01F 23/231266, B01F 23/231267, B01F 23/231268, B01F 23/231269 and B01F 23/23127.

All groups listed in this Warning should be considered in order to perform a complete search.

M B01F 23/23121

- • • • • {having injection means, e.g. nozzles with circumferential outlet}

WARNING

Group B01F 23/23121 is incomplete pending reclassification of documents from group B01F 23/2312.

Groups B01F 23/2312 and B01F 23/23121 should be considered in order to perform a complete search.

M B01F 23/23122

- • • • • {having elements opening under air pressure, e.g. valves}

WARNING

Group B01F 23/23122 is incomplete pending reclassification of documents from group B01F 23/2312.

Groups B01F 23/2312 and B01F 23/23122 should be considered in order to perform a complete search.

M B01F 23/23123

- • • • • {consisting of rigid porous or perforated material}

WARNING

Group B01F 23/23123 is incomplete pending reclassification of documents from group B01F 23/2312.

Group B01F 23/23123 is also impacted by reclassification into groups B01F 23/23124, B01F 23/231241, B01F 23/231242, B01F 23/231243, B01F 23/231244 and B01F 23/231245.

All groups listed in this Warning should be considered in order to perform a complete search.

M B01F 23/231231 {the outlets being in the form of perforations}

WARNING

Group B01F 23/231231 is incomplete pending reclassification of documents from group B01F 23/2312.
Group B01F 23/231231 is also impacted by reclassification into groups B01F 23/231241 and B01F 23/231242.
All groups listed in this Warning should be considered in order to perform a complete search.

M B01F 23/231232 {in the form of slits or cut-out openings}

WARNING

Group B01F 23/231232 is incomplete pending reclassification of documents from group B01F 23/2312.
Group B01F 23/231232 is also impacted by reclassification into group B01F 23/231242.
All groups listed in this Warning should be considered in order to perform a complete search.

M B01F 23/231233 {comprising foam-like gas outlets}

WARNING

Group B01F 23/231233 is incomplete pending reclassification of documents from group B01F 23/2312.
Group B01F 23/231233 is also impacted by reclassification into group B01F 23/231243.
All groups listed in this Warning should be considered in order to perform a complete search.

M B01F 23/23124 {consisting of flexible porous or perforated material, e.g. fabric}

WARNING

Groups B01F 23/23124, B01F 23/231244, and B01F 23/231245 are incomplete pending reclassification of documents from groups B01F 23/2312 and B01F 23/23123.
All groups listed in this Warning should be considered in order to perform a complete search.

M B01F 23/231241 {the outlets being in the form of perforations}

WARNING

Group B01F 23/231241 is incomplete pending reclassification of documents from groups B01F 23/2312, B01F 23/23123, and B01F 23/231231.
All groups listed in this Warning should be considered in order to perform a complete search.

M B01F 23/231242 {in the form of slits or cut-out openings}

WARNING

Group B01F 23/231242 is incomplete pending reclassification of documents from groups B01F 23/2312, B01F 23/23123, B01F 23/231231, and B01F 23/231232.
All groups listed in this Warning should be considered in order to perform a complete search.

- M B01F 23/231243 {comprising foam-like gas outlets}

WARNING

Group B01F 23/231243 is incomplete pending reclassification of documents from groups B01F 23/2312, B01F 23/23123 and B01F 23/231233.
All groups listed in this Warning should be considered in order to perform a complete search.

- M B01F 23/231244 {Dissolving, hollow fiber membranes}

WARNING

Group B01F 23/231244 is incomplete pending reclassification of documents from groups B01F 23/2312 and B01F 23/23123.
Groups B01F 23/2312 and B01F 23/231244 should be considered in order to perform a complete search.

- M B01F 23/231245 {Fabric in the form of woven, knitted, braided, non-woven or flocculated fibers or filaments}

WARNING

Group B01F 23/231245 is incomplete pending reclassification of documents from groups B01F 23/2312 and B01F 23/23123.
All groups listed in this Warning should be considered in order to perform a complete search.

- M B01F 23/23125 {characterised by the way in which they are assembled or mounted; Fabricating the parts of the diffusers}

WARNING

Group B01F 23/23125 is incomplete pending reclassification of documents from group B01F 23/2312.
Groups B01F 23/2312 and B01F 23/23125 should be considered in order to perform a complete search.

- M B01F 23/23126 {characterised by the shape of the diffuser element}

WARNING

Groups B01F 23/23126 – B01F 23/23127 are incomplete pending reclassification of documents from group B01F 23/2312.
All groups listed in this Warning should be considered in order to perform a complete search.

- M B01F 23/232 . . . using flow-mixing means for introducing the gases, e.g. baffles

WARNING

Group B01F 23/232 is impacted by reclassification into group B01F 23/2326.
Groups B01F 23/232 and B01F 23/2326 should be considered in order to perform a complete search.

- M B01F 23/2326 . . . adding the flowing main component by suction means, e.g. using an ejector

WARNING

Group B01F 23/2326 is incomplete pending reclassification of documents from group B01F 23/232.
Groups B01F 23/232 and B01F 23/2326 should be considered in order to perform a complete search.

- U B01F 23/237 . . . characterised by the physical or chemical properties of gases or vapours introduced in the liquid media

M	B01F 23/2373	<ul style="list-style-type: none"> • • • • for obtaining fine bubbles, i.e. bubbles with a size below 100 µm <p><u>WARNING</u> Group B01F 23/2373 is impacted by reclassification into group B01F 23/2375. Groups B01F 23/2373 and B01F 23/2375 should be considered in order to perform a complete search.</p>
M	B01F 23/2375	<ul style="list-style-type: none"> • • • • for obtaining bubbles with a size below 1 µm <p><u>WARNING</u> Group B01F 23/2375 is incomplete pending reclassification of documents from group B01F 23/2373. Groups B01F 23/2373 and B01F 23/2375 should be considered in order to perform a complete search.</p>
M	B01F 23/2376	<ul style="list-style-type: none"> • • • • {characterised by the gas being introduced} <p><u>WARNING</u> Group B01F 23/2376 is impacted by reclassification into groups B01F 23/23761, B01F 23/237611, B01F 23/237612, B01F 23/237613, B01F 23/23762, B01F 23/237621, B01F 23/23763, B01F 23/23764, B01F 23/23765, B01F 23/23766 and B01F 23/23767. All groups listed in this Warning should be considered in order to perform a complete search.</p>
M	B01F 23/23761	<ul style="list-style-type: none"> • • • • {Aerating, i.e. introducing oxygen containing gas in liquids} <p><u>WARNING</u> Groups B01F 23/23761, B01F 23/237611, B01F 23/237612 and B01F 23/237613 are incomplete pending reclassification of documents from group B01F 23/2376. All groups listed in this Warning should be considered in order to perform a complete search.</p>
M	B01F 23/23762	<ul style="list-style-type: none"> • • • • {Carbon dioxide} <p><u>WARNING</u> Groups B01F 23/23762 and B01F 23/237621 are incomplete pending reclassification of documents from group B01F 23/2376. Groups B01F 23/2376, B01F 23/23762 and B01F 23/237621 should be considered in order to perform a complete search.</p>
M	B01F 23/23763	<ul style="list-style-type: none"> • • • • {Chlorine or chlorine containing gases} <p><u>WARNING</u> Group B01F 23/23763 is incomplete pending reclassification of documents from group B01F 23/2376. Groups B01F 23/2376 and B01F 23/23763 should be considered in order to perform a complete search.</p>
M	B01F 23/23764	<ul style="list-style-type: none"> • • • • {Hydrogen} <p><u>WARNING</u> Group B01F 23/23764 is incomplete pending reclassification of documents from group B01F 23/2376. Groups B01F 23/2376 and B01F 23/23764 should be considered in order to perform a complete search.</p>

M	B01F 23/23765	<ul style="list-style-type: none"> • • • • {Nitrogen} <p><u>WARNING</u> Group B01F 23/23765 is incomplete pending reclassification of documents from group B01F 23/2376. Groups B01F 23/2376 and B01F 23/23765 should be considered in order to perform a complete search.</p>
M	B01F 23/23766	<ul style="list-style-type: none"> • • • • {Sulphur containing gas} <p><u>WARNING</u> Group B01F 23/23766 is incomplete pending reclassification of documents from group B01F 23/2376. Groups B01F 23/2376 and B01F 23/23766 should be considered in order to perform a complete search.</p>
M	B01F 23/23767	<ul style="list-style-type: none"> • • • • {Introducing steam or damp in liquids} <p><u>WARNING</u> Group B01F 23/23767 is incomplete pending reclassification of documents from group B01F 23/2376. Groups B01F 23/2376 and B01F 23/23767 should be considered in order to perform a complete search.</p>
U	B01F 25/00	Flow mixers; Mixers for falling materials, e.g. solid particles (centrifugal mixers B04)
U	B01F 25/40	<ul style="list-style-type: none"> • Static mixers (colloid-mills B02C; mixing valves F16K 11/00)
U	B01F 25/42	<ul style="list-style-type: none"> • • in which the mixing is affected by moving the components jointly in changing directions, e.g. in tubes provided with baffles or obstructions
U	B01F 25/43	<ul style="list-style-type: none"> • • • Mixing tubes, e.g. wherein the material is moved in a radial or partly reversed direction
M	B01F 25/431	<ul style="list-style-type: none"> • • • • Straight mixing tubes with baffles or obstructions that do not cause substantial pressure drop; Baffles therefor <p><u>WARNING</u> Group B01F 25/431 is impacted by reclassification into groups B01F 25/4311, B01F 25/4312, B01F 25/4313, B01F 25/4314, B01F 25/43141, B01F 25/4315, B01F 25/43151, B01F 25/4316, B01F 25/43161, B01F 25/43162, B01F 25/43163, B01F 25/4317, B01F 25/43171, B01F 25/43172, B01F 25/4318, B01F 25/4319, B01F 25/43195, B01F 25/431951, B01F 25/431952, B01F 25/43197, B01F 25/431971, B01F 25/431972, B01F 25/431973 and B01F 25/431974. All groups listed in this Warning should be considered in order to perform a complete search.</p>
M	B01F 25/4311	<ul style="list-style-type: none"> • • • • {the baffles being adjustable} <p><u>WARNING</u> Group B01F 25/4311 is incomplete pending reclassification of documents from group B01F 25/431. Groups B01F 25/431 and B01F 25/4311 should be considered in order to perform a complete search.</p>
M	B01F 25/4312	<ul style="list-style-type: none"> • • • • {having different kinds of baffles, e.g. plates alternating with screens} <p><u>WARNING</u> Group B01F 25/4312 is incomplete pending reclassification of documents from group B01F 25/431.</p>

Groups B01F 25/431 and B01F 25/4312 should be considered in order to perform a complete search.

- M B01F 25/4313 {comprising a plurality of stacked ducts having their axes parallel to the tube axis}

WARNING

Group B01F 25/4313 is incomplete pending reclassification of documents from group B01F 25/431.

Groups B01F 25/431 and B01F 25/4313 should be considered in order to perform a complete search.

- M B01F 25/4314 with helical baffles

WARNING

Groups B01F 25/4314 and B01F 25/43141 are incomplete pending reclassification of documents from groups B01F 25/431 and B01F 25/4315.

All groups listed in this Warning should be considered in order to perform a complete search.

- M B01F 25/4315 {the baffles being deformed flat pieces of material ([B01F 25/4314](#) takes precedence)}

WARNING

Group B01F 25/4315 is incomplete pending reclassification of documents from group B01F 25/431.

Group B01F 25/4315 is also impacted by reclassification into groups B01F 25/43151, B01F 25/4314 and B01F 25/43141.

All groups listed in this Warning should be considered in order to perform a complete search.

- M B01F 25/43151 {composed of consecutive sections of deformed flat pieces of material}

WARNING

Group B01F 25/43151 is incomplete pending reclassification of documents from groups B01F 25/431 and B01F 25/4315.

Groups B01F 25/431, B01F 25/4315 and B01F 25/43151 should be considered in order to perform a complete search.

- M B01F 25/4316 {the baffles being flat pieces of material, e.g. intermeshing, fixed to the wall or fixed on a central rod}

WARNING

Group B01F 25/4316 is incomplete pending reclassification of documents from group B01F 25/431.

Group B01F 25/4316 is also impacted by reclassification into group B01F 25/43161.

Groups B01F 25/431, B01F 25/4316 and B01F 25/43161 should be considered in order to perform a complete search.

- M B01F 25/43161 {composed of consecutive sections of flat pieces of material}

WARNING

Group B01F 25/43161 is incomplete pending reclassification of documents from groups B01F 25/431 and B01F 25/4316.

Groups B01F 25/431, B01F 25/4316 and B01F 25/43161 should be considered in order to perform a complete search.

M	B01F 25/43162	<ul style="list-style-type: none"> • • • • • {Assembled flat elements} <p><u>WARNING</u> Group B01F 25/43162 is incomplete pending reclassification of documents from group B01F 25/431. Groups B01F 25/431 and B01F 25/43162 should be considered in order to perform a complete search.</p>
M	B01F 25/43163	<ul style="list-style-type: none"> • • • • • {in the form of small flat plate-like elements} <p><u>WARNING</u> Group B01F 25/43163 is incomplete pending reclassification of documents from group B01F 25/431. Groups B01F 25/431 and B01F 25/43163 should be considered in order to perform a complete search.</p>
M	B01F 25/4317	<ul style="list-style-type: none"> • • • • • {Profiled elements, e.g. profiled blades, bars, pillars, columns or chevrons} <p><u>WARNING</u> Groups B01F 25/4317 - B01F 25/43172 are incomplete pending reclassification of documents from group B01F 25/431. All groups listed in this Warning should be considered in order to perform a complete search.</p>
M	B01F 25/4318	<ul style="list-style-type: none"> • • • • • {Ring-shaped blades or strips} <p><u>WARNING</u> Group B01F 25/4318 is incomplete pending reclassification of documents from group B01F 25/431. Groups B01F 25/431 and B01F 25/4318 should be considered in order to perform a complete search.</p>
M	B01F 25/4319	<ul style="list-style-type: none"> • • • • • {Tubular elements} <p><u>WARNING</u> Group B01F 25/4319 is incomplete pending reclassification of documents from group B01F 25/431. Groups B01F 25/431 and B01F 25/4319 should be considered in order to perform a complete search.</p>
M	B01F 25/43195	<ul style="list-style-type: none"> • • • • • {Wires or coils} <p><u>WARNING</u> Groups B01F 25/43195 - B01F 25/431952 are incomplete pending reclassification of documents from group B01F 25/431. All groups listed in this Warning should be considered in order to perform a complete search.</p>
M	B01F 25/43197	<ul style="list-style-type: none"> • • • • • {characterised by the mounting of the baffles or obstructions} <p><u>WARNING</u> Groups B01F 25/43197 - B01F 25/431974 are incomplete pending reclassification of documents from group B01F 25/431. All groups listed in this Warning should be considered in order to perform a complete search.</p>
U	B01F 27/00	Mixers with rotary stirring devices in fixed receptacles (magnetic mixers B01F 33/45); Kneaders
U	B01F 27/60	<ul style="list-style-type: none"> • with stirrers rotating about a horizontal or inclined axis

M	B01F 27/63	<ul style="list-style-type: none"> • • co-operating with deflectors or baffles fixed to the receptacle <p>WARNING Group B01F 27/63 is incomplete pending reclassification of documents from group B01F 35/55. Groups B01F 35/55 and B01F 27/63 should be considered in order to perform a complete search.</p>
U	B01F 27/70	<ul style="list-style-type: none"> • • with paddles, blades or arms
U	B01F 27/701	<ul style="list-style-type: none"> • • • comprising two or more shafts, e.g. in consecutive mixing chambers
M	B01F 27/702	<ul style="list-style-type: none"> • • • with intermeshing paddles <p>WARNING Group B01F 27/702 is incomplete pending reclassification of documents from groups B01F 27/706 and B01F 27/708. All groups listed in this Warning should be considered in order to perform a complete search.</p>
M	B01F 27/703	<ul style="list-style-type: none"> • • • with stirrers rotating at different speeds <p>WARNING Group B01F 27/703 is incomplete pending reclassification of documents from groups B01F 27/706 and B01F 27/708. Group B01F 27/703 is also impacted by reclassification into group B01F 27/705. All groups listed in this Warning should be considered in order to perform a complete search.</p>
M	B01F 27/704	<ul style="list-style-type: none"> • • • with stirrers facing each other, i.e. supported by opposite walls of the receptacle <p>WARNING Group B01F 27/704 is incomplete pending reclassification of documents from groups B01F 27/706 and B01F 27/708. All groups listed in this Warning should be considered in order to perform a complete search.</p>
M	B01F 27/705	<ul style="list-style-type: none"> • • • with stirrers rotating in opposite directions about the same axis, e.g. with a first stirrer surrounded by a tube inside a second stirrer <p>WARNING Group B01F 27/705 is incomplete pending reclassification of documents from groups B01F 27/703, B01F 27/706 and B01F 27/708. All groups listed in this Warning should be considered in order to perform a complete search.</p>
M	B01F 27/706	<ul style="list-style-type: none"> • • • with all the shafts in the same receptacle (B01F 27/702-B01F 27/705 take precedence) <p>WARNING Group B01F 27/706 is incomplete pending reclassification of documents from group B01F 27/708. Group B01F 27/706 is also impacted by reclassification into groups B01F 27/702, B01F 27/703, B01F 27/704 and B01F 27/705. All groups listed in this Warning should be considered in order to perform a complete search.</p>
M	B01F 27/708	<ul style="list-style-type: none"> • • characterised by the shape of the stirrer as a whole, i.e. of Z- or S-shape <p>WARNING Group B01F 27/708 is impacted by reclassification into groups B01F 27/702, B01F 27/703, B01F 27/704, B01F 27/705 and B01F 27/706.</p>

All groups listed in this Warning should be considered in order to perform a complete search.

U B01F 29/00

Mixers with rotating receptacles

M B01F 29/20

- with receptacles rotating about an axis at an angle to their longitudinal axis (B01F 29/62 takes precedence)

WARNING

Group B01F 29/20 is impacted by reclassification into group B01F 29/62.
Groups B01F 29/20 and B01F 29/62 should be considered in order to perform a complete search.

U B01F 29/40

- {Parts or components, e.g. receptacles, feeding or discharging means (B01F 29/251 takes precedence)}

M B01F 29/401

- {Receptacles, e.g. provided with liners}

WARNING

Group B01F 29/401 is impacted by reclassification into groups B01F 29/4011, B01F 29/40111, B01F 29/40112, B01F 29/40113, B01F 29/40114, B01F 29/40115, B01F 29/40116, B01F 29/40117, B01F 29/40118, B01F 29/40119, B01F 29/401195, B01F 29/402, B01F 29/4021, B01F 29/4022, B01F 29/40221, B01F 29/40222, B01F 29/4023, B01F 29/40231, B01F 29/403, B01F 29/4031, B01F 29/4032, B01F 29/4033, B01F 29/4034, B01F 29/4035, B01F 29/40351, B01F 29/40352, B01F 29/40353, B01F 29/40354, B01F 29/4036, B01F 29/40361, B01F 29/40362, B01F 29/40363, B01F 29/40364 and B01F 29/40365.
All groups listed in this Warning should be considered in order to perform a complete search.

M B01F 29/4011

- • {characterised by the shape or cross-section of the receptacle, e.g. of Y-, Z-, S-, or X shape}

WARNING

Groups B01F 29/4011 – B01F 29/401195 are incomplete pending reclassification of documents from group B01F 29/401.
All groups listed in this Warning should be considered in order to perform a complete search.

M B01F 29/402

- • {characterised by the relative disposition or configuration of the interior of the receptacles}

WARNING

Groups B01F 29/402 – B01F 29/4023 are incomplete pending reclassification of documents from group B01F 29/401.
All groups listed in this Warning should be considered in order to perform a complete search.

M B01F 29/40231

- • {Surface characteristics, e.g. coated, rough}

WARNING

Group B01F 29/40231 is incomplete pending reclassification of documents from group B01F 29/401.
Groups B01F 29/401 and B01F 29/40231 should be considered in order to perform a complete search.

M B01F 29/403

- {Disposition of the rotor axis}

WARNING

Groups B01F 29/403 – B01F 29/40365 are incomplete pending reclassification of documents from group B01F 29/401.

~~All groups listed in this Warning should be considered in order to perform a complete search.~~

U B01F 29/60

- rotating about a horizontal or inclined axis, e.g. drum mixers

M B01F 29/62

- without bars, i.e. without mixing elements; characterised by the shape or cross section of the receptacle, e.g. of Y-, Z-, S- or X- shape; with cylindrical receptacles rotating about an axis at an angle to their longitudinal axis

WARNING

~~Group B01F 29/62 is incomplete pending reclassification of documents from group B01F 29/20.~~

~~Groups B01F 29/20 and B01F 29/62 should be considered in order to perform a complete search.~~

U B01F 31/00

Mixers with shaking, oscillating, or vibrating mechanisms

U B01F 31/20

- Mixing the contents of independent containers, e.g. test tubes

M B01F 31/25

- the containers being submitted to a combination of movements other than within a horizontal plane, e.g. rectilinear and pivoting movement (with a receptacle submitted to a combination of movements, i.e. at least one movement being vibratory or oscillatory [B01F 31/50](#))

WARNING

~~Group B01F 31/25 is impacted by reclassification into group B01F 31/50.~~

~~Groups B01F 31/25 and B01F 31/50 should be considered in order to perform a complete search.~~

M B01F 31/29

- Mixing by periodically deforming flexible tubular members through which the material is flowing

WARNING

~~Group B01F 31/29 is incomplete pending reclassification of documents from group B01F 31/57.~~

~~Group B01F 31/29 is also impacted by reclassification into group B01F 31/30. Groups B01F 31/57, B01F 31/29 and B01F 31/30 should be considered in order to perform a complete search.~~

M B01F 31/30

- comprising a receptacle to only a part of which the shaking, oscillating, or vibrating movement is imparted

WARNING

~~Group B01F 31/30 is incomplete pending reclassification of documents from groups B01F 31/29 and B01F 31/57.~~

~~Groups B01F 31/29, B01F 31/57 and B01F 31/30 should be considered in order to perform a complete search.~~

M B01F 31/40

- with an axially oscillating rotary stirrer

WARNING

~~Group B01F 31/40 is incomplete pending reclassification of documents from group B01F 31/44.~~

~~Groups B01F 31/40 and B01F 31/44 should be considered in order to perform a complete search.~~

M B01F 31/401

- {for material flowing continuously axially therethrough}

WARNING

~~Group B01F 31/401 is incomplete pending reclassification of documents from groups B01F 31/44 and B01F 31/57.~~

~~All groups listed in this Warning should be considered in order to perform a complete search.~~

M	B01F 31/42	<ul style="list-style-type: none"> with pendulum stirrers, i.e. with stirrers suspended so as to oscillate about fixed points or axes <p>WARNING Group B01F 31/42 is incomplete pending reclassification of documents from group B01F 31/44. Groups B01F 31/42 and B01F 31/44 should be considered in order to perform a complete search.</p>
M	B01F 31/44	<ul style="list-style-type: none"> with stirrers performing an oscillatory, vibratory or shaking movement (B01F 31/40, B01F 31/42 take precedence) <p>WARNING Group B01F 31/44 is impacted by reclassification into groups B01F 31/40, B01F 31/401 and B01F 31/42. All groups listed in this Warning should be considered in order to perform a complete search.</p>
M	B01F 31/46	<ul style="list-style-type: none"> with an annular vibrating trough <p>WARNING Group B01F 31/46 is incomplete pending reclassification of documents from group B01F 31/57. Groups B01F 31/57 and B01F 31/46 should be considered in order to perform a complete search.</p>
M	B01F 31/50	<ul style="list-style-type: none"> with a receptacle submitted to a combination of movements, i.e. at least one vibratory or oscillatory movement <p>WARNING Group B01F 31/50 is incomplete pending reclassification of documents from group B01F 31/25. Groups B01F 31/25 and B01F 31/50 should be considered in order to perform a complete search.</p>
M	B01F 31/57	<ul style="list-style-type: none"> {for material continuously moving therethrough (B01F 31/29, B01F 31/30, B01F 31/401, B01F 31/46, B01F 31/84 take precedence)} <p>WARNING Group B01F 31/57 is impacted by reclassification into groups B01F 31/29, B01F 31/30, B01F 31/401, B01F 31/46 and B01F 31/84. All groups listed in this Warning should be considered in order to perform a complete search.</p>
U	B01F 31/80	<ul style="list-style-type: none"> Mixing by means of high-frequency vibrations above one kHz, e.g. ultrasonic vibrations
M	B01F 31/84	<ul style="list-style-type: none"> {for material continuously moving through a tube, e.g. by deforming the tube} <p>WARNING Group B01F 31/84 is incomplete pending reclassification of documents from group B01F 31/57. Groups B01F 31/57 and B01F 31/84 should be considered in order to perform a complete search.</p>
M	B01F 33/00	<p>Other mixers; Mixing plants; Combinations of mixers</p> <p>WARNING Group B01F 33/00 is impacted by reclassification into group B01F 33/87. Groups B01F 33/00 and B01F 33/87 should be considered in order to perform a complete search.</p>

U	B01F 33/80	• Mixing plants; Combinations of mixers
M	B01F 33/834	<ul style="list-style-type: none"> • {Mixing in several steps, e.g. successive steps (B01F 33/81, B01F 33/82 and B01F 33/85 take precedence)} <p><u>WARNING</u> Group B01F 33/834 is impacted by reclassification into group B01F 33/85.- Groups B01F 33/834 and B01F 33/85 should be considered in order to perform a complete search.-</p>
M	B01F 33/85	<ul style="list-style-type: none"> • Mixing plants with mixing receptacles or mixing tools that can be indexed into different working positions <p><u>WARNING</u> Group B01F 33/85 is incomplete pending reclassification of documents from group B01F 33/834.- Groups B01F 33/834 and B01F 33/85 should be considered in order to perform a complete search.-</p>
M	B01F 33/87	<ul style="list-style-type: none"> • Roll-type mixers <p><u>WARNING</u> Group B01F 33/87 is incomplete pending reclassification of documents from group B01F 33/00.- Groups B01F 33/00 and B01F 33/87 should be considered in order to perform a complete search.-</p>
U	B01F 35/00	Accessories for mixers; Auxiliary operations or auxiliary devices; Parts or details of general application
M	B01F 35/10	<ul style="list-style-type: none"> • Maintenance of mixers <p><u>WARNING</u> Group B01F 35/10 is impacted by reclassification into groups B01F 35/11, B01F 35/12, B01F 35/121, B01F 35/122, B01F 35/123, and B01F 35/165.- All groups listed in this Warning should be considered in order to perform a complete search.-</p>
M	B01F 35/11	<ul style="list-style-type: none"> • using fluids <p><u>WARNING</u> Group B01F 35/11 is incomplete pending reclassification of documents from group B01F 35/10.- Groups B01F 35/10 and B01F 35/11 should be considered in order to perform a complete search.-</p>
M	B01F 35/12	<ul style="list-style-type: none"> • using mechanical means <p><u>WARNING</u> Groups B01F 35/12, B01F 35/121, B01F 35/122, and B01F 35/123 are incomplete pending reclassification of documents from group B01F 35/10.- All groups listed in this Warning should be considered in order to perform a complete search.-</p>
M	B01F 35/165	<ul style="list-style-type: none"> • {Making mixers or parts thereof} <p><u>WARNING</u> Group B01F 35/165 is incomplete pending reclassification of documents from group B01F 35/10.- Groups B01F 35/10 and B01F 35/165 should be considered in order to perform a complete search.-</p>

M	B01F 35/20	<ul style="list-style-type: none"> Measuring; Control or regulation <p><u>WARNING</u> Group B01F 35/20 is impacted by reclassification into group B01F 35/21. Groups B01F 35/20 and B01F 35/21 should be considered in order to perform a complete search.</p>
M	B01F 35/21	<ul style="list-style-type: none"> Measuring <p><u>WARNING</u> Group B01F 35/21 is incomplete pending reclassification of documents from group B01F 35/20. Groups B01F 35/20 and B01F 35/21 should be considered in order to perform a complete search.</p>
M	B01F 35/214	<ul style="list-style-type: none"> characterised by the means for measuring <p><u>WARNING</u> Groups B01F 35/214 -- B01F 35/2144 are incomplete pending reclassification of documents from group B01F 35/222. All groups listed in this Warning should be considered in order to perform a complete search.</p>
M	B01F 35/22	<ul style="list-style-type: none"> Control or regulation <p><u>WARNING</u> Group B01F 35/22 is impacted by reclassification into groups B01F 35/2201, B01F 35/2202, B01F 35/2203, B01F 35/2204, B01F 35/2205, B01F 35/2206, B01F 35/2207, B01F 35/2208 and B01F 35/2209. All groups listed in this Warning should be considered in order to perform a complete search.</p>
M	B01F 35/2201	<ul style="list-style-type: none"> {characterised by the type of control technique used} <p><u>WARNING</u> Groups B01F 35/2201 -- B01F 35/2209 are incomplete pending reclassification of documents from group B01F 35/222. All groups listed in this Warning should be considered in order to perform a complete search.</p>
M	B01F 35/222	<ul style="list-style-type: none"> of the operation of the driving system, e.g. torque, speed or power of motors; of the position of mixing devices or elements <p><u>WARNING</u> Group B01F 35/222 is impacted by reclassification into groups B01F 35/214, B01F 35/2142, B01F 35/2144 and B01F 35/2221. All groups listed in this Warning should be considered in order to perform a complete search.</p>
M	B01F 35/2221	<ul style="list-style-type: none"> (the position of baffles used to modify the flow in a conduit or a container) <p><u>WARNING</u> Group B01F 35/2221 is incomplete pending reclassification of documents from group B01F 35/222. Groups B01F 35/222 and B01F 35/2221 should be considered in order to perform a complete search.</p>
M	B01F 35/30	<ul style="list-style-type: none"> Driving arrangements; Transmissions; Couplings; Brakes <p><u>WARNING</u> Group B01F 35/30 is impacted by reclassification into group B01F 35/32.</p>

Groups B01F 35/30 and B01F 35/32 should be considered in order to perform a complete search.

M B01F 35/32

- Driving arrangements

WARNING

Group B01F 35/32 is incomplete pending reclassification of documents from group B01F 35/30.

Groups B01F 35/30 and B01F 35/32 should be considered in order to perform a complete search.

U B01F 35/50

- Mixing receptacles

U B01F 35/53

- characterised by the configuration of the interior, e.g. baffles for facilitating the mixing of components

M B01F 35/531

- {with baffles, plates or bars on the wall or the bottom}

WARNING

Groups B01F 35/531, B01F 35/5311, and B01F 35/5312 are incomplete pending reclassification of documents from group B01F 35/55.

All groups listed in this Warning should be considered in order to perform a complete search.

M B01F 35/55

- {Baffles; Flow breakers ([B01F 35/531](#) takes precedence)}

WARNING

Group B01F 35/55 is impacted by reclassification into groups B01F 27/63, B01F 35/531, B01F 35/5311 and B01F 35/5312.

All groups listed in this Warning should be considered in order to perform a complete search.

M B01F 35/71

- Feed mechanisms (with proportioning [B01F 35/80](#))

WARNING

Group B01F 35/71 is impacted by reclassification into groups B01F 35/711-B01F 35/71825, B01F 35/75-B01F 35/7549, B01F 35/80-B01F 35/896.

All groups listed in this Warning should be considered in order to perform a complete search.

M B01F 35/711

- {for feeding a mixture of components, i.e. solids in liquid, solids in a gas stream}

WARNING

Group B01F 35/711 is incomplete pending reclassification of documents from group B01F 35/71.

Groups B01F 35/71 and B01F 35/711 should be considered in order to perform a complete search.

M B01F 35/712

- {for feeding fluids}

WARNING

Group B01F 35/712 is incomplete pending reclassification of documents from group B01F 35/71.

Groups B01F 35/71 and B01F 35/712 should be considered in order to perform a complete search.

- M B01F 35/713
- {comprising breaking packages or parts thereof, e.g. piercing or opening sealing elements between compartments or cartridges (containers or packages *per se* [B65D](#))}
- WARNING**
Groups B01F 35/713 – B01F 35/7139 are incomplete pending reclassification of documents from group B01F 35/71.
All groups listed in this Warning should be considered in order to perform a complete search.
- M B01F 35/714
- {for feeding predetermined amounts ([B01F 35/88](#) takes precedence)}
- WARNING**
Groups B01F 35/714 – B01F 35/714112 are incomplete pending reclassification of documents from group B01F 35/71.
All groups listed in this Warning should be considered in order to perform a complete search.
- M B01F 35/715
- {Feeding the components in several steps, e.g. successive steps}
- WARNING**
Group B01F 35/715 is incomplete pending reclassification of documents from group B01F 35/71.
Groups B01F 35/71 and B01F 35/715 should be considered in order to perform a complete search.
- M B01F 35/716
- {characterised by the relative arrangement of the containers for feeding or mixing the components}
- WARNING**
Groups B01F 35/716 – B01F 35/7164 are incomplete pending reclassification of documents from group B01F 35/71.
All groups listed in this Warning should be considered in order to perform a complete search.
- M B01F 35/717
- {characterised by the means for feeding the components to the mixer}
- WARNING**
Groups B01F 35/717, B01F 35/7171, B01F 35/71715, B01F 35/7172, B01F 35/71725, B01F 35/7173, B01F 35/71735, B01F 35/7174, B01F 35/71745, B01F 35/7175, B01F 35/71755, B01F 35/717551, B01F 35/7176, B01F 35/71761, B01F 35/717611, B01F 35/717612, B01F 35/717613, B01F 35/717614, B01F 35/71765, B01F 35/7177, B01F 35/7178, B01F 35/71785, B01F 35/7179, B01F 35/71791, B01F 35/71795, B01F 35/718, B01F 35/71801, B01F 35/71805, B01F 35/718051, B01F 35/7181, B01F 35/71815, B01F 35/7182 and B01F 35/71825 are incomplete pending reclassification of documents from group B01F 35/71.
All groups listed in this Warning should be considered in order to perform a complete search.
- M B01F 35/71705
- • {using belts}
- WARNING**
Group B01F 35/71705 is incomplete pending reclassification of documents from group B01F 35/71.
Group B01F 35/71705 is also impacted by reclassification into groups B01F 35/71775 and B01F 35/71731.
All groups listed in this Warning should be considered in order to perform a complete search.
- U B01F 35/7173
- • {using gravity, e.g. from a hopper}

M B01F 35/71731 • • • {using a hopper}

WARNING

Group B01F 35/71731 is incomplete pending reclassification of documents from groups B01F 35/71 and B01F 35/71705.
Groups B01F 35/71, B01F 35/71705 and B01F 35/71731 should be considered in order to perform a complete search.

M B01F 35/71775 • • • {using helical screws}

WARNING

Group B01F 35/71775 is incomplete pending reclassification of documents from groups B01F 35/71 and B01F 35/71705.
Groups B01F 35/71, B01F 35/71705 and B01F 35/71775 should be considered in order to perform a complete search.

M B01F 35/75 • Discharge mechanisms

WARNING

Groups B01F 35/75 – B01F 35/7549 are incomplete pending reclassification of documents from group B01F 35/71.
All groups listed in this Warning should be considered in order to perform a complete search.

M B01F 35/80 • Forming a predetermined ratio of the substances to be mixed (controlling ratio of two or more flows of fluid or fluent material [G05D 11/02](#))

WARNING

Groups B01F 35/80 – B01F 35/896 are incomplete pending reclassification of documents from group B01F 35/71.
All groups listed in this Warning should be considered in order to perform a complete search.

Project: MP12266 (B04B)

U B04B 9/00 Drives specially designed for centrifuges; Arrangement or disposition of transmission gearing; Suspending or balancing rotary bowls

U B04B 9/14 • Balancing rotary bowls (balancing per se [G01M](#)); {Schrappers}

M B04B 9/146 • • {~~Unbalance~~*Imbalance* detection devices}

Project: RP12361 (B08B)

M B08B **CLEANING IN GENERAL; PREVENTION OF FOULING IN GENERAL**
(~~brushes A46; devices for domestic or like cleaning A47L; {cleaning golf-clubs or golf accessories A63B 57/60; cleaning grips of bats on rackets A63B 60/36} ; separation of particles from liquids or gases B01D; separation of solids B03, B07; spraying or applying liquids or other fluent materials to surfaces in general B05; cleaning devices for conveyors B65G 45/10; concurrent cleaning, filling and closing of bottles B67C 7/00; inhibiting corrosion or incrustation in general C23; cleaning streets, permanent ways, beaches or land E01H; parts, details or accessories of swimming or splash baths or pools, specially adapted for cleaning E04H 4/16; preventing or removing electrostatic charges H05F~~)

NOTE

This subclass ~~covers~~*does not cover* only inventions relating to cleaning which are usually classified according to one (or more) of the aspects mentioned below if they are ~~not~~*cleaning specially adapted for articles, substances, devices or surroundings provided that its cleaning aspects are* fully classifiable in *the relevant application place. Otherwise, classification is made in the most*

appropriate place in this subclass. a subclass a subclass providing for any of the following aspects:

- the articles cleaned, e.g. bed-pans, urinal or other sanitary devices for bed-ridden persons A61G 9/02, filters, semi-permeable membranes B01D, castings and moulds B22D 29/00, vehicles B60S, coke ovens C10B 43/00, building forms E04G, boilers F22, combustion apparatus F23, furnaces F27; the general nature of the cleaning, e.g. preparing for sugar manufacture A23N, domestic cleaning A47L, treatment of textiles D06, laundry D06F, air-conditioning F24F;
- the particular operation performed, e.g. filtering B01D, separating of solids B03, B07, sand-blasting B24C;
- the particular apparatus or device, e.g. brushes A46B, mops A47L, centrifuges B04, hand tools B25 { devices for cleaning paint-applying hand tools after use B44D 3/006 };
- the substance cleaned, e.g. metals B21C, C23, water C02, glass C03B, leather C14B, textile fibres D01;
- the substance removed (or prevented from depositing or forming) e.g. { removing paint B44D 3/00, e.g. } implements or apparatus for removing dry paint from surfaces B44D 3/16;
- chemical paint-removers C09D 9/00;
- preventing rust C23F;
- the substance used, e.g. macromolecular compounds or compositions C08, anti-icing materials C09K, detergents C11D;
- the operation in connection with which cleaning is done, e.g. metal rolling B21B, metal boring B23B, soldering B23K, textile fabrication D01G, D01H, D03J, D04B;
- the surroundings of a surface to be cleaned or kept clean, e.g. water in a boiler C02F, air in a room F24F.

WARNING

{In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.}

U	B08B 3/00	Cleaning by methods involving the use or presence of liquid or steam (B08B 9/00 takes precedence)
U	B08B 3/04	• Cleaning involving contact with liquid
M	B08B 3/08	• • the liquid having chemical or dissolving effect (substances used, see the relevant classes)
U	B08B 3/10	• • with additional treatment of the liquid or of the object being cleaned, e.g. by heat, by electricity or by vibration
M	B08B 3/12	• • • by sonic or ultrasonic vibrations (washing or rinsing machines for crockery or tableware using sonic or ultrasonic waves A47L 15/13; of natural teeth, of prostheses using ultrasonic techniques similar to those used for natural teeth A61C 17/20; application of ultrasonic vibrations to chemical, physical or physico-chemical processes in general B01J 19/10)
M	B08B 3/14	• • • Removing waste, e.g. labels, from cleaning liquid; (Regenerating cleaning liquids) (treatment of water in general C02F)
M	B08B 5/00	Cleaning by methods involving the use of air flow or gas flow (B08B 6/00 takes precedence <i>cleaning hollow articles by methods or apparatus specially adapted thereto B08B 9/00</i>)
M	B08B 5/04	• Cleaning by suction, with or without auxiliary action ((B08B 9/035 takes precedence;) suction cleaners A47L)
M	B08B 6/00	Cleaning by electrostatic means (domestic cleaning implements functioning electrostatically A47L 13/40; cleaning of grooved record carriers G11B 3/58)

- M B08B 9/00** Cleaning hollow articles by methods or apparatus specially adapted thereto **(B08B 6/00 takes precedence)**
- M B08B 9/02
- Cleaning pipes or tubes or systems of pipes or tubes (apparatus for cleaning metal pipes by chemical methods [C23G 3/04](#) ~~{; removing obstructions in waste pipes or sinks E03C 1/30; cleaning sewer pipes E03F 9/00; cleaning boreholes or wells E21B 37/00; cleaning furnace tubes, flues, chimneys F23J 3/02; cleaning heat-transfer conduits, e.g. water tubes of boilers F28G}~~)
- M B08B 9/021
- {Cleaning pipe ends or pipe fittings, e.g. before soldering ~~{grinding tube ends B24B 9/007}~~}
- M B08B 9/023
- • Cleaning the external ~~surface~~ [surfaces](#) ~~{(B08B 9/021 takes precedence)}~~
- M B08B 11/00** Cleaning flexible or delicate articles by methods or apparatus specially adapted thereto **(B08B 3/12, B08B 6/00 take precedence)**
- M B08B 11/04
- specially adapted for plate glass, e.g. prior to manufacture of windshields ~~{cleaning the gap between permanently secured panes E06B 3/677}~~
- M B08B 15/00** Preventing escape of dirt or fumes from the area where they are produced; Collecting or removing dirt or fumes from that area ~~{parts, details or accessories of cooking-vessels for withdrawing or condensing cooking vapours from such vessels A47J 36/38; refuse disposal B65F; devices for conducting smoke or fumes, e.g. flues, F23J 11/00; removing cooking fumes from domestic stoves or ranges F24C 15/20; air-conditioning; ventilation F24F}~~

Project: MP12350 (B21D)

- M B21D 37/00** Tools as parts of machines covered by this subclass ~~{forms or constructions of tools uniquely adapted for particular operations, see the relevant groups for the operations}~~
- M B21D 43/00** Feeding, positioning or storing devices combined with, or arranged in, or specially adapted for use in connection with, apparatus for working or processing sheet metal, metal tubes or metal profiles; Associations therewith of cutting devices ~~{cutting devices associated with the tool, see the relevant group for the tool}~~

Project: RP12464 (B22D)

- U B22D 45/00** Equipment for casting, not otherwise provided for
- M B22D 45/005
- {Evacuation of fumes, dust or waste gases during manipulations in the foundry (during steel manufacture [C21C 5/38](#); evacuation from furnaces ~~F27D 17/001~~ [F27D 17/30](#))}

Project: MP12337 (B23G)

- U B23G 1/00** Thread cutting; Automatic machines specially designed therefor
- U B23G 1/26
- Manually-operated thread-cutting devices (features of the threading tool per se [B23G 5/00](#))
- M B23G 1/30
- • without means for adjusting the threading tool, e.g. with die-~~stock~~ [stocks](#) (tap wrenches [B25B](#))

Project: MP12461 (B23K)

- M B23K 37/00** Auxiliary devices or processes, not specially adapted ~~to for~~ a procedure covered by only one of the ~~preceding main groups~~ *other main groups of this subclass* (~~{laser protective screens B23K 26/706;}~~ eye-shields for welders worn on the operator's body or carried in the hand ~~A61F 9/00~~ *{, i.e. A61F 9/02}*; applicable to metal-working machines other than soldering, welding, or flame-cutting machines ~~B23Q; {laser protective screens B23K 26/706; }~~ *protective shields for other welding methods F16P 1/06; other protective shields F16P 1/06*)
- M B23K 37/003** ~~{Cooling means}~~ *Cooling means for welding or cutting*
- M B23K 37/006** ~~{Safety devices}~~ *Safety devices for welding or cutting*
- U B23K 37/02** ~~{Carriages for supporting the welding or cutting element}~~
- U B23K 37/04** ~~{for holding or positioning work}~~
- U B23K 37/047** ~~{moving work to adjust its position between soldering, welding or cutting steps (B23K 37/053 takes precedence)}~~
- U B23K 37/053** ~~{aligning cylindrical work; Clamping devices therefor}~~
- M B23K 37/0531** ~~{internal}~~ *Internal* pipe alignment clamps}
- M B23K 37/0533** ~~{external}~~ *External* pipe alignment clamps}
- M B23K 37/0535** ~~{longitudinal}~~ *Longitudinal* pipe seam alignment clamps}
- M B23K 37/0536** ~~{for maintaining flanges on tubes}~~
- M B23K 37/0538** ~~{for rotating tubes, e.g. rollers}~~
- U B23K 37/06** ~~{for positioning the molten material, e.g. confining it to a desired area}~~
- U B23K 37/08** ~~{for flash removal}~~

Project: Unknown (B23P)

- U B23P 11/00** Connecting or disconnecting metal parts or objects by metal-working techniques not otherwise provided for (connecting sheet metal or metal tubes, rods or profiles ~~B21D 39/00~~; riveting ~~B21J~~; soldering, unsoldering, welding ~~B23K~~; hand tools for connecting wire or strip ~~B25B 25/00~~; connecting metal parts by adhesives ~~F16B 11/00~~)
- M B23P 11/02** ~~{by first expanding and then shrinking or vice-versa; vice versa, e.g. by using pressure fluids; by making force fits}~~

Project: MP12350 (B23Q)

- U B23Q 11/00** Accessories fitted to machine tools for keeping tools or parts of the machine in good working condition or for cooling work (~~{accessories specially designed for sawing machines or sawing devices B23D 59/00}~~; Safety devices specially combined with or arranged in, or specially adapted for use in connection with, machine tools (in respect of boring or drilling machines ~~B23B 47/32~~ takes precedence; safety devices in general ~~F16P~~)
- M B23Q 11/10** ~~{Arrangements for cooling or lubricating tools or work-(incorporated in tools, see the relevant subclass for the tool {, e.g. B23B 27/10, B23B 51/06, B23C 5/28, B23D 77/006; for circular saw blades B23D 59/02, for cooling grinding surfaces B24B 55/02})}~~

Project: RP12361 (B24B)

- U B24B 9/00** Machines or devices designed for grinding edges or bevels on work or for removing burrs; Accessories therefor (~~B24B 21/00~~ takes precedence; for sharpening cutting edges on tools ~~B24B 3/00~~; removing burrs by loose abrasive material ~~B24B 31/00~~)

- M B24B 9/007 • {for end faces of tubes ~~(cleaning pipe ends or pipe fittings, e.g. before soldering B08B 9/021)~~}

Project: Unknown (B24B)

- U B24B 27/00 Other grinding machines or devices
- M B24B 27/0076 • {grinding machines comprising ~~two or more~~ *two or more* grinding tools}

Project: Unknown (B25B)

- U B25B 27/00 Hand tools, specially adapted for fitting together or separating parts or objects whether or not involving some deformation, not otherwise provided for (machines for simply fitting together or separating metal parts or objects [B23P 19/00](#))
- U B25B 27/0035 • {for motor-vehicles (wrenches for mounting or dismounting wheels [B60B 29/003](#))}
- M B25B 27/0057 • {for screwing or unscrewing ~~tire~~*tyre* valve caps}

Project: MP12467 (B25J)

- M B25J 1/00 Manipulators positioned in space by hand (~~of master-slave type B25J 3/00; of leader-follower type B25J 3/00~~; micromanipulators [B25J 7/00](#))
- M B25J 3/00 Manipulators of ~~master-slave~~*leader-follower* type, i.e. both controlling unit and controlled unit perform corresponding spatial movements
- M B25J 3/02 • involving a parallelogram coupling of the ~~master and slave~~*leader and follower* units (pantographic instruments [B43L 13/00](#))
- U B25J 9/00 Programme-controlled manipulators
- M B25J 9/0081 • {with ~~master~~*leader* teach-in means}

Project: MP12350 (B27B)

- M B27B 1/00 Methods for subdividing trunks or logs essentially involving sawing (~~features of machines used, see the relevant groups for the machines~~)
- M B27B 29/00 Gripping, clamping, or holding devices for the trunk or log in saw mills or sawing machines (~~for other timber, see the relevant groups for the machines~~; safety guards or devices specially designed for wood saws [B27G 19/00](#)); Travelling trunk or log carriages {(for logs being held in a cantilever manner [B27B 17/0075](#))}

Project: Unknown (B29C)

- U B29C 48/00 Extrusion moulding, i.e. expressing the moulding material through a die or nozzle which imparts the desired form; Apparatus therefor (extrusion blow-moulding [B29C 49/04](#))

- B29C 48/022 • {characterised by the choice of material}

NOTE

{When classifying in this group, it is desirable to add the indexing codes of subclass [B29K](#) to identify the moulding materials and their properties. Documents concerning the choice of moulding materials having a particular influence on the moulding technique should be classified in this group if of interest.}

Project: RP12290 (B29C)

- U B29C 48/25 • Component parts, details or accessories; Auxiliary operations

- U B29C 48/285 . . Feeding the extrusion material to the extruder
- U B29C 48/288 . . . {in solid form, e.g. powder or granules}
- M B29C 48/2883 {of preformed parts, e.g. inserts ~~fed and transported generally uninfluenced through the extruder or inserts fed directly to the die,~~ *retaining their shape during the extrusion process*}
- M B29C 48/2886 {of ~~fibrous, filamentary or filling~~ *fillers or of fibrous* materials, e.g. ~~thin fibrous reinforcements or fillers~~ *short-fibre reinforcements*}
- M B29C 48/2888 {in ~~band~~ *thread form* or in strip form, e.g. rubber strips}
- U B29C 48/36 . . Means for plasticising or homogenising the moulding material or forcing it through the nozzle or die
- U B29C 48/49 . . . using two or more extruders to feed one die or nozzle
- M B29C 48/495 ~~Feed-blocks~~ *Feedblocks* (extrusion moulding of multi-component articles [B29C 48/16](#))
- U B29C 48/88 . . Thermal treatment of the stream of extruded material, e.g. cooling

NOTE

When classifying in this group, forms or shapes of products are further classified in groups [B29C 48/03](#) - [B29C 48/13](#)

- U B29C 48/885 . . . External treatment, e.g. by using air rings for cooling tubular films
- U B29C 48/89 . . . Internal treatment, e.g. by applying an internal cooling fluid stream
- U B29C 48/91 . . . Heating, e.g. for cross linking
- U B29C 48/9105 {of hollow articles}
- U B29C 48/911 {Cooling}
- U B29C 48/9115 {of hollow articles}
- U B29C 48/912 {of tubular films}
- D B29C 48/9125 {internally}
- <administratively transferred to [B29C 48/89](#) and [B29C 48/912](#)>
- D B29C 48/913 {externally}
- <administratively transferred to [B29C 48/885](#) and [B29C 48/912](#)>
- U B29C 48/9135 {of flat articles, e.g. using specially adapted supporting means}
- M B29C 48/914 {~~cooling~~ *Cooling* drums}

Project: Unknown (B29D)

- U B29D 30/00 **Producing pneumatic or solid tyres or parts thereof (producing inner tubes [B29D 23/24](#); constructional form of tyres or parts thereof [B60C](#); connection of valves to inflatable elastic bodies [B60C 29/00](#); testing of tyres [G01M 17/02](#))**
- M B29D 30/005 . {General arrangement or lay-out of plants for the processing of tyres or parts thereof (~~round cores or cylindrical drums arranged for a single sequence of tire building operations~~ [B29D 30/10](#), [B29D 30/20](#); vulcanization presses [B29D 30/0601](#); *round cores or cylindrical drums arranged for a single sequence of tyre building operations* [B29D 30/10](#), [B29D 30/20](#))}
- U B29D 30/06 . Pneumatic tyres or parts thereof {(e.g. produced by casting, moulding, compression moulding, injection moulding, centrifugal casting)}
- U B29D 30/08 . . Building tyres
- U B29D 30/10 . . . on round cores, i.e. the shape of the core is approximately identical with the shape of the completed tyre
- U B29D 30/16 Applying the layers; Guiding or stretching the layers during application {(applying tread bands to carcasses [B29D 30/58](#); retreading [B29D 30/54](#))}

- U B29D 2030/1664 {Details, accessories or auxiliary operations not provided for in the other subgroups of [B29D 30/00](#)}
- M B29D 2030/1671 {Venting air inclusions during the layer applications, e.g. by creating grooves, channels, passages; *or* holes in the band-like *tire* *tyre* component to be applied}
- U B29D 30/20 . . . by the flat-tyre method, i.e. building on cylindrical drums
- U B29D 30/30 Applying the layers; Guiding or stretching the layers during application {(applying tread bands to carcasses [B29D 30/58](#); retreading [B29D 30/54](#))}
- U B29D 2030/3064 {Details, accessories and auxiliary operations not otherwise provided for}
- M B29D 2030/3071 {Venting air inclusions during the layer applications, e.g. by creating grooves, channels, passages; *or* holes in the band-like *tire* *tyre* component to be applied}

Project: Unknown (B60B)

- U B60B 15/00** **Wheels or wheel attachments designed for increasing traction (vehicle tires [B60C](#); non-skid devices temporarily attachable to resilient tires or resiliently-tired wheels [B60C](#))**
- U B60B 15/02 . Wheels with spade lugs
- M B60B 15/08 . . with spade lugs axially displaced relatively to the tread surface of the *tire* *tyre*
- U B60B 15/26 . Auxiliary wheels or rings with traction-increasing surface attachable to the main wheel body
- M B60B 15/263 . . {Traction increasing surface being located axially beside *tire* *tyre*}
- M B60B 15/266 . . {Traction increasing surface being located radially outside *tire* *tyre* circumferential surface}
- U B60B 33/00** **Castors in general; {Anti-clogging castors}{castors for large containers [B65D 90/18](#)}**
- U B60B 33/0078 . {characterised by details of the wheel braking mechanism}
- M B60B 33/0081 . . {acting on *tire* *tyre* tread}
- U B60B 2900/00** **Purpose of invention**
- U B60B 2900/50 . Improvement of
- M B60B 2900/521 . . *Tire* *Tyre* mounting or removal (*devices therefor [B60B 2340/50](#)*)
- M B60B 2900/523 . . *Tire* *Tyre* fixation on rim, e.g. fixing axially or circumferentially thereon

Project: RP12458 (B60K)

- M B60K** **ARRANGEMENT OR MOUNTING OF PROPULSION UNITS OR OF TRANSMISSIONS IN VEHICLES; ARRANGEMENT OR MOUNTING OF PLURAL DIVERSE PRIME-MOVERS IN VEHICLES; AUXILIARY DRIVES FOR VEHICLES; INSTRUMENTATION OR DASHBOARDS FOR VEHICLES; ARRANGEMENTS IN CONNECTION WITH COOLING, AIR INTAKE, GAS EXHAUST OR FUEL SUPPLY OF PROPULSION UNITS IN VEHICLES**

NOTES

1. In this subclass, the following terms or expressions are used with the meanings indicated:

- "conjoint control of drive units" includes such control for vehicles or of general applicability;
- "auxiliary drives" means drives of auxiliary or external machines or devices from the propulsion unit, transmission, or other parts of the vehicle, and includes the control of such drives;

- "transmission" means all propulsion parts linking propulsion units, e.g. engines, to ultimate propulsive elements, e.g. wheels;
- "drive unit" means propulsion unit conjoint with transmission, a "drive unit" can additionally include the ultimate driven unit;
- "sub-unit" means, e.g. propulsion unit, clutch, gearing or brake system;
- "hybrid vehicle" means vehicles with plural diverse prime-movers for mutual or common propulsion

2. Attention is drawn to the Note following the title of class [B60](#)

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme:

- | | | |
|---|-----------|--|
| M | B60K 1/00 | Arrangement or mounting of electrical propulsion units (B60K 7/00 takes precedence; arrangement or mounting of plural diverse prime-movers for mutual or common propulsion B60K 6/00 ; electric transmission arrangements B60K 17/12; electric equipment or propulsion of electrically-propelled vehicles per se B60L; current-collectors for power supply lines of electrically-propelled vehicles B60L 5/00) |
| M | B60K 1/04 | • of the electric storage means for propulsion (exchanging batteries for electric propulsion of vehicles B60L 53/80; for auxiliary purposes only B60R 16/04; supplying batteries to, or removing batteries from, vehicles B60S 5/06) |
| M | B60K 3/00 | Arrangement or mounting of steam or gaseous-pressure propulsion units (B60K 7/00 takes precedence; arrangement or mounting of plural diverse prime-movers for mutual or common propulsion B60K 6/00 ; gaseous-pressure transmission arrangements B60K 17/10) |
| U | B60K 5/00 | Arrangement or mounting of internal-combustion or jet-propulsion units (B60K 7/00 takes precedence; arrangement or mounting of plural diverse prime-movers for mutual or common propulsion B60K 6/00) |
| M | B60K 5/12 | • Arrangement of engine supports (supports comprising both a plastic spring and a fluid damper F16F 13/06) |
| M | B60K 6/00 | Arrangement or mounting of plural diverse prime-movers for mutual or common propulsion, e.g. hybrid propulsion systems comprising electric motors and internal combustion engines {; Control systems therefor, i.e. systems controlling two or more prime movers, or controlling one of these prime movers and any of the transmission, drive or drive units } (arrangement or mounting in vehicles of electrical gearing, in which an electrical machine serves only as reduction gearing and not as the prime mover and in which no electrical storing means are used B60K 17/12; control and regulation of purely electrical prime movers B60L; prime-movers comprising electrical and internal combustion motors in a common engine block or housing per se F02B 65/00; electric motors or motor-generators used for starting the combustion engine F02N 11/04; electric motors for synchronising gearing F16H 3/12 }) {Informative references: mechanical gearings with secondary electric drive F16H 3/72; arrangements for handling mechanical energy structurally associated with the dynamo-electric machine H02K 7/00; machines comprising structurally interrelated motor and generator parts H02K 51/00; dynamo-electric machines not otherwise provided for in H02K <u>see</u> H02K 99/00} |

NOTE

In this subgroup, the following expressions are used, with the meanings indicated :

- "energy storing means" means apparatus for storing propulsive energy and providing stored energy to drive the prime mover or the ultimate propulsive elements

- "hybrid electric vehicle" (HEV) means a vehicle with an electrical prime mover and a combustion engine, in which the electrical prime mover and the combustion engine either singly or in combination, drive the ultimate propulsive elements, e.g. wheels
- "motor-generator" means an electric motor, or an electric generator, or an electrical machine which can be used for both functions, as a motor or a generator
- "prime mover" means a propulsion unit or source of motive power providing a mechanical output, e.g. via a rotating shaft

U B60K 6/20

- the prime-movers consisting of electric motors and internal combustion engines, e.g. HEVs

NOTE

When classifying in one of groups [B60K 6/22](#), [B60K 6/42](#) or [B60K 6/50](#), further technical information, which is considered to represent information of interest for search, should also be classified in the other subgroups of main group [B60K 6/00](#) to enable searching using a combination of classification symbols

U B60K 6/22

- characterised by apparatus, components or means specially adapted for HEVs

M B60K 6/38

- characterised by the driveline clutches (shift clutches within the gearing or transmission [B60K 6/36](#)—{, [B60K 6/54](#)})

M B60K 7/00

Disposition of motor in, or adjacent to, traction wheel (~~roller-skate driving mechanisms A63C 17/12~~)

M B60K 11/00

Arrangement in connection with cooling of propulsion units (~~heating the interior space B60H; cooling internal combustion engines per se F01P~~)

M B60K 11/08

- Air inlets for cooling; Shutters or blinds therefor (~~radiator or grille guards B60R 19/52~~)

M B60K 13/00

Arrangement in connection with combustion air intake or gas exhaust of propulsion units (~~extensions for melting snow or ice on roads or like surfaces E01H 5/00, E01H 6/00; forming part of the engine F01N; supplying combustion engines with combustible mixtures or constituents F02M~~)

M B60K 13/04

- concerning exhaust (~~collecting exhaust gases with central suction systems not forming part of vehicles, e.g. in workshops or tunnels B08B 15/002, otherwise along carriageways E01C 1/005;~~) extensions for melting snow on roads E01H 5/00, E01H 6/00; exhaust or silencing apparatus for internal combustion engines per se F01N; (pipes, joints or supports therefor F16L))

M B60K 15/00

Arrangement in connection with fuel supply of combustion engines {or other fuel consuming energy converters, e.g. fuel cells}; Mounting or construction of fuel tanks (~~tanks in general B65D, F17C; supplying combustion engines with combustible mixtures or constituents F02M~~)

M B60K 15/01

- Arrangement of fuel conduits (~~chassis frame forming fluid conduit means B62D 21/17~~)

M B60K 15/03

- Fuel tanks (~~chassis frame comprising fluid storage compartment B62D 21/16—{; Details of the fuel feeding system related to the fuel tank F02M 37/0076}~~)

M	B60K 16/00	<p>Arrangements in connection with power supply of propulsion units in vehicles from forces of nature, e.g. sun or wind (electric propulsion with power supply from forces of nature, e.g. sun or wind, B60L 8/00; marine propulsion by wind motors driving water-engaging propulsive elements B63H 13/00; wind motors specially adapted for installation on vehicles F03D 9/32)</p> <p><u>NOTE</u></p> <p>When classifying in this group, details of sail or rigging arrangements which are suited for marine wind propulsion are also classified in the relevant groups of subclass B63H, e.g. in groups B63H 8/00, B63H 9/04.</p>
M	B60K 17/00	<p>Arrangement or mounting of transmissions in vehicles (clutches per se, e.g. construction thereof, F16D; gearing per se, e.g. construction thereof, F16H)</p>
M	B60K 17/04	<ul style="list-style-type: none"> characterised by arrangement, location, or kind of gearing (electric equipment or propulsion of electrically-propelled vehicles B60L)
M	B60K 17/10	<ul style="list-style-type: none"> of fluid gearing (of fluid clutches B60K 17/02)
M	B60K 17/12	<ul style="list-style-type: none"> of electric gearing (of electrically-actuated clutches B60K 17/02)
M	B60K 17/14	<ul style="list-style-type: none"> the motor of fluid or electric gearing being disposed in, or adjacent to, traction wheel (B60K 7/00 takes precedence)
M	B60K 17/34	<ul style="list-style-type: none"> for driving both front and rear wheels, e.g. four wheel drive vehicles (arrangement or mounting of control devices for changing number of driven wheels B60K 23/08)
U	B60K 17/348	<ul style="list-style-type: none"> having differential means for driving one set of wheels, e.g. the front, at one speed and the other set, e.g. the rear, at a different speed (B60K 17/346 takes precedence)
M	B60K 17/35	<ul style="list-style-type: none"> including arrangements for suppressing or influencing the power transfer, e.g. viscous clutches (differential gearing with locking devices {F16H 48/20})
M	B60K 17/356	<ul style="list-style-type: none"> having fluid or electric motor, for driving one or more wheels (disposition of motor in, or adjacent to, traction wheel B60K 7/00)
M	B60K 20/00	<p>Arrangement or mounting of change-speed gearing control devices in vehicles (movable cabs having special adaptations of vehicle control devices B62D 33/06; such control devices per se F16H)</p>
M	B60K 20/02	<ul style="list-style-type: none"> of initiating means (control mechanisms in general G05G)
M	B60K 23/00	<p>Arrangement or mounting of control devices for vehicle transmissions, or parts thereof, not otherwise provided for (movable cabs having special adaptations of vehicle control devices B62D 33/06; such control devices per se F16D, F16H)</p>
M	B60K 25/00	<p>Auxiliary drives (B60K 16/00 takes precedence; arrangements of tyre-inflating pumps mounted on vehicles B60C 23/10; driving tyre-inflating pumps B60C; driving engine auxiliaries F02B arrangement of tyre-inflating pumps mounted on vehicles B60C 23/10)</p>
M	B60K 25/06	<ul style="list-style-type: none"> from the transmission power take-off (transmissions having power take-off B60K 17/28)
M	B60K 25/10	<ul style="list-style-type: none"> directly from oscillating movements due to vehicle running motion, e.g. suspension movement (resilient suspensions having dampers accumulating utilisable energy, e.g. compressing air, B60G 13/14)

M	B60K 28/00	<p>Safety devices for propulsion-unit control, specially adapted for, or arranged in, vehicles, e.g. preventing fuel supply or ignition in the event of potentially dangerous conditions (for electrically-propelled vehicles B60L 3/00; road vehicle drive control systems for purposes not related to the control of a particular sub-unit B60W 30/00; drive control systems specially adapted for autonomous road vehicles B60W 60/00 <i>electric safety devices on electrically-propelled vehicles B60L 3/00</i>)</p> <p><u>WARNING</u></p> <p>Groups B60K 28/00 - B60K 28/165 are impacted by reclassification into groups B60W 60/00 - B60W 60/007, B60W 2300/00 - B60W 2530/213, B60W 2540/041 - B60W 2540/049, B60W 2552/00 - B60W 2556/65, B60W 2710/00 - B60W 2720/406, and B60W 2754/00 - B60W 2900/00.</p> <p>All groups listed in this Warning should be considered in order to perform a complete search.</p>
U	B60K 28/10	<ul style="list-style-type: none"> • responsive to conditions relating to the vehicle
M	B60K 28/16	<ul style="list-style-type: none"> • responsive to, or preventing, <i>spinning or</i> skidding of wheels (brake control systems for vehicle drive stability B60T 8/1755; arrangements responsive to a speed condition for adjusting wheel braking force B60T 8/32; control of vehicle driving stability otherwise than by controlling the propulsion unit only B60W 30/02; preventing wheel slippage by reducing power in rail vehicles B61C 15/00)
M	B60K 28/165	<ul style="list-style-type: none"> • {acting on elements of the vehicle drive train other than the propulsion unit and brakes, e.g. transmission, clutch, differential (acting on brakes B60T 8/17)}
M	B60K 31/00	<p>Vehicle fittings, acting on a single sub-unit only, for automatically controlling vehicle speed, i.e. preventing speed from exceeding an arbitrarily established velocity or maintaining speed at a particular velocity, as selected by the vehicle operator (fittings acting on two or more sub-units B60W 30/14; speedometers G01P; systems or devices for controlling speed in general G05D 13/00 {-; in traffic anti-collision system for road vehicles G08G 1/16})</p> <p><u>NOTE</u></p> <p>In this group:</p> <ul style="list-style-type: none"> • the means ordinarily includes a device, e.g. a servomechanism, for operating a velocity-affecting element of the vehicle, e.g. the throttle; • a means for preventing a vehicle from exceeding a particular speed is often referred to as a "governor", whereas a means for maintaining the vehicle within a relatively narrow speed range is generally designated as "speed control". Since these two functions are frequently interrelated, no attempt has been made to identify such means as being particularly adapted to perform only one, or the other of the functions.
T	B60K 31/0066	<ul style="list-style-type: none"> • {responsive to vehicle path curvature}
D	B60K 31/0083	<ul style="list-style-type: none"> • {responsive to centrifugal force acting on vehicle due to the path it is following} <p><administratively transferred to B60K 31/0066 INV and B60K 31/12 INV></p>
T	B60K 31/12	<ul style="list-style-type: none"> • including a device responsive to centrifugal forces <i>{force (centrifugal force acting on the vehicle due to the path it is following B60K 31/0083, motor speed limiting by governors G05D 13/10)}</i>
M	B60K 31/16	<ul style="list-style-type: none"> • having means to prevent or discourage unauthorised use or adjusting of the controlling means ({(vehicle theft prevention in general B60R 25/00)})

- M B60K 31/18
 - including a device to audibly, visibly, or otherwise signal the existence of unusual or unintended speed ~~{to the driver of the vehicle (devices primarily intended for indicating speed to other traffic B60Q 1/54)}~~
- M B60K 31/185
 - {connected to the speedometer display, e.g. by sensors or switches responsive to the position of the indicator needle ~~(arrangement of pointers in automobile speedometers for indicating predetermined speeds by the detection of the position of the indicator needle G01P 1/11)}~~}

Project: Unknown (B60L)

- U B60L 7/00** **Electrodynamic brake systems for vehicles in general**
- U B60L 7/02
 - Dynamic electric resistor braking (B60L 7/22 takes precedence)
- M B60L 7/04
 - • for vehicles propelled by ~~de~~DC motors
- M B60L 7/06
 - • for vehicles propelled by ~~ae~~AC motors
- U B60L 7/10
 - Dynamic electric regenerative braking (B60L 7/22 takes precedence)
- M B60L 7/12
 - • for vehicles propelled by ~~de~~DC motors
- M B60L 7/14
 - • for vehicles propelled by ~~ae~~AC motors
- U B60L 9/00** **Electric propulsion with power supply external to the vehicle (electric propulsion for monorail vehicles, suspension vehicles or rack railways B60L 13/00; in combination with batteries or fuel cells within the vehicle B60L 50/53)**
- M B60L 9/02
 - using ~~de~~DC motors
- M B60L 9/04
 - • fed from ~~de~~DC supply lines
- M B60L 9/08
 - • fed from ~~ae~~AC supply lines
- M B60L 9/16
 - using ~~ae~~AC induction motors
- M B60L 9/18
 - • fed from ~~de~~DC supply lines
- M B60L 9/24
 - • fed from ~~ae~~AC supply lines
- M B60L 9/32
 - using ~~ae~~AC brush displacement motors
- U B60L 15/00** **Methods, circuits, or devices for controlling the traction-motor speed of electrically-propelled vehicles**
- U B60L 15/02
 - characterised by the form of the current used in the control circuit
- M B60L 15/04
 - • using ~~de~~DC
- M B60L 15/06
 - • using substantially sinusoidal ~~ae~~AC

Project: RP0731-F (B60R)

- M B60R 1/00** **Optical viewing arrangements; Real-time viewing arrangements for drivers or passengers using optical image capturing systems, e.g. cameras or video systems specially adapted for use in or on vehicles**

NOTE

This group covers optical viewing arrangements using mirrors as well as real-time viewing arrangements using optical image capturing systems, e.g. the special adaptation of cameras or video systems in or on vehicles, for assisting drivers or passengers. In this context, "viewing" refers to a visual assistance of drivers or passengers using mirrors, cameras or the like.

WARNING

Group B60R 1/00 is impacted by reclassification into groups B60R 1/20, B60R 1/22, B60R 1/23, B60R 1/24, B60R 1/25, B60R 1/26, B60R 1/27, B60R 1/28, B60R 1/29, B60R 1/30 and B60R 1/31.

All groups listed in this Warning should be considered in order to perform a complete search.

- M B60R 1/20
- Real-time viewing arrangements for drivers or passengers using optical image capturing systems, e.g. cameras or video systems specially adapted for use in or on vehicles

WARNING

Groups B60R 1/20 — B60R 1/31 are incomplete pending reclassification of documents from group B60R 1/00.
All groups listed in this Warning should be considered in order to perform a complete search.

Project: Unknown (B60T)

- U B60T 8/00 Arrangements for adjusting wheel-braking force to meet varying vehicular or ground-surface conditions, e.g. limiting or varying distribution of braking force (by changing number of effective brake cylinders in power brake systems [B60T 17/10](#))
- U B60T 8/17
- Using electrical or electronic regulation means to control braking {(detecting or indicating faulty operation [B60T 8/885](#))}
- U B60T 8/1755
- Brake regulation specially adapted to control the stability of the vehicle, e.g. taking into account yaw rate or transverse acceleration in a curve (road vehicle drive control systems for control of driving stability otherwise than by controlling a particular sub-unit [B60W 30/02](#))
- M B60T 8/17552
- {responsive to the ~~tire~~tyre sideslip angle or the vehicle body slip angle}
- M B60T 2240/00 Monitoring, detecting wheel/~~tire~~tyre behaviour; counteracting thereof
- M B60T 2240/03
- ~~Tire~~ Tyre sensors
- M B60T 2240/04
- ~~Tire~~ Tyre deformation
- M B60T 2240/07
- ~~Tire~~ Tyre tolerance compensation
- U B60T 2270/00 Further aspects of brake control systems not otherwise provided for
- M B60T 2270/86
- Optimizing braking by using ESP vehicle or ~~tire~~tyre model

Project: Unknown (B60W)

- U B60W 2422/00 Indexing codes relating to the special location or mounting of sensors
- WARNING**
- Groups [B60W 2422/00](#) - [B60W 2422/95](#) are incomplete pending reclassification of documents from groups [G05D 1/0061](#), [G05D 1/0088](#), [G05D 1/021](#), [G05D 1/0214](#), [G05D 1/0221](#), and [G05D 1/0223](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- M B60W 2422/70
- on the wheel or the ~~tire~~tyre

Project: MP12350 (B62K)

- M B62K 19/00 Cycle frames ~~(cycle frames specially adapted for one particular kind of cycle specified in groups B62K 1/00 - B62K 17/00, see the relevant group)~~

NOTE

Cycle frames specially adapted for one particular kind of cycle specified in groups [B62K 1/00](#) - [B62K 17/00](#), see the relevant group.

M B62K 21/00 **Steering devices** ~~(steering devices specially adapted for one particular kind of cycle specified in groups B62K 1/00 - B62K 17/00, see the relevant group)~~

NOTE

Steering devices specially adapted for one particular kind of cycle specified in groups [B62K 1/00](#) - [B62K 17/00](#), see the relevant group.

Project: RP12459 (B64D)

M B64D **EQUIPMENT FOR FITTING IN OR TO AIRCRAFT; FLIGHT SUITS; PARACHUTES; ARRANGEMENT OR MOUNTING OF POWER PLANTS OR PROPULSION TRANSMISSIONS IN AIRCRAFT**

WARNING

1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:

B64D 15/18	covered by	B64D 15/16
B64D 25/102	covered by	B64D 25/10
B64D 25/105	covered by	B64D 25/10
B64D 25/108	covered by	B64D 25/10
B64D 25/11	covered by	B64D 25/10
B64D 25/112	covered by	B64D 25/10
B64D 25/115	covered by	B64D 25/10
B64D 25/118	covered by	B64D 25/10

2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

M B64D 1/00 **Dropping, ejecting, releasing, or receiving articles, liquids, or the like, in flight** ~~(with respect to weapon sights devices F41G takes precedence; parachutes per se B64D 17/00; ejectable seats B64D 25/10; ejectable capsules B64D 25/12; refuelling during flight B64D 39/00; launching apparatus for projecting projectiles or missiles F41F 1/00, F41F 7/00; rocket or torpedo launchers F41F 3/00; weapon sights or aiming F41G)~~

U B64D 1/02 • Dropping, ejecting, or releasing articles (jettisonable fuel reservoirs [B64D 37/12](#))

M B64D 1/04 • • the articles being explosive, e.g. bombs ~~(arming or setting bomb fuzes F42G)~~

U B64D 1/16 • Dropping or releasing powdered, liquid, or gaseous matter, e.g. for fire-fighting (jettisoning fuel [B64D 37/26](#))

M B64D 1/18 • • by spraying, e.g. insecticides ~~(spraying apparatus per se B05B)~~

M B64D 3/00 **Aircraft adaptations to facilitate towing or being towed** ~~(B64D 39/00 takes precedence)~~

M B64D 5/00 **Aircraft transported by aircraft, e.g. for release or reberthing during flight** ~~(flying units formed by separate aircraft B64C 37/02)~~

M B64D 7/00 **Arrangements** *Arrangement* of military equipment, e.g. armaments, armament accessories; or military shielding, in aircraft; Adaptations of armament mountings for aircraft (dropping bombs or the like [B64D 1/00](#); ~~armaments or mountings therefor per se F41~~)

M B64D 7/08 • *Arrangements* *Arrangement* of rocket launchers ~~(or releasing means)(rocket launchers per se, e.g. rocket pods, F41F 3/06)~~

M	B64D 9/00	Equipment for handling freight; Equipment for facilitating passenger embarkation or the like (emergency equipment B64D 17/00, B64D 19/00, B64D 25/00; structures integral with fuselage to facilitate loading, fuselage floors specially adapted for freight, steps mounted on and retractable within aircraft B64C; ground installations B64F)
M	B64D 9/003	• {Devices for retaining pallets or freight containers (securing freight containers on vehicles B60P 7/00) }
M	B64D 10/00	Flight suits (helmets in general A42B 3/00; breathing helmets A62B 18/00)
U	B64D 11/00	Passenger or crew accommodation; Flight-deck installations not otherwise provided for
M	B64D 11/0023	• {Movable or removable cabin dividers, e.g. for class separation (bulkheads B64C 1/10) }
M	B64D 11/02	• Toilet fittings (of general application A47K)
M	B64D 13/00	Arrangements or adaptations of air-treatment apparatus for aircraft crew or passengers, or freight space {, or structural parts of the aircraft} (treatment rooms with artificial climate for medical purposes A61G 10/02; respiratory apparatus in general A62B; for vehicles in general B60H)
M	B64D 15/00	De-icing or preventing icing on exterior surfaces of aircraft (motor vehicles specially adapted for carrying de-icing equipment B60P)
U	B64D 15/02	• by ducted hot gas or liquid
M	B64D 15/06	• • Liquid application (in general B05)
M	B64D 15/12	• by electric heating (electric heating elements in general H05B heating arrangements specially adapted for transparent or reflecting areas H05B 3/84)
M	B64D 15/16	• by mechanical means, <i>e.g. pulsating mats or shoes attached to, or built into, surface</i>
M	B64D 17/00	Parachutes (non-canopied parachutes B64D 19/00) <i>non-canopied parachutes B64D 19/00</i>
M	B64D 17/02	• Canopy arrangement or construction NOTE <i>{B64D 17/025 takes precedence over B64D 17/04 - B64D 17/18 B64D 17/20}</i>
U	B64D 17/22	• Load suspension
M	B64D 17/30	• • Harnesses (harnesses per se A62B)
M	B64D 25/00	Emergency apparatus or devices, not otherwise provided for (parachutes B64D 17/00, B64D 19/00; jettisoning of fuel tanks or fuel per se B64D 37/00; {specially adapted for protection against criminal attack, e.g. anti-hijacking systems B64D 45/0015}; safety belts or body harnesses in general A62B 35/00; safety belts or body harnesses for land vehicles B60R 22/00; jettisonable parts of fuselage facilitating emergency escape B64C)
M	B64D 25/08	• Ejecting or escaping means (escape apertures B64C)
M	B64D 25/18	• • Flotation gear (aircraft alighting gear B64C)
M	B64D 25/20	• • Releasing of crash position indicators
U	B64D 27/00	Arrangement or mounting of power plants in aircraft; Aircraft characterised by the type or position of power plants

- M B64D 27/02
- Aircraft characterised by the type or position of power plants ~~(fuselages specially adapted for mounting power plants B64C 1/16; wings specially adapted for power plants B64C 3/32)~~
- WARNING
Group [B64D 27/02](#) is impacted by reclassification into groups [B64D 27/026](#), [B64D 27/33](#), [B64D 27/357](#), [B64D 27/359](#), [B64D 31/16](#), [B64D 31/18](#) and [B64D 35/021](#) - [B64D 35/025](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- M B64D 29/00
- Power-plant nacelles, fairings, or cowlings ~~(nacelles not otherwise provided for B64C)~~**
- M B64D 29/02
- associated with wings ~~(wings adapted for mounting power plant B64C)~~
- M B64D 33/00
- Arrangements ~~Arrangement~~ in aircraft of power plant parts or auxiliaries not otherwise provided for**
- M B64D 33/02
- of combustion air intakes ~~(air intakes for gas-turbine plants or jet-propulsion plants per se F02C 7/04; air intakes for combustion engines in general F02M 35/00)~~
- M B64D 33/04
- of exhaust outlets or jet pipes ~~(exhaust outlets for combustion engines in general F01N; jet pipes or nozzles for jet-propulsion plants per se F02K; plants characterised by the form or arrangement of the jet pipe or nozzle F02K {-; attitude, flight direction, or altitude control by jet reaction B64C})~~
- M B64D 33/06
- {Silencing exhaust or propulsion jets ~~(ground installations B64F)~~}
- M B64D 33/08
- of power plant cooling systems ~~(cooling of internal combustion engines per se F01P; cooling of gas-turbine plants or jet-propulsion plants per se F02C, F02K)~~
- U B64D 35/00
- Transmitting power from power plants to propellers or rotors; Arrangements of transmissions**
- U B64D 35/02
- specially adapted for specific power plants
- WARNING
Group [B64D 35/02](#) is impacted by reclassification into groups [B64D 35/021](#), [B64D 35/022](#), [B64D 35/023](#), [B64D 35/024](#), [B64D 35/025](#) and [B64D 35/026](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- U B64D 35/021
- • for electric power plants
- WARNING
Groups [B64D 35/021](#), [B64D 35/022](#), [B64D 35/023](#), [B64D 35/024](#) and [B64D 35/025](#) are incomplete pending reclassification of documents from groups [B64D 27/02](#), [B64D 27/24](#) and [B64D 35/02](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- T B64D 35/022
- • • of hybrid-electric type
- WARNING
*Group [B64D 35/022](#) is incomplete pending reclassification of documents from group [B64D 35/08](#).
All groups listed in this Warning should be considered in order to perform a complete search.*

- T B64D 35/023 of series-parallel type
- WARNING
Group B64D 35/023 is incomplete pending reclassification of documents from group B64D 35/08.
All groups listed in this Warning should be considered in order to perform a complete search.
- T B64D 35/024 of series type
- WARNING
Group B64D 35/024 is incomplete pending reclassification of documents from group B64D 35/08.
All groups listed in this Warning should be considered in order to perform a complete search.
- T B64D 35/025 of parallel type
- WARNING
Group B64D 35/025 is incomplete pending reclassification of documents from group B64D 35/08.
All groups listed in this Warning should be considered in order to perform a complete search.
- C B64D 35/08 . characterised by the transmission being driven by a plurality of power plants (for hybrid-electric power plants B64D 35/022)
- WARNING
Group B64D 35/08 is impacted by reclassification into groups B64D 35/023, B64D 35/025, B64D 35/024 and B64D 35/022.
All groups listed in this Warning should be considered in order to perform a complete search.
- U B64D 37/00 Arrangements in connection with fuel supply for power plant (refuelling during flight B64D 39/00)**
- M B64D 37/02 . Tanks (tanks constructed integrally with aircraft wings B64G B64C 3/34; ~~shape or construction of tanks per se B65D~~)
- M B64D 37/14 . . Filling or emptying (transferring fuels to adjust aircraft trim B64G B64C 17/10)
- M B64D 37/16 . . . Filling systems (ground installations for fuelling aircraft B64F B64F 1/28)
- M B64D 37/32 . Safety measures not otherwise provided for, e.g. preventing explosive conditions (~~extinguishing or preventing fires in aircraft A62C~~)
- M B64D 39/00 Refuelling during flight (filling or emptying fuel tanks B64D 37/14)**
- M B64D 39/04 . Adaptations of hose construction (~~pipes in general F16L~~)
- M B64D 43/00 Arrangements or adaptations of instruments (arrangements of cameras B64D 47/08; aeronautical measuring instruments per se G01C)**
- M B64D 45/00 Aircraft indicators or protectors not otherwise provided for (~~camouflage F41H 3/00~~)**
- M B64D 45/02 . Lightning protectors; Static dischargers (~~in general H01T~~)

Project: RP12358 (B65D)**M B65D**

CONTAINERS FOR STORAGE OR TRANSPORT OF ARTICLES OR MATERIALS, e.g. BAGS, BARRELS, BOTTLES, BOXES, CANS, CARTONS, CRATES, DRUMS, JARS, TANKS, HOPPERS, FORWARDING CONTAINERS; ACCESSORIES, CLOSURES, OR FITTINGS THEREFOR; PACKAGING ELEMENTS; PACKAGES

NOTES

1. In this subclass, the indexing codes of [B65D 2519/00004](#) - [B65D 2519/00995](#) should be added, if applicable
2. This subclass covers:
 - containers, packaging elements or packages with auxilliary means or provisions for displaying articles or materials;
 - methods of packaging which are wholly characterised by the form of the package produced or the form of the container or packaging element used, as distinct from the operations performed or the apparatus employed, which are covered by subclass [B65B](#)
3. This subclass, which is intended to be as comprehensive as possible, only excludes containers or packages of a nature clearly confined to a single other subclass, which are classified in that subclass
4. In this subclass, groups [B65D 5/00](#), [B65D 27/00](#), [B65D 29/00](#), [B65D 31/00](#) or [B65D 65/00](#) include constructional features of foldable or erectable container or wrapper blanks as well as the containers or wrappers formed by folding or erecting such blanks
5. Containers, packaging elements or packages classified in group [B65D 85/00](#), are also classified according to the constructional or functional features, if such features are of interest
6. In this subclass, the following terms or expressions are used with the meanings indicated:
 - "rigid or semi-rigid containers" includes:
 - a. containers not deformed by, or not taking-up the shape of, their contents;
 - b. containers adapted to be temporarily deformed to expel their contents;
 - c. pallets;
 - d. trays;
 - "flexible containers" includes:
 - a. containers deformed by, or taking-up the shape of, their contents;
 - b. containers adapted to be permanently deformed to expel their contents;
 - "packaging elements" includes:
 - a. elements, other than containers, for covering, protecting, stiffening, or holding together articles or materials to be stored or transported;
 - b. packaging materials of special type or form not provided for in other subclasses;
 - "packages" includes:
 - a. combination of containers or packaging elements with articles or materials to be stored or transported;
 - b. articles joined together for convenience of storage or transport;
 - "paper" includes materials, e.g. cardboard, plastic sheet materials, laminated materials, or metal foils, worked in a manner analogous to paper;
 - "large containers", in groups [B65D 88/00](#) or [B65D 90/00](#), means containers having about the size of containers used in container traffic, sometimes

referred to as freight, forwarding or "ISO" [International Organization for Standardization] containers, or larger containers

7. Tamper-indicating means for containers or closures are classified in the group appropriate to the type of container or closure, e.g. [B65D 5/54](#), [B65D 17/00](#), [B65D 27/30](#), [B65D 27/30](#), [B65D 27/34](#), [B65D 33/34](#), [B65D 41/32](#), [B65D 47/36](#), [B65D 49/12](#), [B65D 51/20](#), [B65D 55/06](#)

WARNINGS

1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:

B65D 5/34	covered by	B65D 5/325
B65D 5/35	covered by	B65D 5/325
B65D 5/355	covered by	B65D 5/0005
B65D 5/43	covered by	B65D 5/42
B65D 5/462	covered by	B65D 5/46008 - B65D 5/46032
B65D 5/465	covered by	B65D 5/46008 - B65D 5/46032
B65D 5/468	covered by	B65D 5/4608
B65D 5/472	covered by	B65D 5/46048
B65D 5/475	covered by	B65D 5/46008
B65D 5/478	covered by	B65D 5/46056
B65D 5/4805 - B65D 5/489	covered by	B65D 5/48002
B65D 5/49 - B65D 5/499	covered by	B65D 5/48024
B65D 5/63	covered by	B65D 5/72
B65D 6/00 - B65D 6/40	covered by	B65D 7/00 , B65D 9/00 , B65D 11/00 , B65D 15/00
B65D 8/00 - B65D 8/22	covered by	B65D 7/00 , B65D 9/00 , B65D 11/00 , B65D 15/00
B65D 19/22	covered by	B65D 19/0004
B65D 19/24	covered by	B65D 19/0004
B65D 19/26	covered by	B65D 19/0004
B65D 19/28	covered by	B65D 19/0004
B65D 19/30	covered by	B65D 19/0004
B65D 19/31	covered by	B65D 19/0004
B65D 19/32	covered by	B65D 19/0002 , B65D 19/0004
B65D 19/34	covered by	B65D 19/0004
B65D 21/024	covered by	B65D 21/0201
B65D 21/028	covered by	B65D 21/0204
B65D 21/032	covered by	B65D 21/0209
B65D 21/036	covered by	B65D 21/0217
B65D 25/26	covered by	B65D 81/02
B65D 30/00 - B65D 30/28	covered by	B65D 29/00 , B65D 31/00
B65D 33/17	covered by	B65D 33/1633
B65D 33/36	covered by	B65D 75/58
B65D 33/38	covered by	B65D 75/5861
B65D 35/48 - B65D 35/54	covered by	B65D 47/2018
B65D 39/18	covered by	B65D 39/00
B65D 41/01	covered by	B65D 41/00
B65D 43/03	covered by	B65D 43/00 + B65D 2543/00027
B65D 43/04	covered by	B65D 43/0214

B65D 43/10	covered by	B65D 43/0204
B65D 47/22	covered by	B65D 47/20
B65D 47/34	covered by	B05B 11/00 B05B 11/10
B65D 50/08	covered by	B65D 55/02 B65D 50/02
B65D 50/10	covered by	B65D 55/02 B65D 50/061
B65D 50/12	covered by	B65D 55/02 B65D 50/00
B65D 50/14	covered by	B65D 55/02 B65D 50/067
B65D 65/26 - B65D 65/32	covered by	B65D 75/58
B65D 65/34	covered by	B65D 75/66
B65D 65/36	covered by	B65D 75/58
B65D 71/52 - B65D 71/68	covered by	B65D 71/0003 - B65D 71/0077
B65D 75/60 - B65D 75/64	covered by	B65D 75/58
B65D 81/15	covered by	B65D 81/05
B65D 81/17	covered by	B65D 81/02
B65D 83/18 B65D 85/57	covered by	B65D 83/201 , B65D 83/206 G11B 23/00
B65D 83/58	covered by	B65D 83/44
B65D 83/76	covered by	B65D 83/0005
B65D 85/57 B65D 85/575	covered by	G11B 23/00
B65D 85/575 B65D 85/86	covered by	G11B 23/00 B65D 2585/86 , H05K 13/00
B65D 85/88	covered by	B65D 2585/88 , H01M 50/00
B65D 85/86 - B65D 85/90	covered by	H01L 21/00 , H05K 13/00

2. {In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.}

M B65D 1/00

Containers *Rigid or semi-rigid containers* having bodies formed in one piece, e.g. by casting metallic material, by moulding plastics, by blowing vitreous material, by throwing ceramic material, by moulding pulped fibrous material; *or* by deep-drawing operations performed on sheet material (*by winding, bending, or folding paper* [B65D 3/00](#), [B65D 5/00](#); *with curved or partially-curved cross-section made by winding or bending paper* [B65D 3/00](#); *with polygonal cross-section formed by folding* [B65D 5/00](#); specially constructed to be opened by cutting, piercing, or tearing of wall portions [B65D 17/00](#); *pallets* [B65D 19/00](#); *details of bottles or of jars* [B65D 23/00](#); *bundles of articles held together by packaging elements for convenience of storage or transport, e.g. portable segregating carriers for plural receptacles such as beer cans, pop bottles, B65D 71/00*; *rigid pallets with side walls* [B65D 19/02](#))

- U B65D 1/02
 - Bottles or similar containers with necks or like restricted apertures, designed for pouring contents (thermally-insulated containers [B65D 81/38](#), [A47J 41/00](#); {feeding-bottles [A61J 9/00](#)})
- M B65D 1/08
 - adapted to discharge drops (~~droppers~~ [B65D 47/18](#))
- M B65D 1/09
 - Ampoules (~~specially adapted for medical or pharmaceutical purposes~~ [A61J 1/06](#))
- M B65D 1/32
 - Containers adapted to be temporarily deformed by external pressure to expel contents ({~~B65D 47/2018~~, ~~B65D 83/0055~~ take precedence } ; containers for pharmaceutical purposes [A61J 1/20](#), [A61M 5/19](#); containers with disinfecting linings [A61L 2/00](#); liquid sprayers [B05B](#); oil cans [F16N 3/00](#))

U B65D 5/00

Rigid or semi-rigid containers of polygonal cross-section, e.g. boxes, cartons or trays, formed by folding or erecting one or more blanks made of paper (rigid pallets with side walls [B65D 19/02](#))

- M B65D 5/02
- by folding or erecting a single blank to form a tubular body with or without subsequent folding operations, or the addition of separate elements, to close the ends of the body (~~B65D 5/36 takes precedence~~ *specially constructed to allow collapsing and re-erecting without disengagement of side or bottom connections B65D 5/36*)
- M B65D 5/16
- • the tubular body being formed with an aperture or removable portion arranged to allow removal or insertion of contents through one or more sides (~~contents-dispensing means B65D 5/72~~)
- M B65D 5/18
- by folding a single blank to U-shape to form the base of the container and opposite sides of the body portion, the remaining sides being formed primarily by extensions of one or more of these opposite sides, e.g. flaps hinged thereto (~~B65D 5/36 takes precedence~~ *specially constructed to allow collapsing and re-erecting without disengagement of side or bottom connections B65D 5/36*)
- M B65D 5/20
- by folding-up portions connected to a central panel from all sides to form a container body, e.g. of tray-like form (~~B65D 5/36 takes precedence~~ *specially constructed to allow collapsing and re-erecting without disengagement of side or bottom connections B65D 5/36*)
- M B65D 5/32
- having bodies formed by folding and interconnecting two or more blanks (~~each blank forming a body part, whereby each body part comprises at least one outside face of the box, carton or tray~~) (*specially constructed to allow collapsing and re-erecting without disengagement of side or bottom connections B65D 5/36*)
- U B65D 5/42
- Details of containers or of foldable or erectable container blanks
- U B65D 5/44
- • Integral, inserted or attached portions forming internal or external fittings
- M B65D 5/50
- • • Internal supporting or protecting elements for contents (~~elements formed by inward-folding of a wall extending from, and continuously around, an end of a tubular body B65D 5/06; partitions B65D 5/48~~)
- M B65D 13/00
- Containers having bodies formed by interconnecting two or more rigid, or substantially rigid, components made wholly or mainly of the same material, other than metal, plastics, wood, or substitutes therefor (~~pallets B65D 19/00~~)**
- M B65D 17/00
- Rigid or semi-rigid containers specially constructed to be opened by cutting or piercing, or by tearing of frangible members or portions (~~{containers made of paper B65D 3/00, B65D 5/00;}~~ frangible inner closure members associated with caps, lids or covers [B65D 51/20](#))**
- U B65D 17/28
- at lines or points of weakness
- U B65D 17/34
- • Arrangement or construction of pull or lift tabs ([B65D 17/32](#) takes precedence)
- M B65D 17/36
- • • adapted for engagement with opening tools, e.g. slotted keys (~~attachment of opening tools, e.g. slotted keys, to containers B65D 17/52~~)
- M B65D 17/50
- Non-integral frangible members applied to, or inserted in, preformed openings, e.g. tearable strips or plastic plugs (~~B65D 53/08 takes precedence~~ *flexible adhesive strips adapted to seal filling or discharging apertures B65D 53/08*)
- M B65D 19/00
- Pallets or like platforms, with or without side walls, for supporting loads to be lifted or lowered (~~in devices for lifting or lowering bulky or heavy goods for loading or unloading purposes B66F 9/12~~)**
- M B65D 23/00
- Details of bottles or jars not otherwise provided for (~~closure-securing elements B65D 45/00~~)**
- U B65D 25/00
- Details of other kinds or types of rigid or semi-rigid containers**

- M B65D 25/34
- Coverings or external coatings (of containers made by folding or erecting blanks made of paper [B65D 5/62](#); ~~for bottles or jars B65D 23/08~~; *covering or external coating for bottles or jars not otherwise provided for B65D 23/08*; wrappers [B65D 65/00](#))
- M B65D 27/00
- Envelopes or like essentially-rectangular *flexible* containers for postal or other purposes having no structural provision for thickness of contents (with shock-absorbing properties [B65D 81/03](#); ~~letter-cards B42D 15/00~~)
- M B65D 27/12
- Closures ~~(separate fasteners B42F 1/00)~~
- U B65D 33/00
- Details of, or accessories for, sacks or bags
- M B65D 33/16
- End- or aperture-closing arrangements or devices (valves of valve bags {[B65D 31/14](#)}; ~~removable stoppers or caps B65D 39/00, B65D 41/00~~; closures of filled bags [B65D 77/10](#); ~~closing filled bags in association with packaging B65B 7/00, B65B 51/00~~)
- U B65D 35/00
- Pliable tubular containers adapted to be permanently {or temporarily} deformed to expel contents, e.g. collapsible tubes for toothpaste or other plastic or semi-liquid material; Holders therefor
- M B65D 35/24
- with auxiliary devices ~~(linings or inserts B65D 35/14)~~
- M B65D 39/00
- Closures arranged within necks or pouring openings or in discharge apertures, e.g. stoppers (lids or covers [B65D 43/00](#); ~~with additional securing elements B65D 45/00~~)
- NOTE
- In this group, the indexing codes of [B65D 2539/00](#) are used
- M B65D 39/02
- Disc closures ~~(discs with flanges B65D 39/04)~~
- M B65D 41/00
- Caps, e.g. crown caps or crown seals, i.e. members having parts arranged for engagement with the external periphery of a neck or wall defining a pouring opening or discharge aperture; Protective cap-like covers for closure members, e.g. decorative covers of metal foil or paper (~~B65D 45/00 takes precedence~~ *clamping or other pressure-applying devices for securing or retaining closure members B65D 45/00*)
- M B65D 43/00
- Lids or covers for rigid or semi-rigid containers ~~(for cooking vessels A47J 36/06; covers for pressure vessels in general F16J 13/00)~~
- U B65D 43/14
- Non-removable lids or covers
- M B65D 43/16
- • hinged for upward or downward movement ~~(cigar or cigarette receptacles A24F 15/00; suitcases, étuis A45C; casings for cosmetic substances with hinged covers A45D 40/22; toolboxes B25H 3/02; } hinges of door or similar type E05D {- boxes for switchboards with hinged covers H02B 1/066})~~
- M B65D 45/00
- Clamping or other pressure-applying devices for securing or retaining closure members (~~screw-threaded or bayonet connections between stoppers or caps and containers B65D 39/08, B65D 41/04, B65D 41/34; expansible stoppers B65D 39/12; for pressure vessels in general F16J 13/00~~)
- M B65D 47/00
- Closures with filling and discharging, or with discharging, devices (~~dispensers for liquid soap A47K 5/12; desk equipment for applying liquid by contact with surfaces B43M 11/00; fluid delivery valves in general F16K 21/00~~)
- U B65D 47/04
- Closures with discharging devices other than pumps
- M B65D 47/20
- • comprising hand-operated members for controlling discharge ~~((closures with liquid-dispensing taps or cocks B67D 3/04~~ *closures with discharge by pumping {B05B 11/10})*)

- M B65D 47/36
- Closures with frangible parts adapted to be pierced, torn, or removed, to provide discharge openings (~~B65D 51/18 takes precedence; caps with pierceable membranes B65D 41/20, B65D 41/50~~ *caps with pierceable membranes B65D 41/20, B65D 41/50; arrangements of closures with protective outer cap-like covers or of two or more co-operating closures B65D 51/18*)
- M B65D 47/42
- with pads or like contents-applying means (~~{contents-applying means associated to aerosol container nozzles B65D 83/285; } brushes combined or associated with containers A46B 11/00; swabs for applying media to the human body from an integral supply A61F13/40~~)
- M B65D 49/00
- Arrangements or devices for preventing refilling of containers (~~integral, or permanently secured, closures for containers specially adapted to be opened by cutting, piercing, or tearing of wall portions B65D 17/00; for initial filling and for preventing subsequent refilling B65D 47/02~~)**
- M B65D 50/00
- Closures with means for discouraging unauthorised opening or removal thereof, with or without indicating means, e.g. child-proof closures (~~tamper-indicating closures without means for discouraging, see the relevant groups, e.g. B65D 41/32, B65D 51/20~~)**
- U B65D 50/02
- openable or removable by the combination of plural actions
- M B65D 50/04
- requiring the combination of simultaneous actions, e.g. depressing and turning, lifting and turning, maintaining a part and turning another one (~~{B65D 55/02 B65D 50/061} takes precedence; caps or covers secured by rotation with bayonet cams B65D 41/06, B65D 41/36~~)
- M B65D 51/00
- Closures not otherwise provided for (~~covers or similar closures as engineering elements for pressure vessels in general F16J 13/00~~)**
- M B65D 51/02
- Loosely-engaging lids or covers for jars, cans, or like containers for liquids without means for effecting sealing of container (~~for cooking vessels A47J 36/06~~)
- U B65D 55/00
- Accessories for container closures not otherwise provided for**
- M B65D 55/02
- Locking devices; Means for discouraging or indicating unauthorised opening or removal of closure (~~{B65D 41/32 takes precedence;} protective covers for bottles B65D 23/08; protective cap-like outer covers for bottle or jar closures B65D 41/62; pressure-applying means B65D 45/00; closures with means for discouraging unauthorised opening or removal of closures B65D 50/00~~)
- M B65D 55/06
- Deformable or tearable wires, strings, or strips (~~containers specially constructed to be opened by tear-strips, strings or the like B65D 17/00; caps or cap-like closures with tear-strips B65D 41/32; Use of seals {, e.g. destructible locking pins (B65D 55/022 takes precedence)}~~)
- M B65D 61/00
- External frames or supports adapted to be assembled around, or applied to, articles (~~collapsible containers B65D 5/00, B65D 7/24, B65D 9/12, B65D 11/18~~)**
- M B65D 69/00
- Articles joined together for convenience of storage or transport without the use of packaging elements (~~{packages joined together B65D 5/427, B65D 21/02} ; joining articles for convenience of packaging B65B 17/02~~)**
- U B65D 71/00
- Bundles of articles held together by packaging elements for convenience of storage or transport, e.g. portable segregating carrier for plural receptacles such as beer cans or pop bottles; Bales of material**
- U B65D 71/06
- Packaging elements holding or encircling completely or almost completely the bundle of articles, e.g. wrappers
- U B65D 71/12
- the packaging elements {, e.g. wrappers} being formed by folding a single blank

- M B65D 71/14
- • having ~~a tubular shape {, e.g. tubular wrappers} without~~ *the shape of a tube, without, or not being characterised by*, end walls ~~(sleeves B65D-59/04)~~
- M B65D 75/00
- Packages comprising articles or materials partially or wholly enclosed in strips, sheets, blanks, tubes, or webs of flexible sheet material, e.g. in folded wrappers (B65D-71/00 takes precedence; wrapping B65B-11/00 bundles of articles held together by packaging elements for convenience of storage or transport, e.g. portable segregating carrier for plural receptacles such as beer cans or pop bottles, or bales of material B65D 71/00)**
- U B65D 75/52
- Details
- M B65D 75/54
- • Cards, coupons, or other inserts or accessories ~~(opening devices B65D-75/70)~~
- U B65D 81/00
- Containers, packaging elements, or packages, for contents presenting particular transport or storage problems, or adapted to be used for non-packaging purposes after removal of contents**
- M B65D 81/18
- providing specific environment for contents, e.g. temperature above or below ambient (with thermal insulation [B65D 81/38](#); ~~ice-boxes with cooling means F25D~~)
- U B65D 81/24
- Adaptations for preventing deterioration or decay of contents; Applications to the container or packaging material of food preservatives, fungicides, pesticides or animal repellants (with thermal insulation [B65D 81/38](#))
- M B65D 81/245
- {Internal membrane, floating cover or the like isolating the contents from the ambient atmosphere (loosely-attached linings [B65D 25/16](#); dispensing pistons ~~B65D-83/0005~~ [B65D 83/76](#); flexible bags for expelling the contents ~~B65D-83/0055~~ [B65D 83/771](#))}
- M B65D 81/32
- for packaging two or more different materials which must be maintained separate prior to use in admixture ~~(containers with removable or destructible partitions B65D-25/08 {; closures combined with auxiliary containers B65D-51/28; in aerosol containers B65D-83/682; amalgam capsules A61C-5/66; containers for pharmaceutical purposes A61J-1/20, A61M-5/19; medical syringes A61M-3/005, resin cartridges for grouting anchoring-bolts in mines E21D-20/026})~~
- M B65D 81/38
- with thermal insulation ~~(vacuum bottles or the like A47J-41/00 {; thermal insulation of domestic water storage heaters F24H-1/182})~~
- M B65D 83/00
- Containers or packages with special means for dispensing contents (dispensing means incorporated in ~~removable or non-permanently secured container closures B65D 47/00~~; for shops, stores, offices, bars, or the like A47F-1/04; showcases or show cabinets with dispensing arrangements A47F-3/02; magazines for screws or nuts in combination with spanners, wrenches or screwdrivers B25B-23/06; for use in connection with the handling of sheets, webs, or filamentary material B65H)**
- D B65D 83/0005
- {Containers or packages provided with a piston or with a movable bottom or partition having approximately the same section as the container (B65D-83/0072 takes precedence)}
- <administratively transferred to [B65D 83/76](#)>
- D B65D 83/0011
- • {moved by a screw-shaft}
- <administratively transferred to [B65D 83/761](#)>
- D B65D 83/0016
- • • {the contents being forced out through the screw-shaft}
- <administratively transferred to [B65D 83/762](#)>
- D B65D 83/0022
- • {moved by a reciprocable plunger}
- <administratively transferred to [B65D 83/763](#)>

- D B65D 83/0027 • {piston-co-operating-with-a-screw-thread-in-the-side-wall-of-the-container}
<administratively transferred to [B65D 83/764](#)>
- D B65D 83/0033 • {the piston-being-a-follower-piston-and-the-dispensing-means-comprising-a-hand-operated-pressure-device-at-the-opposite-part-of-the-container}
<administratively transferred to [B65D 83/765](#)>
- D B65D 83/0038 • {moved-by-a-spring-like-mechanism-(B65D 83/005, B65D 83/0817, B65D 83/0858 take precedence)}
<administratively transferred to [B65D 83/766](#)>
- D B65D 83/0044 • {the piston-having-a-dispensing-opening-formed-in-the-piston-(B65D 83/0016 takes precedence)}
<administratively transferred to [B65D 83/767](#)>
- D B65D 83/005 • {the piston-or-movable-bottom-being-pulled-upwards-to-dispense-the-contents}
<administratively transferred to [B65D 83/768](#)>
- D B65D 83/0055 • {Containers-or-packages-provided-with-a-flexible-bag-or-a-deformable-membrane-or-diaphragm-for-expelling-the-contents}
<administratively transferred to [B65D 83/771](#)>
- D B65D 83/0061 • {the contents-of-a-flexible-bag-being-expelled-by-the-contracting-forces inherent-in-the-bag-or-a-sleeve-fitting-snugly-around-the-bag}
<administratively transferred to [B65D 83/7711](#)>
- D B65D 83/0066 • {the contents-of-a-flexible-bag-being-expelled-by-twisting-the-bag}
<administratively transferred to [B65D 83/7712](#)>
- D B65D 83/0072 • {the contents-of-a-flexible-bag-being-expelled-by-a-piston-or-a-movable-bottom-or-partition-provided-in-the-container-or-the-package}
<administratively transferred to [B65D 83/7713](#)>
- D B65D 83/0077 • {moves-by-a-spring-like-mechanism}
<administratively transferred to [B65D 83/7714](#)>
- D B65D 83/0083 • {Containers-comprising-an-internal-rotating-wing-for-expelling-the-contents}
<administratively transferred to [B65D 83/775](#)>
- U B65D 83/0088 • {Packages containing several articles intended to be suspended from a display rod, e.g. blisters, i.e. the package being used to facilitate suspending the articles from the rod}
- U B65D 83/0094 • {Containers having an external wall formed as, or with, a diaphragm or the like which is deformed to expel the contents ([B65D 1/32](#) takes precedence)}
- M B65D 83/02 • for dispensing rod-shaped articles, e.g. needles ~~{{(packages for cigarettes provided with dispensing means B65D 85/1009; dispensers for drinking straws A47G 21/184)}}~~
- M B65D 83/04 • for dispensing annular, disc-shaped, ~~or~~ spherical or like small articles, e.g. tablets or pills
- M B65D 83/049 • {the dispensing means forming a part of a removable closure, e.g. gripping teeth, ~~or~~ cavity}
- M B65D 83/06 • for dispensing powdered or granular material ~~{{(B65D 83/04 takes precedence)}}~~
- M B65D 83/08 • for dispensing thin flat articles in succession (~~{{towel dispensers intended for re-use A47K 10/24;}}~~ dispensers for surgical scalpel blades A61B 17/3215 ~~for surgical scalpel blades A61B 17/3215~~)

NOTE

[B65D 83/10](#) and [B65D 83/12](#) take precedence over [B65D 83/0805](#) - [B65D 83/0894](#)

- U B65D 83/0805 • • {through an aperture in a wall}
- U B65D 83/0811 • • • {with means for assisting dispensing}
- U B65D 83/0817 • • • • {the articles being automatically urged towards the dispensing aperture, e.g. spring-loaded ([B65D 83/0823](#) takes precedence)}
- U B65D 83/0823 • • • • {the articles being pushed and slid through the aperture}
- U B65D 83/0829 • • • • • {by means of an actuator}
- U B65D 83/0835 • • • • {the articles being pulled out of the container}
- M B65D 83/0841 • • • • {and for cutting interconnected articles ~~{cutting devices for dispensers intended for re-use B65H 35/008}~~}
- U B65D 83/0847 • • {through an aperture at the junction of two walls}
- U B65D 83/0852 • • • {with means for assisting dispensing}
- U B65D 83/0858 • • • • {the articles being automatically urged towards the dispensing aperture, e.g. spring-loaded ([B65D 83/0864](#) takes precedence)}
- U B65D 83/0864 • • • • {the articles being pushed and slid through the aperture}
- U B65D 83/087 • • • • • {by means of an actuator}
- U B65D 83/0876 • • • • {the articles being pulled out of the container}
- M B65D 83/0882 • • • • {and for cutting interconnected articles ~~{cutting devices for dispensers intended for re-use B65H 35/008}~~}
- U B65D 83/0888 • • {with provision for used articles}
- U B65D 83/0894 • • {the articles being positioned relative to one another or to the container in a special way, e.g. for facilitating dispensing, without additional support}
- M B65D 83/10 • • for ~~dispensing razor blades~~ *razor blades or razor cartridges*
- M B65D 83/12 • • for ~~dispensing~~ tickets or tokens
- C B65D 83/14 • ~~for delivery of~~ *Containers for dispensing* liquid or semi-liquid contents by internal gaseous pressure, i.e. aerosol containers comprising propellant ~~{for a product delivered by a propellant}~~

WARNING

Group [B65D 83/14](#) is impacted by reclassification into groups [B65D 83/58](#), [B65D 83/162](#) and [B65D 83/204](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N B65D 83/141 • • *specially adapted for specific contents or propellants*
- N B65D 83/145 • • *with tamper-indicating means, e.g. located in front of nozzle outlets (tamper-indicating means obstructing initial actuation [B65D 83/224](#))*
- T B65D 83/16 • • ~~characterised by the actuating~~ *Actuating* means

WARNING

Group [B65D 83/16](#) is incomplete pending reclassification of documents from group [B65D 83/20](#).

Groups [B65D 83/20](#) and [B65D 83/16](#) should be considered in order to perform a complete search.

- N B65D 83/162 • • • {Push button actuators ([B65D 83/204](#) takes precedence)}

WARNING

Group [B65D 83/162](#) is incomplete pending reclassification of documents from groups [B65D 83/14](#), [B65D 83/20](#) and [B65D 83/48](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N B65D 83/164 . . . {Actuators comprising a manually operated valve and being attachable to the aerosol container, e.g. downstream a valve fitted to the container; Actuators associated to container valves with valve seats located outside the aerosol container}
- N B65D 83/166 . . . {Pull cord operated actuators}
- N B65D 83/18 . . . Hand lever actuators (attached to actuator caps [B65D 83/206](#))
- N B65D 83/182 . . . combined with hand grips
- N B65D 83/184 . . . at the end of extension rods
- C B65D 83/20 . . . {operated by manual action, e.g. button-type actuator or} actuator caps {Actuator caps (actuators formed as a rigid elongate spout B65D 83/306)}
- WARNING**
Group B65D 83/20 is impacted by reclassification into groups [B65D 83/16](#), [B65D 83/162](#) and [B65D 83/204](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- D B65D 83/201 . . . {Lever-operated actuators (B65D 83/206 takes precedence)}
<administratively transferred to [B65D 83/18](#)>
- D B65D 83/202 . . . {combined with a hand grip (hand-held or body-worn self-defense devices using aerosol containers F41H 9/10)}
<administratively transferred to [B65D 83/182](#)>
- D B65D 83/203 . . . {comprising an extension rod located between the aerosol container and the hand grip (setting-out line markings on playing courts A63C 19/065; marking-out on finished paving by spraying from aerosol containers E01C 23/227)}
<administratively transferred to [B65D 83/184](#)>
- N B65D 83/204 . . . {comprising push button actuators}
- WARNING**
Group [B65D 83/204](#) is incomplete pending reclassification of documents from groups [B65D 83/14](#), [B65D 83/20](#) and [B65D 83/48](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- D B65D 83/205 . . . {Actuator caps, or peripheral actuator skirts, attachable to the aerosol container}
<administratively transferred to [B65D 83/20](#)>
- M B65D 83/206 . . . {comprising a cantilevered actuator element comprising cantilevered actuating elements, e.g. a lever pivoting about a living hinge} levers pivoting about living hinges
- D B65D 83/207 . . . {Actuators comprising a manually operated valve and being attachable to the aerosol container, e.g. downstream a valve fitted to the container; Actuators associated to container valves with valve seats located outside the aerosol container (portable spraying apparatus comprising pressurised supply containers B05B 7/2402, B05B 9/0805; manually actuated controlling means for spraying apparatus B05B 12/002; actuators connected to the aerosol container by a flexible tube B65D 83/756)}
<administratively transferred to [B65D 83/164](#)>
- D B65D 83/208 . . . {Pull cord operated actuators}
<administratively transferred to [B65D 83/166](#)>

- M B65D 83/22
 - • • with ~~{a mechanical}~~ means to disable actuation (~~B65D 50/00 takes precedence~~ *closures with means for discouraging unauthorized opening or removal thereof B65D 50/00*)
- M B65D 83/222
 - • • • ~~{Actuator locking means being automatically repeatedly displaced~~ *that are automatically engaged* after each actuation}
- M B65D 83/224
 - • • • ~~{Tamper-Tamper-indicating means obstructing initial actuation, e.g. removable (container closure having to be perforated B65D 83/382; tamper indicating means located in front of outlets B65D 83/7538)}~~
- U B65D 83/226
 - • • • {preventing initial depression of the actuator}
- U B65D 83/228
 - • • • {consisting of a rupturable connection between actuator element and actuator cap or skirt, e.g. tear strips or bridges}
- M B65D 83/24
 - • • ~~with means to hold the valve open, {Arrangements for keeping the actuating means in the active position, e.g. for continuous delivery}~~ *dispensing*
- U B65D 83/26
 - • • operating automatically, e.g. periodically
- U B65D 83/262
 - • • • {by clockwork, motor, electric or magnetic means operating without repeated human input}
- U B65D 83/265
 - • • • {by fall or rise in pressure or temperature}
- U B65D 83/28
 - • Nozzles, nozzle fittings or accessories specially adapted therefor
- M B65D 83/285
 - • • ~~{for applying the contents~~ *content*, e.g. brushes, ~~rollers, pads, spoons, razors, scrapers or pads~~ (closures with pads or like contents-applying means B65D 47/42; brushes with integral pre-pressurised reservoirs A46B 11/0017; domestic cleaning implements with liquid-feeding devices A47L 13/00)}
- M B65D 83/30
 - • • for guiding the flow of ~~spray {the dispensed content, e.g. funnels, hoods} or hoods~~
- M B65D 83/303
 - • • • ~~{using extension tubes located in or at the outlet duct of the nozzle assembly}~~ *nozzle outlets*
- U B65D 83/306
 - • • • {Actuators formed as a rigid elongate spout}
- U B65D 83/32
 - • Dip-tubes
- U B65D 83/34
 - • Cleaning or preventing clogging of the discharge passage
- U B65D 83/345
 - • • {Anti-clogging means for outlets}
- M B65D 83/36
 - • allowing operation in any orientation-~~{, e.g. discharge in inverted position}~~
- U B65D 83/38
 - • Details of the container body (pressure relief devices B65D 83/70)
- M B65D 83/382
 - • • • ~~{with closures that must be perforated~~ *the container body or a closure attached to the container body must be punctured before first use}*
- M B65D 83/384
 - • • ~~{comprising~~ *the container body being* an aerosol container ~~disposed~~ *located* in an outer shell or in an external container}
- U B65D 83/386
 - • • • {actuation occurring by moving the aerosol container relative to the outer shell or external container}
- U B65D 83/388
 - • • {with means for suspending the aerosol container}
- M B65D 83/40
 - • Closure caps (actuator caps ~~{B65D 83/205}~~ *B65D 83/20*)
- U B65D 83/42
 - • Filling or charging means
- U B65D 83/425
 - • • {Delivery valves permitting filling or charging}
- M B65D 83/44
 - • Valves specially adapted ~~therefor~~ *for the discharge of contents*; Regulating devices (~~filling or discharging means B65D 83/42; {pressure regulators releasing propellant inside the container B65D 83/663;}~~ pressure relief devices B65D 83/70)
- M B65D 83/46
 - • • Tilt valves (~~B65D 83/50 takes precedence~~ *non-reclosable valves B65D 83/50*)

- C B65D 83/48
- • • Lift valves, e.g. operated by push action (~~B65D 83/50 takes precedence~~~~non-reclosable valves B65D 83/50~~)
- WARNING
Group [B65D 83/48](#) is impacted by reclassification into groups [B65D 83/58](#), [B65D 83/162](#) and [B65D 83/204](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- M B65D 83/50
- • • Non-reclosable valves ~~{~~, e.g. for ~~complete delivery~~~~dispensing~~ in a single dose~~}~~
- T B65D 83/52
- • • ~~for metering~~~~Metering valves; Metering devices~~
- D B65D 83/525
- • • • {with means for adjusting the metered quantity}
<administratively transferred to [B65D 83/53](#)>
- N B65D 83/53
- • • • with means for adjusting the metered quantity
- D B65D 83/54
- • • • Metering valves ~~{~~; Metering valve assemblies~~}~~
<administratively transferred to [B65D 83/52](#)>
- M B65D 83/543
- • • • ~~▪~~ {adapted for metering and for continuous delivery}
- M B65D 83/546
- • • • ~~▪~~ {the metering occurring at least partially in the actuating means}
- C B65D 83/56
- • {~~with means for preventing delivery, e.g.~~ shut-off when inverted ~~{with arrangements for interruption of dispensing when the container is inverted~~ ~~(actuating means with means to disable actuation B65D 83/22)~~}
- WARNING
Group [B65D 83/56](#) is impacted by reclassification into group [B65D 83/567](#).
Groups [B65D 83/56](#) and [B65D 83/567](#) should be considered in order to perform a complete search.
- D B65D 83/565
- • • {~~the delivery-preventing means being responsive to the orientation of the container~~}
- <administratively transferred to [B65D 83/56](#)>
- N B65D 83/567
- • {with means for preventing delivery ([B65D 83/56](#) takes precedence)}
- WARNING
Group [B65D 83/567](#) is incomplete pending reclassification of documents from group [B65D 83/56](#).
Groups [B65D 83/56](#) and [B65D 83/567](#) should be considered in order to perform a complete search.
- N B65D 83/58
- • • with separate inlets for contents and propellant feeding into a duct upstream of the dispensing valve (with contents and propellant separated [B65D 83/60](#))
- WARNING
Group [B65D 83/58](#) is incomplete pending reclassification of documents from groups [B65D 83/14](#) and [B65D 83/48](#).
Groups [B65D 83/14](#), [B65D 83/48](#) and [B65D 83/58](#) should be considered in order to perform a complete search.
- M B65D 83/60
- • ~~Contents~~~~with contents~~ and propellant separated
- M B65D 83/62
- • • by ~~membrane, bag, membranes, bags~~ or the like ~~{(containers in which the content is delivered by the contracting forces inherent in the bag B65D 83/0061)}~~
- M B65D 83/625
- • • • {the propellant being generated by a chemical or electrochemical reaction ~~(for pressure gas in portable fire extinguishers A62C 13/02)~~}
- M B65D 83/64
- • • by ~~piston~~~~pistons~~

M	B65D 83/643	<ul style="list-style-type: none"> • • • {the propellant being generated by a chemical or electrochemical reaction (for pressure gas in portable fire extinguishers A62C 13/02)}
M	B65D 83/646	<ul style="list-style-type: none"> • • • {the piston being provided with a dispensing opening through which the contents are dispensed (containers with such a dispensing piston; adapted for hand-held, manually operated spray apparatus B05B 11/029; in general B65D 83/0044)}
M	B65D 83/66	<ul style="list-style-type: none"> • • • first separated, but finally mixed <i>{initially separated and subsequently mixed, e.g. in a dispensing head}</i>
D	B65D 83/663	<ul style="list-style-type: none"> • • • {at least a portion of the propellant being separated from the product and incrementally released by means of a pressure regulator} <p><administratively transferred to B65D 83/673></p>
M	B65D 83/666	<ul style="list-style-type: none"> • • • {product and propellant being totally <i>with contents and the propellant being fully</i> mixed on, or prior to, first use, e.g. by braking <i>breaking</i> an ampoule containing one of those components (B65D 83/687 takes precedence; portable spraying apparatus comprising a container pressurized by a gas cartridge B05B 9/0833)}
N	B65D 83/673	<ul style="list-style-type: none"> • • • {at least a portion of the propellant being separated from the product and incrementally released by means of a pressure regulator}
M	B65D 83/68	<ul style="list-style-type: none"> • • Dispensing two or more contents {, e.g. sequential dispensing or simultaneous dispensing of two or more products without mixing them}
M	B65D 83/682	<ul style="list-style-type: none"> • • • {the products being first separated, but finally mixed, e.g. in a dispensing head <i>initially separated and subsequently mixed</i> (mixing in general B01F)}
M	B65D 83/685	<ul style="list-style-type: none"> • • • {with one product being located <i>with at least one of the contents stored</i> in a chamber within, or forming part of, associated with the dispensing head, e.g. for admixture during dispensing <i>mixing during dispensing</i>
M	B65D 83/687	<ul style="list-style-type: none"> • • • {the products being totally <i>with contents and the propellant being fully</i> mixed on, or prior to, first use, e.g. by breaking an ampoule containing one of the products <i>those components</i>
U	B65D 83/70	<ul style="list-style-type: none"> • • Pressure relief devices
M	B65D 83/72	<ul style="list-style-type: none"> • • with heating or cooling devices {, e.g. heat-exchangers} <i>exchangers</i>
M	B65D 83/74	<ul style="list-style-type: none"> • • • <i>with</i> heating by exothermic reaction
U	B65D 83/75	<ul style="list-style-type: none"> • • {Aerosol containers not provided for in groups B65D 83/16 - B65D 83/74}
D	B65D 83/752	<ul style="list-style-type: none"> • • • {characterised by the use of specific products or propellants} <p><administratively transferred to B65D 83/141></p>
U	B65D 83/753	<ul style="list-style-type: none"> • • • {characterised by details or accessories associated with outlets}
U	B65D 83/7532	<ul style="list-style-type: none"> • • • • {comprising alternative flow directions or replaceable or interchangeable outlets}
U	B65D 83/7535	<ul style="list-style-type: none"> • • • • {Outlet valves opened by the product to be delivered (adapted for hand-held, manually operated spray apparatus B05B 11/0062)}
D	B65D 83/7538	<ul style="list-style-type: none"> • • • • {Tamper indicating means located in front of outlets (tamper indicating means obstructing initial actuation B65D 83/224)} <p><administratively transferred to B65D 83/145></p>
M	B65D 83/754	<ul style="list-style-type: none"> • • • {comprising filters in the fluid flow path (filters specially adapted for spraying plants or apparatus B05B 15/40)}
M	B65D 83/756	<ul style="list-style-type: none"> • • • {comprising connectors, e.g. for tyre valves, or actuators connected to the aerosol container by a flexible tube (auto-repairing or self-sealing arrangement for repairing plastic articles B29C 73/16)}

- D B65D 83/757
- • • {Tamper-indicating means (actuators with tamper-indicating means B65D 83/224; tamper-indicating means located in front of outlets B65D 83/7538)}
 - <administratively transferred to [B65D 83/145](#)>
- D B65D 83/7575
- • • {Separate tamper-elements}
 - <administratively transferred to [B65D 83/145](#)>
- U B65D 83/759
- • • {Aerosol containers connected to or located in toilet-bowls or cisterns}
- N B65D 83/76
- for dispensing fluent contents by means of a piston
- N B65D 83/761
- • the piston being actuated by a screw-shaft
- N B65D 83/762
- • • the contents being forced out through an internal passage in the screw-shaft
- N B65D 83/763
- • the piston being actuated by a reciprocating axial motion of a shaft which engages the piston, e.g. using a ratchet mechanism
- N B65D 83/764
- • the piston cooperating with a screw-thread in the side wall of the container
- N B65D 83/765
- • {the piston being a follower-piston and the dispensing means comprising a hand-operated pressure device at the opposite part of the container}
- N B65D 83/766
- • the piston being actuated by a spring-like mechanism
- N B65D 83/767
- • the piston having an integrated dispensing opening ([B65D 83/762](#) takes precedence)
- N B65D 83/768
- • {the piston or movable bottom being pulled upwards to dispense the contents}
- N B65D 83/771
- {for dispensing fluent contents by means of a flexible bag or a deformable membrane or diaphragm}
- N B65D 83/7711
- • {the contents of a flexible bag being expelled by the contracting forces inherent in the bag or a sleeve fitting snugly around the bag}
- N B65D 83/7712
- • {the contents of a flexible bag being expelled by twisting the bag}
- N B65D 83/7713
- • {the contents of a flexible bag being expelled by a piston, or a movable bottom or partition provided in the container or the package}
- N B65D 83/7714
- • {moved by a spring-like mechanism}
- N B65D 83/775
- {Containers comprising an internal rotating wing for expelling the contents}

M B65D 85/00 Containers, packaging elements or packages, specially adapted for particular articles or materials (~~B65D 71/00, B65D 83/00 take precedence; hand implements or travelling equipment A45C; cosmetic or toiletry equipment A45D; packages for surgical knives, scalpels or blades therefor A61B 17/3215; containers specially adapted for medical or pharmaceutical purposes A61J 1/00; paint cans B44D 3/12; oil cans F16N 3/04; containers for carrying small arms F41C 33/06; packaging of ammunition or explosive charges F42B 39/00; containers for record carriers, specially adapted for cooperation with the recording or reproducing apparatus G11B 23/00~~ **bundles of articles held together by packaging elements for convenience of storage or transport [B65D 71/00](#)**)

NOTE

Attention is drawn to Note (5) following the title of this subclass.

- U B65D 85/20
- for incompressible or rigid rod-shaped or tubular articles
- M B65D 85/28
- • for pencils or pens (~~pencil boxes A45C 11/34~~)
- M B65D 85/50
- for living organisms, articles or materials sensitive to changes of environment or atmospheric conditions, e.g. land animals, birds, fish, water plants, non-aquatic plants, flower bulbs, cut flowers or foliage (~~devices for transporting live fish A01K 63/02~~)

- M B65D 85/58 • for ball bearings, washers, buttons or like spherical or disc-shaped articles
(cards for buttons, collar-studs or sleeve-links A44B 7/00)
- M B65D 85/67 • for web or tape-like material (for jumbo rolls or rolls of floor covering
B65D 85/66; for recording-tape cassettes G11B 23/00)
- M B65D 88/00 Large containers (component parts, details or accessories B65D 90/00;
construction or assembling of bulk storage containers employing civil
engineering techniques in situ or off the site E04H 7/00; gas holders of
variable capacity F17B; vessels for containing or storing compressed,
liquefied or solidified gases F17C)**
- M B65D 88/02 • rigid (B65D 88/34 - B65D 88/78 take precedence; hoppers B65D 88/26;
{special vessels for collecting or storing rain-water for use in the household
E03B 3/03; cesspools E03F 11/00})
- M B65D 88/16 • flexible (B65D 88/34 - B65D 88/78 take precedence; hoppers B65D 88/26)
- M B65D 88/18 • • bellows-shaped (B65D 88/22 takes precedence; connection of valves to
inflatable elastic bodies B60C 29/00)
- M B65D 88/34 • having floating covers, e.g. floating roofs or blankets (venting means
B65D 90/34)
- M B65D 88/54 • characterised by means facilitating filling or emptying ({filling or emptying
features for flexible large containers B65B 69/0075; } construction or shape of
discharge section of hoppers B65D 88/28; gates or closures B65D 90/54; filling
or emptying bunkers, hoppers, or like containers B65G 65/30)
- M B65D 88/78 • for use in or under water (manholes, inspection openings, covers therefor
B65D 90/10)
- U B65D 90/00 Component parts, details or accessories for large containers
(B65D 88/34 - B65D 88/78 take precedence)**
- M B65D 90/02 • Wall construction (arrangements of leakage-indicating devices comprising
hollow spaces within walls B65D 90/501; arrangements of leakage-indicating
devices comprising porous spaces or porous layers in walls B65D 90/505;
arrangements of leakage-indicating devices comprising electrically conductive
layers in walls B65D 90/513)
- M B65D 90/10 • Manholes; Inspection openings; Covers therefor (safety features B65D 90/22;
covers or similar closure members, for pressure vessels in general F16J 13/00)
- M B65D 90/22 • Safety features (floating covers B65D 88/34; arrangements of indicating or
measuring devices B65D 90/48; fire-fighting A62C)
- M B65D 90/26 • • Overfill prevention (spillage retaining means B65D 90/24; arrangements of
indicating or measuring devices B65D 90/48)
- M B65D 90/54 • Gates or closures (for manholes B65D 90/10; covers or similar closure
members, for pressure vessels in general F16J 13/00; valves per se F16K;
{doors for containers B65D 90/008})

Project: MP12266 (B65H)

- U B65H 2601/00 Problem to be solved or advantage achieved**
- U B65H 2601/10 • Ensuring correct operation
- U B65H 2601/12 • • Compensating; Taking-up
- M B65H 2601/124 • • • Unbalance Imbalance

Project: Unknown (B66C)

- U B66C 13/00 Other constructional features or details**
- U B66C 13/18 • Control systems or devices (exclusively for rope, cable, or chain winding
mechanisms B66D 1/40)

- U B66C 13/22 • • for electric drives (transmitting control pulses [B66C 13/40](#); systems or devices of general application [H02P](#))
- U B66C 13/23 • • • Circuits for controlling the lowering of the load
- M B66C 13/24 • • • • by ~~de~~DC motors
- M B66C 13/26 • • • • by ~~ae~~AC motors
- U B66C 2700/00 Cranes**
- U B66C 2700/08 • Electrical assemblies or electrical control devices for cranes, winches, capstans or electrical hoists
- M B66C 2700/081 • • with ~~ae~~AC motors

Project: RP12465 (B81B)

- U B81B 7/00 Microstructural systems; {Auxiliary parts of microstructural devices or systems}**
- U B81B 7/0009 • {Structural features, others than packages, for protecting a device against environmental influences ([B81C 1/00777](#) takes precedence)}
- M B81B 7/0022 • • {Protection against electrostatic discharge (~~electrostatic discharge protection for electronic semiconductor circuits H01L 27/0248~~; circuit arrangements for protecting electronic switching circuits used for pulse technique against overcurrent or overvoltage [H03K 17/08](#); *electrostatic discharge protection for electronic semiconductor circuits H10D 89/60*)}

Project: RP12465 (B82B)**B82B**

NANOSTRUCTURES FORMED BY MANIPULATION OF INDIVIDUAL ATOMS, MOLECULES, OR LIMITED COLLECTIONS OF ATOMS OR MOLECULES AS DISCRETE UNITS; MANUFACTURE OR TREATMENT THEREOF

NOTES

1. This subclass does not cover chemical or biological nanostructures per se, provided for elsewhere, e.g. in classes [C08](#) or [C12](#).
2. Attention is drawn to the Note following the title of class [B82](#), which defines the meaning of the terms "nanosize", "nanoscale" and "nanostructure" in this subclass.
3. Subject matter classified in this subclass is further classified in subclass [B82Y](#), in order to enable a comprehensive search of nanostructure technology using classification symbols of [B82Y](#) in combination with classification symbols of [B82B](#).
4. Nanostructures having specialised features or functions are further classified in appropriate places in other subclasses that provide for those features or functions, e.g. in [G01Q](#), [G02F 1/017](#), ~~H01L 29/775~~[H10D 30/43](#).

Project: RP12465 (B82Y)**B82Y****SPECIFIC USES OR APPLICATIONS OF NANOSTRUCTURES;
MEASUREMENT OR ANALYSIS OF NANOSTRUCTURES; MANUFACTURE
OR TREATMENT OF NANOSTRUCTURES****NOTES**

1. This subclass covers applications and aspects of nanostructures which are produced by any method, and is not restricted to those that are formed by manipulation of individual atoms or molecules.
2. Attention is drawn to the Note following the title of class [B82](#), which defines the meaning of the terms "nanosize", "nanoscale" and "nanostructure" in this subclass.
3. This subclass is intended to enable a comprehensive search of subject matter related to nanostructures by combination of classification symbols of this subclass with classification symbols from other subclasses. Therefore this subclass covers aspects of nanostructures that might also be entirely or partially covered elsewhere in the IPC.
4. This subclass is for secondary classification, i.e. obligatory supplementary classification of subject matter already classified as such in other classification places, e.g. :

B82B	Nanostructures formed by individual manipulation of atoms, molecules, or limited collections of atoms or molecules as discrete units; manufacture or treatment thereof
A61K 9/51	Nanocapsules for medicinal preparations
B05D 1/20	Langmuir-Blodgett films
C01B 32/05	Carbon nanostructures, e.g. bucky-balls, nanotubes, nanocoils, nanodoughnuts or nanoonions
G01Q	Scanning probe techniques
G02F 1/017	Optical quantum wells or boxes
H01F 10/32	Nanostructured thin magnetic films
H01F 41/30	Molecular beam epitaxy [MBE]
H01L 29/775	Quantum wire FETs
H10D 30/43	

5. The classification symbols of this subclass are not listed first when assigned to patent documents.

Project: RP12344 (C01F)**U C01F 7/00****Compounds of aluminium****M C01F 7/78**

- Compounds containing aluminium ~~and two or more other elements, with the exception of oxygen and hydrogen~~, *with or without oxygen or hydrogen, and containing two or more other elements* (aluminates [C01F 7/02](#); compounds containing aluminium, fluorine and alkali or alkaline earth metals [C01F 7/54](#); nitrates containing other cations besides aluminium [C01F 7/66](#); sulfides, sulfites or sulfates containing other cations besides aluminium [C01F 7/70](#) - [C01F 7/74](#))

Project: RP12344 (C01G)**U C01G 3/00****Compounds of copper****M C01G 3/006**

- {Compounds containing, ~~besides copper, two or more other elements, with the exception of oxygen or hydrogen~~ *copper, with or without oxygen or hydrogen, and containing two or more other elements*}

U C01G 5/00**Compounds of silver**

M	C01G 5/006	<ul style="list-style-type: none"> • {Compounds containing, besides silver, two or more other elements, with the exception of oxygen or hydrogen <i>silver, with or without oxygen or hydrogen, and containing two or more other elements</i>}
U	C01G 7/00	Compounds of gold
M	C01G 7/006	<ul style="list-style-type: none"> • {Compounds containing, besides gold, two or more other elements, with the exception of oxygen or hydrogen <i>gold, with or without oxygen or hydrogen, and containing two or more other elements</i>}
U	C01G 9/00	Compounds of zinc
M	C01G 9/006	<ul style="list-style-type: none"> • {Compounds containing, besides zinc, two or more other elements, with the exception of oxygen or hydrogen <i>zinc, with or without oxygen or hydrogen, and containing two or more other elements</i>}
U	C01G 11/00	Compounds of cadmium
M	C01G 11/006	<ul style="list-style-type: none"> • {Compounds containing, besides cadmium, two or more other elements, with the exception of oxygen or hydrogen <i>cadmium, with or without oxygen or hydrogen, and containing two or more other elements</i>}
U	C01G 13/00	Compounds of mercury
M	C01G 13/006	<ul style="list-style-type: none"> • {Compounds containing, besides mercury, two or more other elements, with the exception of oxygen or hydrogen <i>mercury, with or without oxygen or hydrogen, and containing two or more other elements</i>}
U	C01G 15/00	Compounds of gallium, indium or thallium
M	C01G 15/006	<ul style="list-style-type: none"> • {Compounds containing, besides gallium, indium, or thallium, two or more other elements, with the exception of oxygen or hydrogen <i>with or without oxygen or hydrogen, and containing two or more other elements</i>}
U	C01G 17/00	Compounds of germanium
M	C01G 17/006	<ul style="list-style-type: none"> • {Compounds containing, besides germanium, two or more other elements, with the exception of oxygen or hydrogen <i>germanium, with or without oxygen or hydrogen, and containing two or more other elements</i>}
U	C01G 19/00	Compounds of tin
M	C01G 19/006	<ul style="list-style-type: none"> • {Compounds containing, besides tin, two or more other elements, with the exception of oxygen or hydrogen <i>tin, with or without oxygen or hydrogen, and containing two or more other elements</i>}
U	C01G 21/00	Compounds of lead
M	C01G 21/006	<ul style="list-style-type: none"> • {Compounds containing, besides lead, two or more other elements, with the exception of oxygen or hydrogen <i>lead, with or without oxygen or hydrogen, and containing two or more other elements</i>}
U	C01G 23/00	Compounds of titanium {(preparation of Ti-compounds from ores or scraps C22B 34/12)}
M	C01G 23/002	<ul style="list-style-type: none"> • {Compounds containing, besides titanium, two or more other elements, with the exception of oxygen or hydrogen <i>titanium, with or without oxygen or hydrogen, and containing two or more other elements</i> (C01G 23/001, C01G 23/003 take precedence)}
U	C01G 25/00	Compounds of zirconium
M	C01G 25/006	<ul style="list-style-type: none"> • {Compounds containing, besides zirconium, two or more other elements, with the exception of oxygen or hydrogen <i>zirconium, with or without oxygen or hydrogen, and containing two or more other elements</i>}
U	C01G 27/00	Compounds of hafnium

M	C01G 27/006	• {Compounds containing, besides hafnium, two or more other elements, with the exception of oxygen or hydrogen hafnium, with or without oxygen or hydrogen, and containing two or more other elements}
U	C01G 28/00	Compounds of arsenic
M	C01G 28/002	• {Compounds containing, besides arsenic, two or more other elements, with the exception of oxygen or hydrogen arsenic, with or without oxygen or hydrogen, and containing two or more other elements (C01G 28/001 takes precedence)}
U	C01G 29/00	Compounds of bismuth
M	C01G 29/006	• {Compounds containing, besides bismuth, two or more other elements, with the exception of oxygen or hydrogen bismuth, with or without oxygen or hydrogen, and containing two or more other elements}
U	C01G 30/00	Compounds of antimony
M	C01G 30/002	• {Compounds containing, besides antimony, two or more other elements, with the exception of oxygen or hydrogen antimony, with or without oxygen or hydrogen, and containing two or more other elements (C01G 30/001 takes precedence)}
U	C01G 31/00	Compounds of vanadium
M	C01G 31/006	• {Compounds containing, besides vanadium, two or more other elements, with the exception of oxygen or hydrogen vanadium, with or without oxygen or hydrogen, and containing two or more other elements}
U	C01G 33/00	Compounds of niobium
M	C01G 33/006	• {Compounds containing, besides niobium, two or more other elements, with the exception of oxygen or hydrogen niobium, with or without oxygen or hydrogen, and containing two or more other elements}
U	C01G 35/00	Compounds of tantalum
M	C01G 35/006	• {Compounds containing, besides tantalum, two or more other elements, with the exception of oxygen or hydrogen tantalum, with or without oxygen or hydrogen, and containing two or more other elements}
U	C01G 37/00	Compounds of chromium
M	C01G 37/006	• {Compounds containing, besides chromium, two or more other elements, with the exception of oxygen or hydrogen chromium, with or without oxygen or hydrogen, and containing two or more other elements}
U	C01G 39/00	Compounds of molybdenum
M	C01G 39/006	• {Compounds containing, besides molybdenum, two or more other elements, with the exception of oxygen or hydrogen molybdenum, with or without oxygen or hydrogen, and containing two or more other elements}
U	C01G 41/00	Compounds of tungsten
M	C01G 41/006	• {Compounds containing, besides tungsten, two or more other elements, with the exception of oxygen or hydrogen tungsten, with or without oxygen or hydrogen, and containing two or more other elements}
U	C01G 43/00	Compounds of uranium
M	C01G 43/006	• {Compounds containing, besides uranium, two or more other elements, with the exception of oxygen or hydrogen uranium, with or without oxygen or hydrogen, and containing two or more other elements}

C C01G 45/00 Compounds of manganese**WARNING**

Group C01G 45/00 is impacted by reclassification into groups C01G 45/03, C01G 45/05, C01G 45/20, C01G 45/22 and C01G 45/24.

All groups listed in this Warning should be considered in order to perform a complete search.

- D C01G 45/003 • {Preparation involving a liquid-liquid extraction, an adsorption or an ion-exchange}
- <administratively transferred to [C01G 45/01](#)>
- D C01G 45/006 • {Compounds containing, besides manganese, two or more other elements, with the exception of oxygen or hydrogen (manganates, manganites or permanganates C01G 45/12)}
- <administratively transferred to [C01G 45/22](#)>
- N C01G 45/01 • Preparation or separation involving a liquid-liquid extraction, an adsorption or an ion-exchange

WARNING

Group C01G 45/01 is impacted by reclassification into groups C01G 45/03, C01G 45/05, C01G 45/20, C01G 45/22 and C01G 45/24.

All groups listed in this Warning should be considered in order to perform a complete search.

- C C01G 45/02 • Oxides; **Hydroxides**

WARNING

Group C01G 45/02 is impacted by reclassification into groups C01G 45/022, C01G 45/024, C01G 45/026, C01G 45/028 and C01G 45/03.

All groups listed in this Warning should be considered in order to perform a complete search.

- N C01G 45/022 • • Manganese monoxide
- WARNING**
- Group C01G 45/022 is incomplete pending reclassification of documents from group C01G 45/02.*
- All groups listed in this Warning should be considered in order to perform a complete search.*

- N C01G 45/024 • • Manganese dioxide
- WARNING**
- Group C01G 45/024 is incomplete pending reclassification of documents from group C01G 45/02.*
- All groups listed in this Warning should be considered in order to perform a complete search.*

- N C01G 45/026 • • Dimanganese trioxide
- WARNING**
- Group C01G 45/026 is incomplete pending reclassification of documents from group C01G 45/02.*
- All groups listed in this Warning should be considered in order to perform a complete search.*

- N C01G 45/028
- Trimanganese tetraoxide
- WARNING
Group [C01G 45/028](#) is incomplete pending reclassification of documents from group [C01G 45/02](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N C01G 45/03
- Hydroxides; Oxyhydroxides
- WARNING
Group [C01G 45/03](#) is incomplete pending reclassification of documents from groups [C01G 45/00](#) and [C01G 45/02](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- U C01G 45/04
- Carbonyls
- N C01G 45/05
- Carbonates
- WARNING
Group [C01G 45/05](#) is incomplete pending reclassification of documents from group [C01G 45/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- C C01G 45/06
- Halides; **Oxyhalides**
- WARNING
Group [C01G 45/06](#) is impacted by reclassification into group [C01G 45/07](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N C01G 45/07
- Chlorides; Oxychlorides
- WARNING
Group [C01G 45/07](#) is incomplete pending reclassification of documents from group [C01G 45/06](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- U C01G 45/08
- Nitrates
- U C01G 45/10
- Sulfates
- M C01G 45/12
- **Manganates {manganites or} permanganates** **Complex oxides containing manganese and at least one other metal element**
- M C01G 45/1207
- • {Permanganates ($[\text{MnO}_4]^{2-}$) or manganates ($[\text{MnO}_4]^{2-}$)}
- M C01G 45/1214
- • {containing alkali metals}
- M C01G 45/1221
- • {Manganates or manganites with **a manganese oxidation state of Mn(III); Mn(IV) trivalent manganese, tetravalent manganese** or mixtures thereof}
- M C01G 45/1228
- • • {of the type $[\text{MnO}_2]_n^{2-}$, e.g. LiMnO_2 , $\text{Li}[\text{MxMn}_{1-x}\text{O}_2]$ LiMnO_2 or $\text{Li}(\text{M}_x\text{Mn}_{1-x})\text{O}_2$ }
- M C01G 45/1235
- • • {of the type $[\text{Mn}_2\text{O}_4]^{2-}$, e.g. $\text{Li}_2\text{Mn}_2\text{O}_4$, $\text{Li}_2[\text{MxMn}_{2-x}\text{O}_4]$ $\text{Li}_2\text{Mn}_2\text{O}_4$ or $\text{Li}_2(\text{M}_x\text{Mn}_{2-x})\text{O}_4$ }
- M C01G 45/1242
- • • {of the type $[\text{Mn}_2\text{O}_4]^{2-}$, e.g. LiMn_2O_4 , $\text{Li}[\text{MxMn}_{2-x}\text{O}_4]$ LiMn_2O_4 or $\text{Li}(\text{M}_x\text{Mn}_{2-x})\text{O}_4$ }
- M C01G 45/125
- • • {of the type $[\text{MnO}_3]_n^{2-}$, e.g. Li_2MnO_3 , $\text{Li}_2[\text{MxMn}_{1-x}\text{O}_3]$, $(\text{La}, \text{Sr})\text{MnO}_3$ CaMnO_3 }

M	C01G 45/1257	<ul style="list-style-type: none"> • • • {containing lithium, e.g. Li_2MnO_3, $\text{Li}_2[\text{M}_x\text{Mn}_{1-x}\text{O}_3]$ Li_2MnO_3 or $\text{Li}_2(\text{M}_x\text{Mn}_{1-x})\text{O}_3$}
M	C01G 45/1264	<ul style="list-style-type: none"> • • • {containing rare earth containing rare earths, e.g. $\text{La}_{1-x}\text{Ca}_x\text{MnO}_3$, LaMnO_3 $(\text{La}_{1-x}\text{Ca}_x)\text{MnO}_3$ or LaMnO_3}
M	C01G 45/1271	<ul style="list-style-type: none"> • • • {of the type $[\text{Mn}_2\text{O}_8]_n-(\text{Mn}_2\text{O}_8)^{n-}$, e.g. $(\text{LaSr}_3\text{LaSr}_3)\text{Mn}_2\text{O}_8\text{Mn}_2\text{O}_8$}
M	C01G 45/1278	<ul style="list-style-type: none"> • • • {of the type $[\text{Mn}_2\text{O}_7]_n-(\text{Mn}_2\text{O}_7)^{n-}$, e.g. $(\text{Sr}_{2-x}\text{Nd}_x\text{Sr}_{2-x}\text{Nd}_x)\text{Mn}_2\text{O}_7$, $\text{Ti}_2\text{Mn}_2\text{O}_7\text{Mn}_2\text{O}_7$ or $\text{Ti}_2\text{Mn}_2\text{O}_7$}
M	C01G 45/1285	<ul style="list-style-type: none"> • • • {of the type $[\text{Mn}_2\text{O}_5]_n-(\text{Mn}_2\text{O}_5)^{n-}$}
M	C01G 45/1292	<ul style="list-style-type: none"> • • • {of the type $[\text{Mn}_5\text{O}_{12}]_n-(\text{Mn}_5\text{O}_{12})^{n-}$}
N	C01G 45/20	<ul style="list-style-type: none"> • Compounds containing manganese, with or without oxygen or hydrogen, and containing one or more other elements (C01G 45/04 - C01G 45/12 take precedence) <p>WARNING</p> <p>Group C01G 45/20 is incomplete pending reclassification of documents from group C01G 45/00.</p> <p>All groups listed in this Warning should be considered in order to perform a complete search.</p>
Q	C01G 45/22	<ul style="list-style-type: none"> • • Compounds containing manganese, with or without oxygen or hydrogen, and containing two or more other elements <p>WARNING</p> <p>Group C01G 45/22 is incomplete pending reclassification of documents from group C01G 45/00.</p> <p>Group C01G 45/22 is also impacted by reclassification into group C01G 45/24.</p> <p>All groups listed in this Warning should be considered in order to perform a complete search.</p>
N	C01G 45/24	<ul style="list-style-type: none"> • • Hydroxides <p>WARNING</p> <p>Group C01G 45/24 is incomplete pending reclassification of documents from groups C01G 45/00 and C01G 45/22.</p> <p>All groups listed in this Warning should be considered in order to perform a complete search.</p>
U	C01G 47/00	Compounds of rhenium
M	C01G 47/006	<ul style="list-style-type: none"> • {Compounds containing, besides rhenium, two or more other elements, with the exception of oxygen or hydrogen rhenium, with or without oxygen or hydrogen, and containing two or more other elements}
U	C01G 49/00	Compounds of iron
M	C01G 49/009	<ul style="list-style-type: none"> • {Compounds containing, besides iron, two or more other elements, with the exception of oxygen or hydrogen iron, with or without oxygen or hydrogen, and containing two or more other elements}
C	C01G 51/00	Compounds of cobalt
<p>WARNING</p> <p>Group C01G 51/00 is impacted by reclassification into groups C01G 51/05, C01G 51/08, C01G 51/085, C01G 51/15, C01G 51/80, C01G 51/82 and C01G 51/84.</p> <p>All groups listed in this Warning should be considered in order to perform a complete search.</p>		

D	C01G 51/003	<ul style="list-style-type: none"> • {Preparation involving a liquid-liquid extraction, an adsorption or an ion-exchange} <p><administratively transferred to C01G 51/01></p>
D	C01G 51/006	<ul style="list-style-type: none"> • {Compounds containing, besides cobalt, two or more other elements, with the exception of oxygen or hydrogen (cobaltates C01G 51/40)} <p><administratively transferred to C01G 51/82></p>
N	C01G 51/01	<ul style="list-style-type: none"> • Preparation or separation involving a liquid-liquid extraction, an adsorption or an ion-exchange
U	C01G 51/02	<ul style="list-style-type: none"> • Carbonyls
C	C01G 51/04	<ul style="list-style-type: none"> • Oxides; Hydroxides <p>WARNING Group C01G 51/04 is impacted by reclassification into group C01G 51/05. All groups listed in this Warning should be considered in order to perform a complete search.</p>
N	C01G 51/05	<ul style="list-style-type: none"> • Hydroxides; Oxyhydroxides <p>WARNING Group C01G 51/05 is incomplete pending reclassification of documents from groups C01G 51/00 and C01G 51/04. All groups listed in this Warning should be considered in order to perform a complete search.</p>
U	C01G 51/06	<ul style="list-style-type: none"> • Carbonates
T	C01G 51/08	<ul style="list-style-type: none"> • Halides; Oxyhalides <p>WARNING Groups C01G 51/08 and C01G 51/085 are incomplete pending reclassification of documents from group C01G 51/00. All groups listed in this Warning should be considered in order to perform a complete search.</p>
T	C01G 51/085	<ul style="list-style-type: none"> • {Chlorides}; Oxychlorides
U	C01G 51/10	<ul style="list-style-type: none"> • Sulfates
D	C01G 51/12	<ul style="list-style-type: none"> • Complexes with ammonia <p><administratively transferred to C01G 51/20></p>
N	C01G 51/15	<ul style="list-style-type: none"> • Sulfides; Oxyulfides <p>WARNING Group C01G 51/15 is incomplete pending reclassification of documents from group C01G 51/00. All groups listed in this Warning should be considered in order to perform a complete search.</p>
N	C01G 51/20	<ul style="list-style-type: none"> • Complexes with ammonia
D	C01G 51/30	<ul style="list-style-type: none"> • {Sulfides} <p><administratively transferred to C01G 51/15></p>
M	C01G 51/40	<ul style="list-style-type: none"> • {Cobaltates} Complex oxides containing cobalt and at least one other metal element
M	C01G 51/42	<ul style="list-style-type: none"> • {containing alkali metals, e.g. LiCoO₂}
M	C01G 51/44	<ul style="list-style-type: none"> • {containing manganese}
M	C01G 51/50	<ul style="list-style-type: none"> • {of the type [MnO₂]ⁿ⁻ (MnO₂)ⁿ⁻, e.g. Li(Co_xMn_{1-x})O₂; Li(MyCo_xMn_{1-x-y}O₂ or Li(M_yCo_xMn_{1-x-y})O₂)O₂}

- M C01G 51/52 • • • {of the type $[\text{Mn}_2\text{O}_4]^{2-}(\text{Mn}_2\text{O}_4)^{2-}$, e.g. $\text{Li}_2\text{Li}_2(\text{Co}_x\text{Mn}_{2-x}\text{Co}_x\text{Mn}_{2-x})\text{O}_4$, Li_2O_4 or $\text{Li}_2(\text{MyCo}_x\text{Mn}_{2-x-y}\text{MyCo}_x\text{Mn}_{2-x-y})\text{O}_4$ } O_4
- M C01G 51/54 • • • {of the type $[\text{Mn}_2\text{O}_4]^{2-}(\text{Mn}_2\text{O}_4)^{2-}$, e.g. $\text{Li}(\text{Co}_x\text{Mn}_{2-x}\text{Co}_x\text{Mn}_{2-x})\text{O}_4$, $\text{Li}(\text{MyCo}_x\text{Mn}_{2-x-y}\text{O}_4$ or $\text{Li}(\text{MyCo}_x\text{Mn}_{2-x-y})\text{O}_4$ } O_4
- M C01G 51/56 • • • {of the type $[\text{MnO}_3]^{2-}(\text{MnO}_3)^{2-}$, e.g. $\text{Li}_2[\text{Co}_x\text{Mn}_{1-x}\text{O}_3]$, $\text{Li}_2[\text{MyCo}_x\text{Mn}_{1-x-y}\text{O}_3]$ } $\text{Li}_2(\text{Co}_x\text{Mn}_{1-x})\text{O}_3$ or $\text{Li}_2(\text{MyCo}_x\text{Mn}_{1-x-y})\text{O}_3$
- M C01G 51/58 • • • {of the type $[\text{Mn}_2\text{O}_8]^{n-}(\text{Mn}_2\text{O}_8)^{n-}$ }
- M C01G 51/60 • • • {of the type $[\text{Mn}_2\text{O}_7]^{n-}(\text{Mn}_2\text{O}_7)^{n-}$ }
- M C01G 51/62 • • • {of the type $[\text{Mn}_2\text{O}_5]^{n-}(\text{Mn}_2\text{O}_5)^{n-}$ }
- M C01G 51/64 • • • {of the type $[\text{Mn}_5\text{O}_{12}]^{n-}(\text{Mn}_5\text{O}_{12})^{n-}$ }
- M C01G 51/66 • {containing alkaline earth metals, e.g. SrCoO_3 }
- M C01G 51/68 • • {containing rare earth containing rare earths, e.g. $(\text{La}_{0.3}\text{Sr}_{0.7})\text{CoO}_3$ }
- M C01G 51/70 • • {containing rare earth containing rare earths, e.g. LaCoO_3 (C01G 51/68 takes precedence) }
- N C01G 51/80 • Compounds containing cobalt, with or without oxygen or hydrogen, and containing one or more other elements (C01G 51/02, C01G 51/06 - C01G 51/40 take precedence)

WARNING

Group C01G 51/80 is incomplete pending reclassification of documents from group C01G 51/00.

All groups listed in this Warning should be considered in order to perform a complete search.

- Q C01G 51/82 • • Compounds containing cobalt, with or without oxygen or hydrogen, and containing two or more other elements
- WARNING**
- Group C01G 51/82 is incomplete pending reclassification of documents from group C01G 51/00.
- Group C01G 51/82 is also impacted by reclassification into group C01G 51/84.
- All groups listed in this Warning should be considered in order to perform a complete search.

- N C01G 51/84 • • Hydroxides

WARNING

Group C01G 51/84 is incomplete pending reclassification of documents from groups C01G 51/00 and C01G 51/82.

All groups listed in this Warning should be considered in order to perform a complete search.

C C01G 53/00 Compounds of nickel**WARNING**

Group C01G 53/00 is impacted by reclassification into groups C01G 53/05, C01G 53/08, C01G 53/09, C01G 53/11, C01G 53/80, C01G 53/82 and C01G 53/84.

All groups listed in this Warning should be considered in order to perform a complete search.

D	C01G 53/003	<ul style="list-style-type: none"> • {Preparation involving a liquid-liquid extraction, an adsorption or an ion-exchange} <p><administratively transferred to C01G 53/01></p>
D	C01G 53/006	<ul style="list-style-type: none"> • {Compounds containing, besides nickel, two or more other elements, with the exception of oxygen or hydrogen (nickelates C01G 53/40)} <p><administratively transferred to C01G 53/82></p>
N	C01G 53/01	<ul style="list-style-type: none"> • Preparation or separation involving a liquid-liquid extraction, an adsorption or an ion-exchange
U	C01G 53/02	<ul style="list-style-type: none"> • Carbonyls
C	C01G 53/04	<ul style="list-style-type: none"> • Oxides; Hydroxides <p><u>WARNING</u> Group C01G 53/04 is impacted by reclassification into group C01G 53/05. All groups listed in this Warning should be considered in order to perform a complete search.</p>
N	C01G 53/05	<ul style="list-style-type: none"> • Hydroxides; Oxyhydroxides <p><u>WARNING</u> Group C01G 53/05 is incomplete pending reclassification of documents from groups C01G 53/00 and C01G 53/04. All groups listed in this Warning should be considered in order to perform a complete search.</p>
U	C01G 53/06	<ul style="list-style-type: none"> • Carbonates
T	C01G 53/08	<ul style="list-style-type: none"> • Halides; Oxyhalides <p><u>WARNING</u> Groups C01G 53/08 and C01G 53/09 are incomplete pending reclassification of documents from group C01G 53/00. All groups listed in this Warning should be considered in order to perform a complete search.</p>
T	C01G 53/09	<ul style="list-style-type: none"> • Chlorides; Oxychlorides
U	C01G 53/10	<ul style="list-style-type: none"> • Sulfates
T	C01G 53/11	<ul style="list-style-type: none"> • Sulfides; Oxysulfides <p><u>WARNING</u> Group C01G 53/11 is incomplete pending reclassification of documents from group C01G 53/00. All groups listed in this Warning should be considered in order to perform a complete search.</p>
U	C01G 53/12	<ul style="list-style-type: none"> • Complexes with ammonia
M	C01G 53/40	<ul style="list-style-type: none"> • {Nickelates} Complex oxides containing nickel and at least one other metal element
M	C01G 53/42	<ul style="list-style-type: none"> • • {containing alkali metals, e.g. LiNiO₂}
M	C01G 53/44	<ul style="list-style-type: none"> • • • {containing manganese}
C	C01G 53/50	<ul style="list-style-type: none"> • • • • {of the type [MnO₂]ⁿ⁻ (MnO₂)ⁿ⁻, e.g. Li(Ni_xMn_{1-x}Ni_xMn_{1-x})O₂; Li(MyNi_xMn_{1-x-y}O₂ or Li(MyNi_xMn_{1-x-y})O₂)O₂} <p><u>WARNING</u> Group C01G 53/50 is impacted by reclassification into groups C01G 53/502, C01G 53/504, C01G 53/506 and C01G 53/51. All groups listed in this Warning should be considered in order to perform a complete search.</p>

- N C01G 53/502 containing lithium and cobalt
- WARNING
Groups [C01G 53/502](#), [C01G 53/504](#) and [C01G 53/506](#) are incomplete pending reclassification of documents from group [C01G 53/50](#). All groups listed in this Warning should be considered in order to perform a complete search.
- N C01G 53/504 with the molar ratio of nickel with respect to all the metals other than alkali metals higher than or equal to 0.5, e.g. $\text{Li}(\text{M}_z\text{Ni}_x\text{Co}_y\text{Mn}_{1-x-y-z})\text{O}_2$ with $x \geq 0.5$
- N C01G 53/506 with the molar ratio of nickel with respect to all the metals other than alkali metals higher than or equal to 0.8, e.g. $\text{Li}(\text{M}_z\text{Ni}_x\text{Co}_y\text{Mn}_{1-x-y-z})\text{O}_2$ with $x \geq 0.8$
- N C01G 53/51 containing sodium
- WARNING
Group [C01G 53/51](#) is incomplete pending reclassification of documents from group [C01G 53/50](#). All groups listed in this Warning should be considered in order to perform a complete search.
- M C01G 53/52 {of the type $[\text{Mn}_2\text{O}_4]^{2-}(\text{Mn}_2\text{O}_4)^{2-}$, e.g. $\text{Li}_2\text{Li}_2(\text{Ni}_x\text{Mn}_{2-x}\text{Ni}_x\text{Mn}_{2-x})\text{O}_4$, Li_2O_4 or $\text{Li}_2(\text{MyNi}_x\text{Mn}_{2-x-y}\text{MyNi}_x\text{Mn}_{2-x-y})\text{O}_4$ } O_4
- M C01G 53/54 {of the type $[\text{Mn}_2\text{O}_4]^{1-}(\text{Mn}_2\text{O}_4)^{1-}$, e.g. $\text{Li}(\text{Ni}_x\text{Mn}_{2-x}\text{Ni}_x\text{Mn}_{2-x})\text{O}_4$, $\text{Li}(\text{MyNi}_x\text{Mn}_{2-x-y}\text{O}_4$ or $\text{Li}(\text{MyNi}_x\text{Mn}_{2-x-y})\text{O}_4$ } O_4
- M C01G 53/56 {of the type $[\text{MnO}_3]^{2-}(\text{MnO}_3)^{2-}$, e.g. $\text{Li}_2[\text{Ni}_x\text{Mn}_{1-x}\text{O}_3]$, $\text{Li}_2[\text{MyNi}_x\text{Mn}_{1-x-y}\text{O}_3]\text{Li}_2(\text{Ni}_x\text{Mn}_{1-x})\text{O}_3$ or $\text{Li}_2(\text{MyNi}_x\text{Mn}_{1-x-y})\text{O}_3$ }
- M C01G 53/58 {of the type $[\text{Mn}_2\text{O}_8]^{n-}(\text{Mn}_2\text{O}_8)^{n-}$ }
- M C01G 53/60 {of the type $[\text{Mn}_2\text{O}_7]^{n-}(\text{Mn}_2\text{O}_7)^{n-}$ }
- M C01G 53/62 {of the type $[\text{Mn}_2\text{O}_5]^{n-}(\text{Mn}_2\text{O}_5)^{n-}$ }
- M C01G 53/64 {of the type $[\text{Mn}_5\text{O}_{12}]^{n-}(\text{Mn}_5\text{O}_{12})^{n-}$ }
- M C01G 53/66 . . {containing alkaline earth metals, e.g. SrNiO_3 , or SrNiO_2 }
- M C01G 53/68 . . . {containing rare earth containing rare earths, e.g. $\text{La}_{1.62}\text{Sr}_{0.38}\text{NiO}_4$ } $(\text{La}_{1.62}\text{Sr}_{0.38})\text{NiO}_4$
- M C01G 53/70 . . {containing rare earth containing rare earths, e.g. LaNiO_3 ([C01G 53/68](#) takes precedence) }
- N C01G 53/80 . Compounds containing nickel, with or without oxygen or hydrogen, and containing one or more other elements ([C01G 53/02](#), [C01G 53/06](#) - [C01G 53/40](#) take precedence)
- WARNING
Group [C01G 53/80](#) is incomplete pending reclassification of documents from group [C01G 53/00](#). All groups listed in this Warning should be considered in order to perform a complete search.
- Q C01G 53/82 . . Compounds containing nickel, with or without oxygen or hydrogen, and containing two or more other elements
- WARNING
Group [C01G 53/82](#) is incomplete pending reclassification of documents from group [C01G 53/00](#).

Group [C01G 53/82](#) is also impacted by reclassification into group [C01G 53/84](#).

All groups listed in this Warning should be considered in order to perform a complete search.

N C01G 53/84

- Hydroxides

WARNING

Group [C01G 53/84](#) is incomplete pending reclassification of documents from groups [C01G 53/00](#) and [C01G 53/82](#).

All groups listed in this Warning should be considered in order to perform a complete search.

U C01G 55/00

Compounds of ruthenium, rhodium, palladium, osmium, iridium, or platinum

M C01G 55/002

- {Compounds containing, ~~besides~~ ruthenium, rhodium, palladium, osmium, iridium, or platinum, ~~two or more other elements, with the exception of oxygen or hydrogen~~ *with or without oxygen or hydrogen, and containing two or more other elements* ([C01G 55/007](#) takes precedence)}

U C01G 56/00

Compounds of transuranic elements

M C01G 56/003

- {Compounds ~~comprising, besides~~ *containing* transuranic elements, ~~two or more other elements, with the exception of oxygen or hydrogen~~ *with or without oxygen or hydrogen, and containing two or more other elements* ([C01G 56/001](#) takes precedence)}

U C01G 99/00

Subject matter not provided for in other groups of this subclass

M C01G 99/006

- {Compounds containing, ~~besides~~ a metal not provided for elsewhere in this subclass, ~~two or more other elements other than oxygen or hydrogen~~ *with or without oxygen or hydrogen, and containing two or more other elements* ([C01G 99/003](#) takes precedence)}

Project: MP12350 (C07C)

U C07C 49/00

Ketones; Ketenes; Dimeric ketenes (heterocyclic compounds [C07D](#), e.g. beta-lactones [C07D 305/12](#)); Ketonic chelates

U C07C 49/587

- Unsaturated compounds containing a keto groups being part of a ring

M C07C 49/603

- of a six-membered ring, *e.g. quinone methides*

M C07C 50/00

Quinones (~~for quinone methides, see unsaturated ketones with a keto group being part of a ring~~)

NOTE

In this group, quinhydrone are classified according to their quinoid part.

Project: MP12350 (C07H)

M C07H 23/00

Compounds containing boron, silicon, or a metal, e.g. chelates, *or* vitamin B₁₂ (esters with inorganic acids [C07H 11/00](#); ~~metal salts, see parent compounds~~)

NOTE

Metal salts of a compound are classified as the parent compound.

Project: MP12350 (C08F)

- M C08F 30/00** Homopolymers **and/or** copolymers of compounds having one or more unsaturated aliphatic radicals, each having only one carbon-to-carbon double bond, and containing phosphorus, selenium, tellurium or a metal (~~metal salts, e.g. phenolates or alcoholates, see the parent compounds~~)

NOTE

{In this group, C-Sets are used. The detailed information about the C-Sets construction and the associated syntax rules is present in the Definitions of [C08F.](#)}

- M C08F 130/00** Homopolymers of compounds having one or more unsaturated aliphatic radicals, each having only one carbon-to-carbon double bond, and containing phosphorus, selenium, tellurium or a metal (~~metal salts, e.g. phenolates or alcoholates, see the parent compounds~~)

NOTE

{In this group, C-Sets are used. The detailed information about the C-Sets construction and the associated syntax rules is present in the Definitions of [C08F.](#)}

- M C08F 230/00** Copolymers of compounds having one or more unsaturated aliphatic radicals, each having only one carbon-to-carbon double bond, and containing phosphorus, selenium, tellurium or a metal (~~metal salts, e.g. phenolates or alcoholates, see the parent compounds~~)

NOTE

{In this group, C-Sets are used. The detailed information about the C-Sets construction and the associated syntax rules is present in the Definitions of [C08F.](#)}

Project: RP12347 (C08L)

- U C08L 23/00** Compositions of homopolymers or copolymers of unsaturated aliphatic hydrocarbons having only one carbon-to-carbon double bond; Compositions of derivatives of such polymers

NOTE

In this group, C-Sets are used.

The detailed information about the C-Sets construction and the associated syntax rules is present in the Definitions of [C08L.](#)

- U C08L 23/02 . not modified by chemical after-treatment
- M C08L 23/025 . . {~~Copolymer of an unspecified olefin with a monomer other than an olefin~~} *Copolymers of unspecified olefins with monomers other than olefins*
- U C08L 23/04 . . Homopolymers or copolymers of ethene
- U C08L 23/08 . . . Copolymers of ethene ([C08L 23/16](#) takes precedence)
- M C08L 23/0807 {~~Copolymers of ethene~~ with unsaturated hydrocarbons only containing ~~more than three carbon atoms~~} *four or more carbon atoms*
- M C08L 23/0815 {~~Copolymers of ethene~~ with aliphatic 1-olefins *containing one carbon-to-carbon double bond*}
- M C08L 23/0823 {~~Copolymers of ethene~~ with aliphatic cyclic olefins}
- M C08L 23/083 {~~Copolymers of ethene~~ with aliphatic polyenes, i.e. containing ~~more than one unsaturated bond~~ *two or more carbon-to-carbon double bonds*}
- M C08L 23/0838 {~~Copolymers of ethene with aromatic monomers~~ *with monomers including an aromatic carbocyclic ring*}

- M C08L 23/0846 {~~Copolymers of ethene~~ with unsaturated hydrocarbons containing ~~other atoms~~ *atoms other* than carbon or hydrogen-~~atoms~~}
 - M C08L 23/0853 {~~Vinylacetate~~} *Ethene vinyl acetate copolymers*
 - M C08L 23/0861 {~~Saponified vinylacetate~~} *Saponified copolymers, e.g. ethene vinyl alcohol copolymers*
 - M C08L 23/0869 {~~Acids or derivatives thereof~~} *with unsaturated acids, e.g. [meth]acrylic acid; with unsaturated esters, e.g. [meth]acrylic acid esters*
 - M C08L 23/0876 {~~Neutralised polymers~~} *Salts thereof, i.e. ionomers*
 - M C08L 23/0884 {~~Epoxide-containing esters~~} *Epoxide-containing esters*
 - M C08L 23/0892 {~~containing monomers with other atoms~~} *with monomers containing atoms other* than carbon, hydrogen or oxygen-~~atoms~~}
 - U C08L 23/10 . . Homopolymers or copolymers of propene
 - U C08L 23/14 . . . Copolymers of propene ([C08L 23/16](#) takes precedence)
 - M C08L 23/145 {~~Copolymers of propene~~ with monomers having ~~more than one C=C double bond~~ *two or more carbon-to-carbon double bonds*}
 - M C08L 23/147 {~~Copolymers of propene~~ with monomers containing ~~other atoms~~ *atoms other* than carbon or hydrogen-~~atoms~~}
 - M C08L 23/16 . . {~~Elastomeric~~-ethene *Ethene*-propene or ethene-propene-diene copolymers; {e.g. ~~EPR and EPDM rubbers~~}
- NOTE**
This group is used for polymers comprising both ethylene and propylene
- U C08L 23/18 . . Homopolymers or copolymers of hydrocarbons having four or more carbon atoms
 - U C08L 23/20 . . . having four to nine carbon atoms
 - M C08L 23/22 Copolymers of isobutene; Butyl rubber-~~};~~ *Homopolymers* or copolymers of other iso-olefins}
 - M C08L 23/26 . . modified by chemical after-treatment (*saponified copolymers C08L 23/0861; unsaturated acid salts C08L 23/0876*)
 - M C08L 23/28 . . by reaction with halogens or ~~compounds containing halogen~~ *halogen-containing compounds* ([C08L 23/32](#) takes precedence)
 - M C08L 23/283 . . . {~~Halogenated homo- or copolymers of iso-olefins~~} *Iso-olefin halogenated homopolymers or copolymers*
 - M C08L 23/286 . . . {~~Chlorinated polyethylene~~} *Chlorinated polyethene*
 - M C08L 23/36 . . by reaction with ~~compounds containing nitrogen~~ *nitrogen-containing compounds*, e.g. by nitration

Project: MP12350 (C09B)

- U C09B 69/00 **Dyes not provided for by a single group of this subclass**
- M C09B 69/02 . Dyestuff salts, e.g. salts of acid dyes with basic dyes-~~(for Na, K or NH₄⁺ salts or for chlorides, sulfates or chlorozincates, see the relevant dye groups)~~

Project: Unknown (C09C)

- U C09C 1/00 **Treatment of specific inorganic materials other than fibrous fillers (tenebrescent materials [C09K 9/00](#); luminescent materials [C09K 11/00](#)); Preparation of carbon black**
- U C09C 1/62 . Metallic pigments or fillers {([C09C 1/0015](#) takes precedence)}
- U C09C 1/64 . . Aluminium
- M C09C 1/648 . . . {treated with inorganic ~~and~~ *and* organic, e.g. polymeric, compounds}

Project: RP0757-F (C09K)

M	C09K 23/00	<p>Use of substances as emulsifying, wetting, dispersing, or foam-producing agents</p> <p><u>WARNING</u></p> <p>Group C09K 23/00 is impacted by reclassification into groups C09K 23/005, C09K 23/02, C09K 23/04, C09K 23/06, C09K 23/08, C09K 23/10, C09K 23/12, C09K 23/14, C09K 23/16, C09K 23/18, C09K 23/20, C09K 23/22, C09K 23/24, C09K 23/26, C09K 23/28, C09K 23/30, C09K 23/32, C09K 23/34, C09K 23/36, C09K 23/38, C09K 23/40, C09K 23/42, C09K 23/44, C09K 23/46, C09K 23/48, C09K 23/50, C09K 23/52, C09K 23/54 and C09K 23/56.</p> <p>All groups listed in this Warning should be considered in order to perform a complete search.</p>
M	C09K 23/005	<ul style="list-style-type: none"> • {Organic compounds containing selenium or tellurium} <p><u>WARNING</u></p> <p>Group C09K 23/005 is incomplete pending reclassification of documents from group C09K 23/00.</p> <p>Groups C09K 23/00 and C09K 23/005 should be considered in order to perform a complete search.</p>
M	C09K 23/02	<ul style="list-style-type: none"> • Alkyl sulfonates or sulfuric acid ester salts derived from monohydric alcohols <p><u>WARNING</u></p> <p>Group C09K 23/02 is incomplete pending reclassification of documents from group C09K 23/00.</p> <p>Groups C09K 23/00 and C09K 23/02 should be considered in order to perform a complete search.</p>
M	C09K 23/04	<ul style="list-style-type: none"> • Sulfonates or sulfuric acid ester salts derived from polyhydric alcohols or amino alcohols or derivatives thereof (sulfated or sulfonated fatty oils C09K 23/08) <p><u>WARNING</u></p> <p>Group C09K 23/04 is incomplete pending reclassification of documents from group C09K 23/00.</p> <p>Groups C09K 23/00 and C09K 23/04 should be considered in order to perform a complete search.</p>
M	C09K 23/06	<ul style="list-style-type: none"> • Esters of higher fatty acids with hydroxyalkylated sulfonic acids or salts thereof <p><u>WARNING</u></p> <p>Group C09K 23/06 is incomplete pending reclassification of documents from group C09K 23/00.</p> <p>Groups C09K 23/00 and C09K 23/06 should be considered in order to perform a complete search.</p>
M	C09K 23/08	<ul style="list-style-type: none"> • Sulfation or sulfonation products of fats, oils, waxes, or higher fatty acids or esters thereof with monovalent alcohols <p><u>WARNING</u></p> <p>Group C09K 23/08 is incomplete pending reclassification of documents from group C09K 23/00.</p> <p>Groups C09K 23/00 and C09K 23/08 should be considered in order to perform a complete search.</p>
M	C09K 23/10	<ul style="list-style-type: none"> • Derivatives of low-molecular-weight sulfocarboxylic acids or sulfopolycarboxylic acids <p><u>WARNING</u></p> <p>Group C09K 23/10 is incomplete pending reclassification of documents from group C09K 23/00.</p>

~~Groups C09K 23/00 and C09K 23/10 should be considered in order to perform a complete search.~~

M C09K 23/12

- Sulfonates of aromatic or alkylated aromatic compounds

WARNING

~~Group C09K 23/12 is incomplete pending reclassification of documents from group C09K 23/00.~~

~~Groups C09K 23/00 and C09K 23/12 should be considered in order to perform a complete search.~~

M C09K 23/14

- Derivatives of phosphoric acid

WARNING

~~Group C09K 23/14 is incomplete pending reclassification of documents from group C09K 23/00.~~

~~Group C09K 23/14 is also impacted by reclassification into group C09K 23/20. Groups C09K 23/00, C09K 23/14 and C09K 23/20 should be considered in order to perform a complete search.~~

M C09K 23/16

- Amines or polyamines

WARNING

~~Group C09K 23/16 is incomplete pending reclassification of documents from group C09K 23/00.~~

~~Group C09K 23/16 is also impacted by reclassification into group C09K 23/30. Groups C09K 23/00, C09K 23/16 and C09K 23/30 should be considered in order to perform a complete search.~~

M C09K 23/18

- Quaternary ammonium compounds

WARNING

~~Group C09K 23/18 is incomplete pending reclassification of documents from group C09K 23/00.~~

~~Groups C09K 23/00 and C09K 23/18 should be considered in order to perform a complete search.~~

M C09K 23/20

- Phosphonium and sulfonium compounds

WARNING

~~Group C09K 23/20 is incomplete pending reclassification of documents from groups C09K 23/00 and C09K 23/14.~~

~~Groups C09K 23/00, C09K 23/14 and C09K 23/20 should be considered in order to perform a complete search.~~

M C09K 23/22

- Amides or hydrazides

WARNING

~~Groups C09K 23/22 and C09K 23/24 are incomplete pending reclassification of documents from group C09K 23/00.~~

~~Groups C09K 23/00, C09K 23/22 and C09K 23/24 should be considered in order to perform a complete search.~~

M C09K 23/26

- Sulfonamides

WARNING

~~Group C09K 23/26 is incomplete pending reclassification of documents from group C09K 23/00.~~

~~Groups C09K 23/00 and C09K 23/26 should be considered in order to perform a complete search.~~

M	C09K 23/28	<ul style="list-style-type: none">• Aminocarboxylic acids (proteins and protein hydrolysates C09K 23/30) <p>WARNING Group C09K 23/28 is incomplete pending reclassification of documents from group C09K 23/00. Groups C09K 23/00 and C09K 23/28 should be considered in order to perform a complete search.</p>
M	C09K 23/30	<ul style="list-style-type: none">• Proteins; Protein hydrolysates <p>WARNING Group C09K 23/30 is incomplete pending reclassification of documents from groups C09K 23/00 and C09K 23/16. Groups C09K 23/00, C09K 23/16 and C09K 23/30 should be considered in order to perform a complete search.</p>
M	C09K 23/32	<ul style="list-style-type: none">• Heterocyclic compounds <p>WARNING Group C09K 23/32 is incomplete pending reclassification of documents from group C09K 23/00. Groups C09K 23/00 and C09K 23/32 should be considered in order to perform a complete search.</p>
M	C09K 23/34	<ul style="list-style-type: none">• Higher-molecular-weight carboxylic acid esters (esters of higher fatty acids with hydroxyalkylated sulfonic acids or salts thereof C09K 23/06) <p>WARNING Groups C09K 23/34 and C09K 23/36 are incomplete pending reclassification of documents from group C09K 23/00. Groups C09K 23/00, C09K 23/34 and C09K 23/36 should be considered in order to perform a complete search.</p>
M	C09K 23/38	<ul style="list-style-type: none">• Alcohols, e.g. oxidation products of paraffins <p>WARNING Group C09K 23/38 is incomplete pending reclassification of documents from group C09K 23/00. Groups C09K 23/00 and C09K 23/38 should be considered in order to perform a complete search.</p>
M	C09K 23/40	<ul style="list-style-type: none">• Phenols <p>WARNING Group C09K 23/40 is incomplete pending reclassification of documents from group C09K 23/00. Groups C09K 23/00 and C09K 23/40 should be considered in order to perform a complete search.</p>
M	C09K 23/42	<ul style="list-style-type: none">• Ethers, e.g. polyglycol ethers of alcohols or phenols <p>WARNING Groups C09K 23/42 - C09K 23/48 are incomplete pending reclassification of documents from group C09K 23/00. All groups listed in this Warning should be considered in order to perform a complete search.</p>
M	C09K 23/50	<ul style="list-style-type: none">• Derivatives of lignin <p>WARNING Group C09K 23/50 is incomplete pending reclassification of documents from group C09K 23/00.</p>

~~Groups C09K 23/00 and C09K 23/50 should be considered in order to perform a complete search.~~

M C09K 23/52

- Natural or synthetic resins or their salts

WARNING

~~Group C09K 23/52 is incomplete pending reclassification of documents from group C09K 23/00.~~

~~Groups C09K 23/00 and C09K 23/52 should be considered in order to perform a complete search.~~

M C09K 23/54

- Silicon compounds

WARNING

~~Group C09K 23/54 is incomplete pending reclassification of documents from group C09K 23/00.~~

~~Groups C09K 23/00 and C09K 23/54 should be considered in order to perform a complete search.~~

M C09K 23/56

- Glucosides; Mucilage; Saponins

WARNING

~~Group C09K 23/56 is incomplete pending reclassification of documents from group C09K 23/00.~~

~~Groups C09K 23/00 and C09K 23/56 should be considered in order to perform a complete search.~~

Project: Unknown (C10M)

M C10M 2205/00

Organic ~~macromolecular~~**macromolecular** hydrocarbon compounds or fractions, whether or not modified by oxidation as ingredients in lubricant compositions

NOTE

Copolymers are indexed with the symbol for the main monomer always being present, (e.g. [C10M 2205/026](#), [C10M 2205/022](#)) according to the last place rule, followed by the symbol of the other monomers, (e.g. [C10M 2205/022](#), [C10M 2205/00](#))

M C10M 2207/00

Organic ~~non-macromolecular~~**non-macromolecular** hydrocarbon compounds containing hydrogen, carbon and oxygen as ingredients in lubricant compositions

NOTE

In this group compounds, (e.g. phenols, succinic acid) substituted by an alkyl group derived from a polymerised olefin are not considered as macromolecular compounds

M C10M 2211/00

Organic ~~non-macromolecular~~**non-macromolecular** compounds containing halogen as ingredients in lubricant compositions

M C10M 2213/00

Organic ~~macromolecular~~**macromolecular** compounds containing halogen as ingredients in lubricant compositions

M C10M 2215/00

Organic ~~non-macromolecular~~**non-macromolecular** compounds containing nitrogen as ingredients in lubricant ~~compositions~~**Compositions**

M C10M 2215/24

- having hydrocarbon substituents containing ~~thirty or more carbon atoms~~**thirty or more carbon atoms**, e.g. nitrogen derivatives of substituted succinic acid

M C10M 2219/00

Organic ~~non-macromolecular~~**non-macromolecular** compounds containing sulfur, selenium or tellurium as ingredients in lubricant compositions

- U C10M 2219/04 • containing sulfur-to-oxygen bonds, i.e. sulfones, sulfoxides
- M C10M 2219/046 • • Overbased sulfonic acid salts
- M C10M 2221/00 Organic ~~macromolecular~~macromolecular compounds containing sulfur, selenium or tellurium as ingredients in lubricant compositions
- M C10M 2223/00 Organic ~~non-macromolecular~~non-macromolecular compounds containing phosphorus as ingredients in lubricant compositions
- M C10M 2225/00 Organic ~~macromolecular~~macromolecular compounds containing phosphorus as ingredients in lubricant compositions
- M C10M 2227/00 Organic ~~non-macromolecular~~non-macromolecular compounds containing atoms of elements not provided for in groups [C10M 2203/00](#), [C10M 2207/00](#), [C10M 2211/00](#), [C10M 2215/00](#), [C10M 2219/00](#) or [C10M 2223/00](#) as ingredients in lubricant compositions
- M C10M 2229/00 Organic ~~macromolecular~~macromolecular compounds containing atoms of elements not provided for in groups [C10M 2205/00](#), [C10M 2209/00](#), [C10M 2213/00](#), [C10M 2217/00](#), [C10M 2221/00](#) or [C10M 2225/00](#) as ingredients in lubricant compositions

Project: RP12357 (C12M)

C12M

APPARATUS FOR ENZYMOLOGY OR MICROBIOLOGY; {APPARATUS FOR CULTURING MICROORGANISMS FOR PRODUCING BIOMASS, FOR GROWING CELLS OR FOR OBTAINING FERMENTATION OR METABOLIC PRODUCTS, i.e. BIOREACTORS OR FERMENTERS}

NOTES

1. In this subclass the term microorganism includes prokaryotic and eukaryotic cells. Viruses, human, animal or plant cells, protozoa, tissues and unicellular algae are considered microorganisms.
2. When classifying an apparatus according to its use in group [C12M 21/00](#), classification should also be given in at least one of the groups [C12M 23/00-C12M 99/00](#).
3. This subclass covers apparatus or devices for the fermentation or for growing microorganisms or animal tissues of both laboratory and industrial scale, i.e. bioreactors.
4. This subclass covers also apparatus or devices for the pre-treatment or after-treatment of the biomass or microorganisms to be cultured or that have been cultured.
5. This subclass does not cover the methods or processes taking place in the bioreactors that are not based on the use of the parts of the apparatus.
6. This subclass does not cover:
 - apparatus for culturing plant tissue, which are covered by [A01H 4/001](#);
 - apparatus for preservation of ~~excised~~ living parts of bodies of humans or animals, which are covered by ~~A01N 1/0242~~[A01N 1/142](#);
 - apparatus or devices for testing sterility conditions not linked to a bioreactor or fermenter growing biomass, which are covered by [A61L 2/00](#), [G01N 31/226](#);
 - apparatus for biological treatment of water, waste water, sewage or sludge, which are covered by [C02F 3/00](#), [C02F 11/00](#);
 - apparatus for brewing of beer, which are covered by [C12C](#);
 - apparatus for production of wine or vinegar, which are covered by [C12G](#), [C12J 1/10](#);
 - apparatus or devices for DNA and RNA technology, which are covered by [B01L 7/52](#), [B01J 19/0046](#), [C12N 15/1003](#);
 - fermentation processes, which are covered by [C12P](#);

- apparatus for bioleaching of ores, which are covered by [C22B 3/18](#);
- removing cellulose from cellulosic substances, which is covered by [D21C](#);
- apparatus or devices for sampling, detection, investigation or analysis of microorganisms or biosensors, which are covered by [G01N 33/48](#);
- apparatus for automatic analysis not linked to a bioreactor or fermenter growing biomass, which are covered by [G01N 35/00](#);
- testing or evaluating the effect of a chemical or biological compound involving human or animal cells, which are covered by [G01N 33/5005](#);
- apparatus for immunological test processes, which are covered by [G01N 33/5302](#).

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

U C12M 45/00

{Means for pre-treatment of biological substances}

M C12M 45/22

- {Means for packing or storing viable microorganisms (casings for storing cell samples [A61B 10/0096](#), preservation of living parts of the human or animal body [A01N 1/02](#)[A01N 1/10](#))}

Project: RP12357 (C12N)

U C12N 5/00

Undifferentiated human, animal or plant cells, e.g. cell lines; Tissues; Cultivation or maintenance thereof; Culture media therefor; (plant reproduction by tissue culture techniques [A01H 4/00](#))

NOTE

In this group, the following words are used with the meanings indicated:

- a "totipotent" cell can differentiate into all somatic lineages (ectoderm, mesoderm, endoderm), the germ line and extra-embryonic tissues such as the placenta;
- a "pluripotent" cell is a somatic stem cell which can differentiate into cells of at least two of the three somatic lineages (ectoderm, mesoderm, endoderm);
- a "multipotent" cell is restricted to one lineage;
- "progenitor" and "precursor" cells are further restricted within the lineage. If not explicitly foreseen, totipotent cells are classified with pluripotent cells. Multipotent cells should not be classified with pluripotent cells. Unless provided for otherwise, committed progenitors are classified with their progeny.

M C12N 5/06

- {Animal cells or tissues; Human cells or tissues (~~preservation of living cells or tissues~~ [A01N 1/02](#)[preservation of excised living parts](#) [A01N 1/10](#))}

NOTE

{In this group, the following words are used with the meanings indicated:

- a "totipotent" cell can differentiate into all somatic lineages (ectoderm, mesoderm, endoderm), the germ line and extra-embryonic tissues such as the placenta;
- a "pluripotent" cell is a somatic stem cell which can differentiate into cells of at least two of the three somatic lineages (ectoderm, mesoderm, endoderm);
- a "multipotent" cell is restricted to one lineage.

"Progenitor" and "precursor" cells are further restricted within the lineage. If not explicitly foreseen, totipotent cells are classified with pluripotent cells. Multipotent cells should not be classified with pluripotent cells. The last place priority rule does not apply between the subgroups of this group}

Project: RP10429-F (C12N)

U C12N 5/0602 • • {Vertebrate cells}

NOTE

Three-dimensional culture, tissue culture or organ culture are classified with the corresponding cells, if not specially provided for

M C12N 5/0634 • • • {Cells from the blood or the immune system}

NOTE

Committed progenitors are classified with their progeny

WARNING

Group C12N 5/0634 is impacted by reclassification into groups A61K 39/46, A61K 39/461 – A61K 39/46484 and A61K 2239/00 – A61K 2239/59. All groups listed in this Warning should be considered in order to perform a complete search.

M C12N 5/0635 • • • • {B lymphocytes}

WARNING

Group C12N 5/0635 is impacted by reclassification into groups A61K 39/46, A61K 39/461 – A61K 39/46484 and A61K 2239/00 – A61K 2239/59. All groups listed in this Warning should be considered in order to perform a complete search.

M C12N 5/0636 • • • • {T lymphocytes}

WARNING

Group C12N 5/0636 is impacted by reclassification into groups A61K 39/46, A61K 39/461 – A61K 39/46484 and A61K 2239/00 – A61K 2239/59. All groups listed in this Warning should be considered in order to perform a complete search.

M C12N 5/0637 • • • • • {Immunosuppressive T lymphocytes, e.g. regulatory T cells or Treg}

WARNING

Group C12N 5/0637 is impacted by reclassification into groups A61K 39/46, A61K 39/461 – A61K 39/46484 and A61K 2239/00 – A61K 2239/59. All groups listed in this Warning should be considered in order to perform a complete search.

M C12N 5/0638 • • • • • {Cytotoxic T lymphocytes [CTL] or lymphokine activated killer cells [LAK]}

WARNING

Group C12N 5/0638 is impacted by reclassification into groups A61K 39/46, A61K 39/461 – A61K 39/46484 and A61K 2239/00 – A61K 2239/59. All groups listed in this Warning should be considered in order to perform a complete search.

M C12N 5/0639 • • • • • {Dendritic cells, e.g. Langerhans cells in the epidermis}

WARNING

Group C12N 5/0639 is impacted by reclassification into groups A61K 39/46, A61K 39/461 – A61K 39/46484 and A61K 2239/00 – A61K 2239/59.

All groups listed in this Warning should be considered in order to perform a complete search.

- M C12N 5/064 • • • • {Immunosuppressive dendritic cells}

WARNING

Group C12N 5/064 is impacted by reclassification into groups A61K 39/46, A61K 39/461 -- A61K 39/46484 and A61K 2239/00 -- A61K 2239/59.

All groups listed in this Warning should be considered in order to perform a complete search.

- M C12N 5/0645 • • • • {Macrophages, e.g. Kuepfer cells in the liver; Monocytes}

WARNING

Group C12N 5/0645 is impacted by reclassification into groups A61K 39/46, A61K 39/461 -- A61K 39/46484 and A61K 2239/00 -- A61K 2239/59.

All groups listed in this Warning should be considered in order to perform a complete search.

- M C12N 5/0646 • • • • {Natural killers cells [NK], NKT cells}

WARNING

Group C12N 5/0646 is impacted by reclassification into groups A61K 39/46, A61K 39/461 -- A61K 39/46484, A61K 2239/00 -- A61K 2239/59.

All groups listed in this Warning should be considered in order to perform a complete search.

Project: RP12357 (C12N)

- U C12N 5/10 • Cells modified by introduction of foreign genetic material

- U C12N 5/12 • • Fused cells, e.g. hybridomas

- U C12N 5/16 • • • Animal cells

- U C12N 5/166 • • • • {resulting from interspecies fusion}

- N C12N 5/52 • {Chemical aspects of preservation of animal cells or human cells (Preservation of excised living parts of human of bodies [A01N 1/10](#))}

WARNING

Group [C12N 5/52](#) is incomplete pending reclassification of documents from group [A01N 1/12](#).

Groups [A01N 1/12](#) and [C12N 5/52](#) should be considered in order to perform a complete search.

- N C12N 5/522 • • {Preservation media}

WARNING

Group [C12N 5/522](#) is incomplete pending reclassification of documents from group [A01N 1/122](#).

Groups [A01N 1/122](#) and [C12N 5/522](#) should be considered in order to perform a complete search.

- N C12N 5/524 • • • {Disinfecting agents, e.g. antimicrobials}

WARNING

Group [C12N 5/524](#) is incomplete pending reclassification of documents from group [A01N 1/124](#).

Groups [A01N 1/124](#) and [C12N 5/524](#) should be considered in order to perform a complete search.

- N C12N 5/525
- • • {Freeze protecting agents, e.g. cryoprotectants or osmolarity regulators}
- WARNING
 Group [C12N 5/525](#) is incomplete pending reclassification of documents from group [A01N 1/125](#).
 Groups [A01N 1/125](#) and [C12N 5/525](#) should be considered in order to perform a complete search.
- N C12N 5/526
- • • {Physiologically active agents, e.g. antioxidants or nutrients}
- WARNING
 Group [C12N 5/526](#) is incomplete pending reclassification of documents from group [A01N 1/126](#).
 Groups [A01N 1/126](#) and [C12N 5/526](#) should be considered in order to perform a complete search.
- N C12N 5/528
- • {Chemically defined matrices for immobilising, holding or storing animal or human cells, e.g. alginate gels; Chemically altering animal or human cells}
- WARNING
 Group [C12N 5/528](#) is incomplete pending reclassification of documents from group [A01N 1/128](#).
 Groups [A01N 1/128](#) and [C12N 5/528](#) should be considered in order to perform a complete search.
- N C12N 5/54
- {Mechanical aspects of preservation of animal cells or human cells; Apparatus or containers therefor (Preservation of excised living parts of human or bodies [A01N 1/10](#))}
- WARNING
 Group [C12N 5/54](#) is incomplete pending reclassification of documents from groups [A01N 1/14](#), [A61J 1/10](#), [A61J 1/12](#), [A61J 1/16](#), [A61J 1/165](#), [A61M 1/0272](#) and [A61M 1/0277](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- N C12N 5/542
- • {Apparatus}
- WARNING
 Group [C12N 5/542](#) is incomplete pending reclassification of documents from groups [A01N 1/142](#), [A61J 1/10](#), [A61J 1/12](#), [A61J 1/16](#), [A61J 1/165](#), [A61M 1/0272](#) and [A61M 1/0277](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- N C12N 5/544
- • • {for temperature control, e.g. refrigerators or freeze-drying apparatus}
- WARNING
 Group [C12N 5/544](#) is incomplete pending reclassification of documents from groups [A01N 1/144](#), [A61J 1/10](#), [A61J 1/12](#), [A61J 1/16](#), [A61J 1/165](#), [A61M 1/0272](#) and [A61M 1/0277](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- N C12N 5/545
- • • • {Stationary or portable vessels generating cryogenic temperatures, e.g. liquid nitrogen baths}
- WARNING
 Group [C12N 5/545](#) is incomplete pending reclassification of documents from groups [A01N 1/145](#), [A61J 1/10](#), [A61J 1/12](#), [A61J 1/16](#), [A61J 1/165](#), [A61M 1/0272](#) and [A61M 1/0277](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N C12N 5/546
- {Non-refrigerated containers specially adapted for transporting or storing animal cells or human cells whilst preserving}
- WARNING
Group [C12N 5/546](#) is incomplete pending reclassification of documents from groups [A01N 1/146](#), [A61J 1/10](#), [A61J 1/12](#), [A61J 1/16](#), [A61J 1/165](#), [A61M 1/0272](#) and [A61M 1/0277](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N C12N 5/547
- • {Carriers for immersion in cryogenic fluid for slow freezing or vitrification}
- WARNING
Group [C12N 5/547](#) is incomplete pending reclassification of documents from groups [A01N 1/147](#), [A61J 1/10](#), [A61J 1/12](#), [A61J 1/16](#), [A61J 1/165](#), [A61M 1/0272](#) and [A61M 1/0277](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N C12N 5/548
- • {with provisions specially adapted for transporting}
- WARNING
Group [C12N 5/548](#) is incomplete pending reclassification of documents from groups [A01N 1/148](#), [A61J 1/10](#), [A61J 1/12](#), [A61J 1/16](#), [A61J 1/165](#), [A61M 1/0272](#) and [A61M 1/0277](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N C12N 5/56
- {Physical preservation processes for animal cells or human cells}
- WARNING
Group [C12N 5/56](#) is incomplete pending reclassification of documents from group [A01N 1/16](#).
Groups [A01N 1/16](#) and [C12N 5/56](#) should be considered in order to perform a complete search.
- N C12N 5/562
- {Temperature processes, e.g. following predefined temperature changes over time}
- WARNING
Group [C12N 5/562](#) is incomplete pending reclassification of documents from group [A01N 1/162](#).
Groups [A01N 1/162](#) and [C12N 5/562](#) should be considered in order to perform a complete search.
- N C12N 5/565
- {Pressure processes, e.g. following predefined pressure changes over time}
- WARNING
Group [C12N 5/565](#) is incomplete pending reclassification of documents from group [A01N 1/165](#).
Groups [A01N 1/165](#) and [C12N 5/565](#) should be considered in order to perform a complete search.
- N C12N 5/568
- {using electromagnetic fields or radiation; using acoustic waves or corpuscular radiation}
- WARNING
Group [C12N 5/568](#) is incomplete pending reclassification of documents from group [A01N 1/168](#).

Groups [A01N 1/168](#) and [C12N 5/568](#) should be considered in order to perform a complete search.

Project: RP0735-F (C12P)

U C12P 7/00

Preparation of oxygen-containing organic compounds

M C12P 7/62

- Carboxylic acid esters

WARNING

Groups C12P 7/62 and C12P 7/625 are incomplete pending reclassification of documents from group C12P 7/6436.
Groups C12P 7/6436, C12P 7/62 and C12P 7/625 should be considered in order to perform a complete search.

U C12P 7/64

- Fats; Fatty oils; Ester-type waxes; Higher fatty acids, i.e. having at least seven carbon atoms in an unbroken chain bound to a carboxyl group; Oxidised oils or fats

U C12P 7/6409

- • Fatty acids

M C12P 7/6427

- • • Polyunsaturated fatty acids [PUFA], i.e. having two or more double bonds in their backbone

WARNING

Group C12P 7/6427 is impacted by reclassification into groups C12P 7/6431, C12P 7/6432 and C12P 7/6434.
All groups listed in this Warning should be considered in order to perform a complete search.

M C12P 7/6431

- • • Linoleic acids [18:2[n-6]]

WARNING

Group C12P 7/6431 is incomplete pending reclassification of documents from group C12P 7/6427.
Groups C12P 7/6431 and C12P 7/6427 should be considered in order to perform a complete search.

M C12P 7/6432

- • • Eicosapentaenoic acids [EPA]

WARNING

Group C12P 7/6432 is incomplete pending reclassification of documents from group C12P 7/6427.
Groups C12P 7/6432 and C12P 7/6427 should be considered in order to perform a complete search.

M C12P 7/6434

- • • Docosahexenoic acids [DHA]

WARNING

Group C12P 7/6434 is incomplete pending reclassification of documents from group C12P 7/6427.
Groups C12P 7/6434 and C12P 7/6427 should be considered in order to perform a complete search.

M C12P 7/6436

- • Fatty acid esters

WARNING

Group C12P 7/6436 is impacted by reclassification into groups C12P 7/62 and C12P 7/625.
All groups listed in this Warning should be considered in order to perform a complete search.

M	C12P 7/6445	<ul style="list-style-type: none"> • • • Glycerides <p><u>WARNING</u> Group C12P 7/6445 is impacted by reclassification into group C12P 7/6458. Groups C12P 7/6445 and C12P 7/6458 should be considered in order to perform a complete search.</p>
M	C12P 7/6454	<ul style="list-style-type: none"> • • • by esterification <p><u>WARNING</u> Group C12P 7/6454 is impacted by reclassification into group C12P 7/6458. Groups C12P 7/6454 and C12P 7/6458 should be considered in order to perform a complete search.</p>
M	C12P 7/6458	<ul style="list-style-type: none"> • • • by transesterification, e.g. interesterification, ester interchange, alcoholysis or acidolysis <p><u>WARNING</u> Group C12P 7/6458 is incomplete pending reclassification of documents from groups C12P 7/6445, C12P 7/6454, C12P 7/6472, C12P 7/6481 and C12P 7/649. All groups listed in this Warning should be considered in order to perform a complete search.</p>
M	C12P 7/6472	<ul style="list-style-type: none"> • • • containing polyunsaturated fatty acid [PUFA] residues, i.e. having two or more double bonds in their backbone <p><u>WARNING</u> Group C12P 7/6472 is impacted by reclassification into group C12P 7/6458. Groups C12P 7/6472 and C12P 7/6458 should be considered in order to perform a complete search.</p>
M	C12P 7/6481	<ul style="list-style-type: none"> • • • Phosphoglycerides (phosphoglycerides having carboxylic acids with less than seven carbon atoms C12P 7/62) <p><u>WARNING</u> Group C12P 7/6481 is impacted by reclassification into group C12P 7/6458. Groups C12P 7/6481 and C12P 7/6458 should be considered in order to perform a complete search.</p>
M	C12P 7/649	<ul style="list-style-type: none"> • • • Biodiesel, i.e. fatty acid alkyl esters <p><u>WARNING</u> Group C12P 7/649 is impacted by reclassification into group C12P 7/6458. Groups C12P 7/649 and C12P 7/6458 should be considered in order to perform a complete search.</p>

Project: Unknown (C23C)

U	C23C 16/00	Chemical coating by decomposition of gaseous compounds, without leaving reaction products of surface material in the coating, i.e. chemical vapour deposition [CVD] processes (reactive sputtering or vacuum evaporation C23C 14/00)
U	C23C 16/44	• characterised by the method of coating (C23C 16/04 takes precedence)
U	C23C 16/50	• • using electric discharges {(generation and control of plasma in discharge tubes for surface treatment H01J 37/32 , H01J 37/34)}
M	C23C 16/503	• • • using de or ac DC or AC discharges

Project: MP12337 (D03D)

- U D03D 45/00 Looms with automatic weft replenishment (automatic replenishment in smallware looms [D03D 35/00](#), in circular looms [D03D 37/00](#))
- M D03D 45/20 • Changing bobbins, cops, ~~or other shuttle stock~~ *or other loom components carried by the shuttle*

Project: MP12350 (D06B)

- M D06B 21/00 Successive treatments of textile materials by liquids, gases or vapours (~~successive treatments in which the characteristics of a single treatment are of interest only, or in which all treatments have characteristics provided for in a single main group, see the relevant groups for the single treatment~~)

NOTE

This group covers the combined or successive treatments of textiles using liquids, gases or vapours.

Project: RP12064-F (D06F)

- U D06F 39/00 Details of washing machines not specific to a single type of machines covered by groups [D06F 9/00](#) - [D06F 27/00](#) (control of washing machines [D06F 33/00](#), [D06F 34/00](#))

- D D06F 39/006
—(Frozen) • {Recovery arrangements, e.g. for the recovery of energy or water}

WARNING

Group D06F 39/006 is no longer used for the classification of documents as of January 1, 2024.

The content of this group is being reclassified into groups D06F 39/20 and D06F 39/30.

Groups D06F 39/006, D06F 39/20 and D06F 39/30 should be considered in order to perform a complete search.

- M D06F 39/20 • Arrangements for water recovery

WARNING

Group D06F 39/20 is incomplete pending reclassification of documents from group D06F 39/006.

Groups D06F 39/006 and D06F 39/20 should be considered in order to perform a complete search.

- M D06F 39/30 • Arrangements for energy recovery

WARNING

Group D06F 39/30 is incomplete pending reclassification of documents from group D06F 39/006.

Groups D06F 39/006 and D06F 39/30 should be considered in order to perform a complete search.

Project: Unknown (D07B)

- U D07B 2501/00 Application field
- U D07B 2501/20 • related to ropes or cables
- M D07B 2501/2046 • ~~Tire~~ *Tyre* cords

Project: MP12337 (D21H)

M D21H **PULP COMPOSITIONS; PREPARATION THEREOF NOT COVERED BY SUBCLASSES [D21C](#) OR [D21D](#); IMPREGNATING OR COATING OF PAPER; TREATMENT OF FINISHED PAPER NOT COVERED BY CLASS [B31](#) OR SUBCLASS [D21G](#); PAPER NOT OTHERWISE PROVIDED FOR**

NOTES

1. This subclass covers also pulp compositions for the preparation of fibreboard or other fibrous articles by wet processes.

2. In this subclass, the following terms are used with the meaning indicated:

- "pulp" means a dispersion, {e.g. an aqueous suspension,} comprising paper-making fibres and optional additives, which is to be processed, and covers the term "*paperstock*"; it also means dry paper-making fibres which are to be made into paper by either wet or dry processes;
- "paper" means paper, cardboard or wet-laid non-woven fabrics.

3. If a pulp composition or a paper, or a constituent thereof, is characterised by more than one feature provided for in this subclass, for example, by both the fibrous material and a coating or by both a colorant and a water-repelling agent, classification is made in all places providing for these features.

3-4. In groups [D21H 11/00](#) - [D21H 15/00](#), the last place priority rule is applied, i.e. at each hierarchical level, in the absence of an indication to the contrary, classification is made in the last appropriate place.

WARNINGS

1. The following IPC group is not in the CPC scheme. The subject matter for this IPC group is classified in the following CPC group:

[D21H 27/12](#) covered by [D21H 27/00](#), [H01B 3/52](#)

2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

U D21H 5/00 **{Special paper or cardboard not otherwise provided for (duplicating or recording paper [B41M](#))}**

M D21H 5/0077 • {Transparent papers, e.g. paper treated with transparent-rendering compositions or glassine paper ~~prepares~~*prepared* from well-hydrated ~~stock paper stock~~} (~~paper with watermarks [B41M 3/10](#); watermaking devices [D21F 1/44](#)~~)

Project: Unknown (E01B)

U E01B 2203/00 **Devices for working the railway-superstructure**

U E01B 2203/04 • Cleaning or reconditioning ballast or ground beneath

M E01B 2203/042 • ~~in situ~~, *in situ*, e.g. vacuum-cleaners

Project: RP12462 (E01F)

U E01F 7/00 **Devices affording protection against snow, sand drifts, side-wind effects, snowslides, avalanches or falling rocks (permanently installed heating or blowing devices for roads [E01C 11/26](#)); Anti-dazzle arrangements {; Sight-screens for roads, e.g. to mask accident site ([E01F 8/00](#) takes precedence)}**

U E01F 7/02 • Snow fences or similar devices, e.g. devices affording protection against sand drifts or side-wind effects (fences in general [E04H 17/00](#))

M E01F 7/025 • {Devices specially adapted for protecting against wind, e.g. screens, deflectors or attenuators at tunnel or lock entrances (for protecting plants [A01G 13/00](#)[A01G 13/23](#); *airfield deflectors for jet gases* [B64F 1/26](#); portable windscreens, e.g. for beach use [E04H 15/003](#); ~~noise-absorption~~; *airfield deflectors for jet gases* [B64F 1/26](#))}

Project: Unknown (E01F)

- U E01F 15/00 **Safety arrangements for slowing, redirecting or stopping errant vehicles, e.g. guard posts or bollards; Arrangements for reducing damage to roadside structures due to vehicular impact (arrangements for fastening signs or signals to safety barriers or the like [E01F 9/669](#); for forcibly arresting vehicles [E01F 13/00](#))**
- U E01F 15/02 • Continuous barriers extending along roads or between traffic lanes (crossable-lane separators [E01F 9/588](#))
- U E01F 15/04 • • essentially made of longitudinal beams or rigid strips {supported above ground at spaced points ([E01F 15/10](#), [E01F 15/12](#) take precedence)}
- M E01F 15/0492 • • • {Provisions for guiding in combination with rails, e.g. ~~tire~~**tyre**-gutters}

Project: MP12350 (E04B)

- U E04B 1/00 **Constructions in general; Structures which are not restricted either to walls, e.g. partitions, or floors or ceilings or roofs (scaffolds, shutterings [E04G](#); structures specially adapted for buildings for special purposes, general layout of buildings, e.g. modular co-ordination, [E04H](#))**
- U E04B 1/62 • Insulation or other protection; Elements or use of specified material therefor (chemical compositions [C01](#) - [C11](#); implements for applying insulation or sealings [E04F 21/00](#); buildings to withstand, or to provide protection against, external undesired influences [E04H 9/00](#); sealing pipes in walls or partitions [F16L 5/02](#); shielding against dangerous radiation [G21F](#))
- M E04B 1/66 • • Sealings ({damp-proof courses [E04B 1/644](#); fire-proof sealings [E04B 1/948](#)}; additions of anti-leak properties to plaster [C04B](#); bituminous sealing masses [C08L 95/00](#); sealings for hydraulic engineering work in general [E02B 3/16](#); against ground humidity or ground water [E02D 31/02](#); coverings against rain or other precipitations of the atmosphere [E04D](#); ~~composition of material or manufacture of sealing foils, see the relevant classes for these foils~~)

Project: RP12333 (E04D)

- U E04D 3/00 **Roof covering by making use of flat or curved slabs or stiff sheets ([E04D 1/00](#) takes precedence; built-up roofs [E04D 11/02](#))**
- NOTE
In groups [E04D 3/361](#) - [E04D 3/368](#), additional small fastening elements, e.g. nails, screws, are not to be considered to be separate connecting elements.
{This Note corresponds to IPC Note (1) relating to [E04D 3/361](#) - [E04D 3/368](#).}
- M E04D 3/40 • Slabs or sheets locally modified for auxiliary purposes, e.g. for resting on walls, for serving as guttering; Elements for particular purposes, e.g. ridge elements, specially designed for use in conjunction with slabs or sheets {([E04D 13/15](#) and [E04D 13/174](#) take precedence; ridge sealing [E04D 1/36](#); solar collectors [F24S 20/67](#); ~~photovoltaic devices H01L 31/00~~)}

Project: MP12469 (F01B)

M	F01B	<p>MACHINES OR ENGINES, IN GENERAL OR OF POSITIVE-DISPLACEMENT TYPE, e.g. STEAM ENGINES (of rotary-piston or oscillating-piston type F01C; of non-positive-displacement type F01D; internal-combustion aspects of reciprocating-piston engines F02B 57/00, F02B 59/00; crankshafts, crossheads, connecting-rods F16C; flywheels F16F; gearings for interconverting rotary motion and reciprocating motion in general F16H; pistons, piston rods, cylinders, for engines in general F16J; internal-combustion engines F02B; combustion-product engine plants F02G; machines or engines, other than of positive-displacement type, for liquids F03B; positive-displacement engines driven by liquids F03C; wind motors F03D; positive-displacement machines for liquids F04B; rotary-piston, or oscillating-piston, positive-displacement machines for liquids F04C)</p> <p>NOTES</p> <p>1. This subclass <u>covers</u>, with the exception of the matter provided for in subclasses F01C - F01P :</p> <ul style="list-style-type: none"> • engines for elastic fluids, e.g. steam engines; • engines for liquids and elastic fluids; • machines for elastic fluids; • machines for liquids and elastic fluids. <p>2. Attention is drawn to the note preceding class F01, especially as regards the definitions of "steam" and "special vapour".</p> <p><u>WARNING</u></p> <p>In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.</p>
U	F01B 1/00	Reciprocating-piston machines or engines characterised by number or relative disposition of cylinders or by being built-up from separate cylinder-crankcase elements (F01B 3/00, F01B 5/00 take precedence)
U	F01B 1/06	• with cylinders in star or fan arrangement
U	F01B 1/0641	• • {Details, component parts specially adapted for such machines}
M	F01B 1/0665	• • • {Disconnecting the pistons from the actuating or actuated cam (in general F01B 31/24)}
M	F01B 1/10	• with more than one main shaft, e.g. coupled to common output shaft (combinations of two or more machines or engines F01B 21/00)
U	F01B 3/00	Reciprocating-piston machines or engines with cylinder axes coaxial with, or parallel or inclined to, main shaft axis
M	F01B 3/10	• Control of working-fluid admission or discharge peculiar thereto (suitable for more general application F01L)
U	F01B 3/103	• • {for machines with rotary cylinder block}
M	F01B 3/109	• • • {by changing the inclination of the axis of the cylinder barrel relative to the swash plate (F01B 3/106 takes precedence)}
M	F01B 9/00	Reciprocating-piston machines or engines characterised by connections between pistons and main shafts and, not specific to preceding groups F01B 1/00 - F01B 7/00 (connections disengageable during idling F01B 31/24)
U	F01B 11/00	Reciprocating-piston machines or engines without rotary main shaft, e.g. of free-piston type
M	F01B 11/04	• Engines combined with reciprocatory driven devices, e.g. hammers (with pumps F01B 23/08)
M	F01B 11/08	• with direct fluid transmission link (F01B 11/02 takes precedence)

M	F01B 13/00	Reciprocating-piston machines or engines with rotating cylinders in order to obtain the reciprocating-piston motion (machines or engines of flexible-wall type F01B 19/00)
M	F01B 13/04	• with more than one cylinder- {{F01B 3/0032 takes precedence}}
U	F01B 13/06	• • in star arrangement
U	F01B 13/061	• • • {the connection of the pistons with the actuated or actuating element being at the outer ends of the cylinders}
M	F01B 13/062	• • • • {cylinder block and actuating or actuated cam both rotating- (F01B 13/064 and F01B 13/066 take precedence) }
M	F01B 15/00	Reciprocating-piston machines or engines with movable cylinders other than provided for in group F01B 13/00 (with movable cylinder sleeves for working fluid control F01L)
U	F01B 17/00	Reciprocating-piston machines or engines characterised by use of uniflow principle
U	F01B 17/02	• Engines
M	F01B 17/04	• • Steam engines
		<u>NOTE</u> in this group the following indexing codes are used: {In this group the following indexing codes are used: F01B 2170/0411 - F01B 2170/0494 }
M	F01B 21/00	Combinations of two or more machines or engines (F01B 23/00 takes precedence; combinations of two or more pumps F04; fluid gearing F16H)
M	F01B 23/00	Adaptations of machines or engines for special use; Combinations of engines with devices driven thereby (F01B 11/00 takes precedence; fluid gearing F16H)
M	F01B 25/00	Regulating, controlling, or safety means (regulating or controlling in general G05controlling combustion engines F02D)
		<u>NOTE</u> in this group the following indexing codes are used: {In this group the following indexing codes are used: F01B 2250/001 - F01B 2250/009 }
M	F01B 25/02	• Regulating or controlling by varying working-fluid admission or exhaust, e.g. by varying pressure or quantity- (distributing or expansion valve gear F01L)
U	F01B 25/08	• • Final actuators
M	F01B 25/10	• • • Arrangements or adaptations of working-fluid admission or discharge valves (valves in general F16K)
M	F01B 25/12	• • Devices dealing with sensing elements or final actuators or transmitting means between them, e.g. power-assisted- (sensing elements alone F01B 25/04; final actuators alone F01B 25/08)
U	F01B 27/00	Starting of machines or engines (starting combustion engines F02N)
U	F01B 27/02	• of reciprocating-piston engines
M	F01B 27/08	• • Means for moving crank off dead-centre- (turning gear in general F16H)
U	F01B 29/00	Machines or engines with pertinent characteristics other than those provided for in preceding main groups
U	F01B 29/08	• Reciprocating-piston machines or engines not otherwise provided for
M	F01B 29/10	• • Engines- (refrigeration machines F25B)

- M F01B 31/00** Component parts, details, or accessories not provided for in, or of interest apart from, other groups ~~(machine or engine casings, other than those peculiar to steam engines, F16M)~~
- M F01B 31/005** • {Silencing equipment (~~silencing for steam engines F01B 31/16~~ [F01B 31/16 takes precedence](#))}
- M F01B 31/04** • Means for equalising torque in reciprocating-piston machines or engines ~~(compensation of inertial forces, suppression of vibration in systems F16F)~~
- M F01B 31/08** • Cooling of steam engines ~~(cooling of fluid machines or engines in general F01P)~~; Heating; Heat insulation ~~(heat insulation in general F16L 59/00)~~
- M F01B 31/10** • Lubricating arrangements of steam engines ~~(of fluid machines or engines in general F01M)~~
- M F01B 31/12** • Arrangements of measuring or indicating devices ~~(warning apparatus F01B 25/26; measuring instruments or the like per se G01)~~
- M F01B 31/16** • Silencers specially adapted for steam engines ~~(arrangements of exhaust pipes or tubes on steam engines F01B 31/30; gas-flow silencers or exhaust silencers for machines or engines in general F01N)~~
- U F01B 31/26** • Other component parts, details, or accessories, peculiar to steam engines
- M F01B 31/34** • • Safety means against water ~~hammers~~ [hammer](#) or against the penetration of water ~~(steam traps F16T)~~

Project: MP12266 (F01D)

- U F01D 5/00** Blades; Blade-carrying members (nozzle boxes [F01D 9/02](#)); Heating, heat-insulating, cooling or antivibration means on the blades or the members {(special arrangements in rotors dealing with breaking off of part thereof [F01D 21/045](#))}
- U F01D 5/02** • Blade-carrying members, e.g. rotors (rotors of non-bladed type [F01D 1/34](#); stators [F01D 9/00](#) {; selecting particular materials [F01D 5/28](#)})
- M F01D 5/027** • • {Arrangements for balancing (for balancing rotating bodies in general [F16F 15/32](#); ~~for compensating unbalance G01M 1/36~~; [for compensating imbalance G01M 1/36](#))}

Project: Unknown (F02P)

- M F02P 7/00** Arrangements of distributors, circuit-makers or -breakers, {e.g. of distributor and circuit-breaker combinations} or pick-up devices (advancing or retarding ignition or control therefor [F02P 5/00](#); such devices ~~per se~~; [see per se](#), see the relevant classes of Section H, e.g. rotary switches [H01H 19/00](#), contact-breakers, distributors [H01R 39/00](#), generators [H02K](#))

Project: MP12266 (F03G)

- U F03G 3/00** Other motors, e.g. gravity or inertia motors
- WARNING
Group [F03G 3/00](#) is impacted by reclassification into groups [F03G 3/087](#), [F03G 3/091](#), [F03G 3/094](#), [F03G 3/096](#) and [F03G 3/097](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- U F03G 3/087** • {Gravity or weight motors (using solid falling bodies [F03G 3/02](#); using sand or the like [F03G 3/04](#))}
- WARNING
Groups [F03G 3/087](#), [F03G 3/091](#) and [F03G 3/094](#) are incomplete pending reclassification of documents from group [F03G 3/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

U F03G 3/091

- {using unbalanced wheels}

U F03G 7/00

Mechanical-power-producing mechanisms, not otherwise provided for or using energy sources not otherwise provided for

WARNING

Group [F03G 7/00](#) is impacted by reclassification into groups [F03G 7/003](#), [F03G 7/004](#), [F03G 7/008](#), [F03G 7/009](#), [F03G 7/011](#), [F03G 7/012](#), [F03G 7/0121](#), [F03G 7/015](#), [F03G 7/016](#), [F03G 7/017](#), [F03G 7/025](#), [F03G 7/0252](#), [F03G 7/0254](#), [F03G 7/027](#), [F03G 7/028](#), [F03G 7/029](#) and [F03G 7/092](#).

All groups listed in this Warning should be considered in order to perform a complete search.

U F03G 7/10

- Alleged *perpetua mobilia* (using hydrostatic thrust [F03B 17/04](#))

WARNING

Group [F03G 7/10](#) is impacted by reclassification into groups [F03G 7/104](#), [F03G 7/107](#), [F03G 7/111](#), [F03G 7/115](#), [F03G 7/119](#), [F03G 7/122](#), [F03G 7/125](#), [F03G 7/129](#) and [F03G 7/135](#).

All groups listed in this Warning should be considered in order to perform a complete search.

U F03G 7/104

- {continuously converting gravity into usable power}

WARNING

Groups [F03G 7/104](#), [F03G 7/107](#) and [F03G 7/111](#) are incomplete pending reclassification of documents from group [F03G 7/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

M F03G 7/107

- • {using an ~~unbalance~~*imbalance* for increasing torque or saving energy}

Project: MP12266 (F04D)

U F04D 29/00

Details, component parts, or accessories (machine elements in general [F16](#))

U F04D 29/66

- Combating cavitation, whirls, noise, vibration or the like (gas-flow silencers for machines or engines in general [F01N](#)); Balancing (surge control [F04D 27/02](#))

U F04D 29/661

- {especially adapted for elastic fluid pumps}

M F04D 29/662

- • {Balancing of rotors (~~compensating-unbalance~~*G01M 1/36*~~compensating imbalance~~ *G01M 1/36*)}

Project: Unknown (F15C)

U F15C 1/00

Circuit elements having no moving parts

NOTE

Group [F15C 1/22](#) takes precedence over groups [F15C 1/08](#) - [F15C 1/20](#).

{This Note corresponds to IPC Note (1) relating to [F15C 1/08](#) - [F15C 1/20](#).}

M F15C 1/001

- {for punched-card machines (punched-card machines [G06K](#)); for typewriters (typewriters [B41J](#)); for keyboards; for conveying cards or tape; for conveying through tubes (transport through tubes [B65G 51/00](#), [B65G 53/00](#)); for computers (non-electric computers [G06C](#), [G06D](#), [G06G](#)); for ~~de-ac~~*DC-AC* transducers for information processing (~~de-ac converters~~*H02MDC-AC converters* *H02M*); for signal transmission (telegraphic apparatus [H04L](#))}

- M F15C 1/003
- {for process regulation, (e.g. chemical processes, in boilers or the like); for machine tool control (e.g. sewing machines, automatic washing machines); for liquid level control; for controlling various mechanisms; for alarm circuits; for ~~ac-de~~**AC-DC** transducers for control purposes (~~automatic washing machines D06F 33/00~~; *special provisions on lathes B23B 25/00, B23Q*; electric regulation of mechanical working machines *B23Q 35/00, G05B 19/00*; ~~valve-controlled servomotors F15B 9/08~~; thread feeding devices for sewing machines *D05B 51/00*; ~~special provisions on lathes B23B 25/00, B23Q~~; *automatic washing machines D06F 33/00*; *valve-controlled servomotors F15B 9/08*; non-electric signal transmission *G08C 23/00*)}

Project: MP12266 (F16F)

- U F16F 15/00
- Suppression of vibrations in systems ({damping of non-rotary systems using inertia effect *F16F 7/10*; prevention or isolation of vibrations in machine tools *B23Q 11/0032*; suppression of driveline vibrations in hybrid vehicle transmissions *B60W 30/20*}; vehicle seat suspension devices *B60N 2/50*; {methods or devices for protecting against, or damping of, acoustic waves, e.g. sound *G10K 11/16*}); Means or arrangements for avoiding or reducing out-of-balance forces, e.g. due to motion ({vibration absorbing or balancing means for aircraft propellers *B64C 11/008*, for rotorcraft rotors *B64C 27/001*}; testing static and dynamic balance of machines or structures *G01M 1/00*)}**
- M F16F 15/32
- Correcting- or balancing-weights or equivalent means for balancing rotating bodies, e.g. vehicle wheels ({suppression of vibrations in rotating systems by using freely rotating masses *F16F 15/14*; compensation of inertia forces *F16F 15/22*; ~~compensating unbalance for testing purposes G01M 1/30~~; *compensating imbalance for testing purposes G01M 1/30*)}
- M F16F 15/36
- operating automatically {, i.e. where, for a given amount of ~~unbalance~~*imbalance*, there is movement of masses until balance is achieved (damping vibrations of washing machines by displacing, supplying or ejecting a material, e.g. liquid, into or from counterbalancing pockets *D06F 37/245*)}

Project: MP12108 (F16L)

M F16L

PIPES; JOINTS OR FITTINGS FOR PIPES; SUPPORTS FOR PIPES, CABLES OR PROTECTIVE TUBING; MEANS FOR THERMAL INSULATION IN GENERAL

NOTES

- In this subclass, the following terms are used with the meanings indicated:
 - "pipe" means a conduit of closed cross-section, which is specially adapted to convey fluids, materials or objects;
 - "hose" means a pipe, as defined above, which has flexibility as an essential characteristic.
- Attention is drawn to the following places:

<i>A61M 39/00</i>	Tube connectors, tube couplings or branch units, specially adapted for medical use
<i>B05B 1/20</i>	Perforated pipes
<i>{B60T 17/04}</i>	<i>{Arrangement of piping or air hoses in brake systems}</i>
<i>B63B 35/03</i>	Pipe-laying vessels
<i>B64D 39/04</i>	Adaptation of hose constructions for refuelling aircraft during flight
<i>{B65G 51/00}</i>	<i>{Conveying articles through pipes or tubes by fluid flow or pressure}</i>
<i>{B65G 53/00}</i>	<i>{Conveying materials in bulk through pipes or tubes}</i>
<i>B67D 7/38</i>	Arrangements of hoses in apparatus for transferring liquids, e.g. fuel, from bulk to vehicles or portable containers

E01D 19/10	Fastening of pipes or cables to bridges
E03B	Water supply installations
E03D 11/17	Means for connecting water-closet bowls to the flushing pipe
E03D 11/18	Siphons for water-closets
E03F 3/04	Pipes or fittings specially adapted to sewers
E04D 13/08	Down pipes for roof drainage; Clamping means therefor
E04F 17/00	Vertical ducts, channels in buildings, e.g. chimneys
E21F 1/04	Air ducts for ventilation of mines or tunnels; Connections therefor
E21F 17/02	Suspension devices for tubes or the like in mines or tunnels
F01N	Gas flow silencers or exhaust apparatus for machines or engines
{F16B 7/00}	{Connections of rods or tubes}
F16N 21/00	Conduits, junctions for lubrication systems
F17C 3/02	Thermal insulation of vessels not under pressure for storing liquefied or solidified gases, e.g. Dewar flask
{F17D}	{Pipe-line systems, pipe-lines}
F22B 37/10	Water tubes of steam boilers
F23J 13/04	Joints, connections for chimneys or flues
F24H 9/12	Connecting circulation pipes to heaters
F28F 9/04	Arrangements for sealing elements into header boxes or end plates of heat-exchangers
G21C 15/22	Structural association of coolant tubes with headers or other pipes in nuclear reactors
H02G 3/04	Protective tubing or conduits for electric cables
H02G 3/26	Installations of electric cables or lines, or protective tubing on or in walls, ceilings or floors.

WARNING

1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:

F16L 19/03	covered by	F16L 19/0212
F16L 59/05	covered by	F16L 59/021
F16L 101/14	covered by	F16L 2101/10

2. ~~{In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.}~~

U	F16L 1/00	Laying or reclaiming pipes; Repairing or joining pipes on or under water
U	F16L 1/12	• Laying or reclaiming pipes on or under water
M	F16L 1/20	• • Accessories therefor, e.g. floats; <i>or</i> weights
M	F16L 3/00	Supports for pipes, cables or protective tubing, e.g. hangers, holders, clamps, cleats, clips, brackets (anchors for holding pipes on or under the ground F16L 1/06; {sound-damping supports F16L 55/035; supports for insulated pipes F16L 59/135}; noise absorbers in the form of specially adapted hangers or supports F16L 55/035; arrangements specially adapted for supporting insulated bodies F16L 59/12})
U	F16L 3/01	• for supporting or guiding the pipes, cables or protective tubing, between relatively movable points, e.g. movable channels
M	F16L 3/012	• • {using reels (cores for coiled material, e.g. reels, in general B65H 75/00)} }
U	F16L 3/08	• substantially surrounding the pipe, cable or protective tubing

M	F16L 3/10	<ul style="list-style-type: none"> • divided, i.e. with two {or more} members engaging the pipe, cable or protective tubing
U	F16L 3/1008	<ul style="list-style-type: none"> • • {with two members engaging the pipe, cable or tubing, both being made of thin band material completely surrounding the pipe (F16L 3/1033 takes precedence)}
M	F16L 3/1025	<ul style="list-style-type: none"> • • • {the members being joined by quick-acting means}
U	F16L 3/12	<ul style="list-style-type: none"> • comprising a member substantially surrounding the pipe, cable or protective tubing
M	F16L 3/1211	<ul style="list-style-type: none"> • • • {with a substantially- radial tightening or securing member}
M	F16L 3/24	<ul style="list-style-type: none"> • with a special member for attachment to profiled girders
M	F16L 3/26	<ul style="list-style-type: none"> • specially adapted for supporting the pipes all along their length, e.g. pipe channels or ducts-{channels for electric cables formed by wire H02G 3/0443}
M	F16L 5/00	<p>Devices for use where pipes, cables or protective tubing pass through walls or partitions ({passing insulated pipes through walls F16L 59/121;} arrangements for leading electric cables or lines through walls, floors or ceilings H02G 3/22 <i>installations of electric cables or lines through walls, floors or ceilings H02G 3/22</i>)</p>
M	F16L 7/00	<p>Supporting of pipes or cables inside other pipes or sleeves, e.g. for enabling pipes or cables to be inserted or withdrawn from under roads or railways without interruption of traffic (sleeves for supporting pipes, cables or protective tubing, between relatively movable points F16L 3/01, {fixations devices of optical cables in ducts G02B 6/508, installation of electric cables H02G 1/08})</p>
U	F16L 11/00	Hoses, i.e. flexible pipes
M	F16L 11/02	<ul style="list-style-type: none"> • made of fibres or threads, e.g. of textile {which may or may not be impregnated, or provided with an impermeable layer, e.g. fire-hoses}
U	F16L 11/04	<ul style="list-style-type: none"> • made of rubber or flexible plastics
M	F16L 11/042	<ul style="list-style-type: none"> • • {formed by bending a sheet and connecting the edges {covers for the protection of the insulation F16L 59/10; rigid pipes F16L 9/17}}
M	F16L 11/11	<ul style="list-style-type: none"> • • with corrugated wall-{(F16L 11/24 takes precedence)}
M	F16L 11/20	<ul style="list-style-type: none"> • Double-walled hoses {, i.e. two concentric hoses}
M	F16L 13/00 - F16L 59/00 F16L 49/00	<p>Pipe joints; Hose nipples ({hose connections for pneumatic tyre valves B60C 29/066;} special adaptations of pipe joints for use with watercloset bowls E03D 11/13; {for steam boilers F22B 37/107})</p>
M	F16L 13/00	<p>Non-disconnectible pipe-<i>disconnectable pipe</i> joints, e.g. soldered, adhesive, or caulked joints ({non-disconnectable pipe joints to walls or other pipes, the joined pipe axis being perpendicular to the plane of the wall or to the axis of the other pipe F16L 41/082;} joints for rigid pipes of plastics F16L 47/00; {non-disconnectible pipe-joints to walls or other pipes, the joined pipe axis being perpendicular to the plane of the wall or to the axis of the other pipe F16L 41/082})</p>
U	F16L 13/02	<ul style="list-style-type: none"> • Welded joints
M	F16L 13/0281	<ul style="list-style-type: none"> • • {cold welded {non-electric welding without the application of heat B23K 20/00}}
M	F16L 13/04	<ul style="list-style-type: none"> • • with arrangements for preventing overstressing
M	F16L 13/06	<ul style="list-style-type: none"> • • • with tension-relief of the weld by means of detachable members, e.g. divided tension <i>tensioning</i> rings, bolts in flanges
M	F16L 13/08	<ul style="list-style-type: none"> • Soldered joints-{(specially adapted for connecting metal hoses to rigid members F16L 33/26)}
U	F16L 13/10	<ul style="list-style-type: none"> • Adhesive or cemented joints

M	F16L 13/103	• {Adhesive joints {for hoses F16L 33/34} }
U	F16L 13/14	• made by plastically deforming the material of the pipe, e.g. by flanging, rolling
M	F16L 13/147	• {by radially expanding the inner part (F16L 13/168 and takes E21B 43/103 take precedence)}
U	F16L 13/16	• the pipe joint consisting of overlapping extremities having mutually co-operating collars
M	F16L 13/168	• • {for screw threaded pipes (E21B 43/103 takes precedence) }
M	F16L 15/00	Screw-threaded joints {{(hose connections with parts screwed directly on or into the hose F16L 33/24; joining pipes to wall F16L 41/00)}; Forms of screw-threads for such joints
U	F16L 15/001	• {with conical threads}
M	F16L 15/002	• {with more then <i>than</i> one threaded section}
M	F16L 15/02	• allowing substantial longitudinal adjustment by <i>the</i> use of a long screw-threaded part
M	F16L 15/08	• with supplementary elements (F16L 15/04, {F16L 41/00 and F16L 43/02} take takes precedence)
M	F16L 17/00	Joints with packing adapted to sealing by fluid pressure {{for hoses F16L 33/16; } compensating devices F16L 51/00}
U	F16L 17/06	• with sealing rings arranged between the end surfaces of the pipes or flanges or arranged in recesses in the pipe ends or flanges
M	F16L 17/063	• {forming a whole with the pipe or joint {for screw-threaded joint F16L 15/06} }
M	F16L 19/00	Joints in which sealing surfaces are pressed together by means of a member, e.g. a swivel nut, screwed on, or into, one of the joint parts {{(screw-threaded joints F16L 15/00; } F16L 17/00 takes precedence; if using bolts or equivalent connecting means F16L 23/00; {electrically insulating F16L 25/02; adjustable joints, joints allowing movement F16L 27/00; connecting arrangements or other fittings specially adapted to be made of plastics or to be used with pipes made of plastics F16L 47/00 {; specially adapted for pipes of brittle material F16L 49/06}}
M	F16L 19/005	• {comprising locking means for the threaded member {locking of screws or nuts per se F16B 39/00} }
U	F16L 19/02	• Pipe ends provided with collars or flanges, integral with the pipe or not, pressed together by a screwed member
M	F16L 19/0237	• {specially adapted for use with attachments, e.g. reduction units, T-pieces, bends or the like {branch units per se F16L 41/02; bends per se F16L 43/00; pipe units with cleaning aperture per se F16L 45/00} }
U	F16L 19/04	• using additional rigid rings, sealing directly on at least one pipe end, which is flared either before or during the making of the connection
M	F16L 19/048	• {specially adapted for use with attachments, e.g. reduction units, T-pieces, bends or the like {branch units per se F16L 41/02; bends per se F16L 43/00; pipe units with cleaning aperture per se F16L 45/00} }
U	F16L 19/06	• in which radial clamping is obtained by wedging action on non-deformed pipe ends
M	F16L 19/062	• {specially adapted for use with attachments, e.g. reduction units, T-pieces, bends or the like {branch units per se F16L 41/02; bends per se F16L 43/00; pipe units with cleaning aperture per se F16L 45/00} }

M	F16L 21/00	Joints with sleeve or socket (F16L 13/00, {F16L 15/00},, F16L 17/00, F16L 19/00, {F16L 25/0027, F16L 27/00, F16L 37/00} take precedence {; specially adapted to be made of plastics or to be used with pipes made of plastics F16L 47/06; {joints for pipes made of reinforced concrete F16L 25/0027;} connecting arrangements or other fittings specially adapted to be made of plastics or to be used with pipes made of plastics F16L 47/00; specially adapted for pipes of brittle material F16L 49/02) F16L 49/00)
M	F16L 21/002	• {Sleeves or nipples for pipes of the same diameter; Reduction pieces (F16L 27/00, F16L 37/00 take precedence; with elastic sealing rings F16L 21/022)}
M	F16L 21/005	• • {made of elastic material, e.g. partly or completely surrounded by clamping devices (comprising packing adapted to sealing by fluid pressure F16L 17/04; F16L 11/20; hose clips F16L 33/02)}
M	F16L 21/007	• {clamped by a wedging action (F16L 27/00, F16L 37/092, F16L 37/122, F16L 37/123, F16L 37/15, F16L 37/16 take precedence)}
M	F16L 21/02	• with elastic sealing rings between pipe and sleeve or between pipe and socket, e.g. with rolling or other prefabricated profiled rings (F16L 21/06, F16L 21/08 take precedence {; sealing ring with radial ribs F16L 17/025; sealing ring with axial lips F16L 17/03;} if adjustability is essential F16L 27/00)
M	F16L 21/04	• • in which sealing rings are compressed by axially-movable members {{for joints using a threaded member F16L 19/07; quick-acting couplings F16L 37/00; devices for covering leaks from inside a pipe F16L 55/162}}
M	F16L 21/06	• with a divided sleeve or ring clamping around the pipe- ends (flanged joints F16L 23/00; couplings of the quick-acting type F16L 37/00)
M	F16L 21/08	• with additional locking means ({F16L 17/035, F16L 17/04, F16L 21/04;} F16L 21/06 take takes precedence; {screwed joints F16L 19/08;} couplings of the quick-acting type F16L 37/00)
M	F16L 23/00	Flanged joints (F16L 13/00, F16L 17/00, F16L 19/00 take precedence; adjustable joints F16L 27/00; for hoses F16L 33/00; couplings of the quick-acting type F16L 37/00; for double-walled or multi-channel pipes or, or pipe assemblies F16L 39/00; connecting arrangements or other fittings specially adapted to be made of plastics or to be used with pipes made of plastics F16L 47/00; specially adapted for pipes of brittle material pipe F16L 49/00)
M	F16L 25/00	Constructive types Construction or details of pipe joints not provided for in, or of interest apart from, groups F16L 13/00 - F16L 23/00 (adjustable or allowing movement F16L 27/00; with fluid cut-off means F16L 29/00; quick-acting F16L 37/00; for double-walled or multi-channel pipes F16L 39/00; connecting arrangements or other fittings specially adapted to be made of plastics or to be used with pipes made of plastics F16L 47/00; specially adapted for pipes of brittle material F16L 49/00) {; Details of pipe joints not otherwise provided for, e.g. electrically conducting or insulating means}
M	F16L 25/0072	• {Joints for pipes of dissimilar materials (non-disconnectible joints for pipes of dissimilar materials F16L 13/007; joints between metal and plastic pipes F16L 47/24)}
M	F16L 25/02	• Electrically insulating joints or couplings specially adapted for electrically insulating the two pipe ends of the joint from each other

M	F16L 27/00	Adjustable joints; Adjustable joints; Joints allowing movement (of the quick-acting type F16L 37/50 ; for double-walled or multi-channel <i>pipes or pipe assemblies</i> F16L 39/04 {; {connecting arrangements or other fittings specially adapted to be made of plastics or to be used with pipes made of plastics F16L 47/00; connecting arrangements specially adapted for pipes of brittle material F16L 49/00} ; <i>specially adapted to be made of plastics or to be used with pipes made of plastics F16L 47/18; specially adapted for pipes of brittle material F16L 49/08</i> })
U	F16L 27/02	• Universal joints, i.e. with mechanical connection allowing angular movement or adjustment of the axes of the parts in any direction
M	F16L 27/04	• • with partly-spherical engaging surfaces
U	F16L 27/08	• allowing adjustment or movement only about the axis of one pipe
U	F16L 27/0804	• • {the fluid passing axially from one joint element to another}
U	F16L 27/0808	• • • {the joint elements extending coaxially for some distance from their point of separation}
U	F16L 27/0824	• • • • {with ball or roller bearings}
M	F16L 27/0828	• • • • {having radial bearings {connections of quick-acting couplings maintained by balls or rollers under radial pressure F16L 37/22} }
M	F16L 27/10	• comprising a flexible connection only {, e.g. for damping vibrations}
U	F16L 29/00	Joints with fluid cut-off means (quick-acting joints with cut-off means F16L 37/28)
M	F16L 29/002	• {joints with taps {taps in general F16K 5/00} }
M	F16L 29/005	• {joints with cut-off devices which can be perforated {cut-off devices with a breakable closure member in general F16K 13/04} }
M	F16L 29/007	• {Joints with cut-off devices controlled separately {takes precedence; operating means for cut-off devices in general F16K 31/00} }
M	F16L 33/00	Arrangements for connecting hoses to rigid members; Rigid hose-connectors, i.e. single members engaging both hoses (<i>connecting arrangements or other fittings specially adapted to be made of plastics or to be used with pipes made of plastics F16L 47/00</i>)
M	F16L 33/01	• <i>specially</i> adapted for hoses having a multi-layer wall
M	F16L 33/20	• Undivided rings, sleeves, or like members contracted on the hose or expanded <i>in inside</i> the hose by means of tools; Arrangements using such members
M	F16L 33/26	• specially adapted for hoses <i>made</i> of metal
M	F16L 37/00	Couplings of the quick-acting type (radially-binding sleeves F16L 17/04, F16L 21/06; {devices for use where pipes pass through walls by means of a joint of the quick acting type F16L 5/027;} <i>radially-binding sleeves F16L 17/04, F16L 21/06; connecting hoses to rigid members F16L 33/00; connections made automatically when vehicles are brought together B60D, B61G; specially adapted for lubricating devices F16N 21/00</i>)
U	F16L 37/02	• in which the connection is maintained only by friction of the parts being joined (F16L 37/22 takes precedence)
U	F16L 37/04	• • with an elastic outer part pressing against an inner part by reason of its elasticity (with locking members F16L 37/08)
M	F16L 37/05	• • • tightened by the pressure of a mechanical <i>elementorgan</i>
U	F16L 37/08	• in which the connection between abutting or axially overlapping ends is maintained by locking members (F16L 37/22 - F16L 37/26 take precedence)
U	F16L 37/084	• • combined with automatic locking

M	F16L 37/086	<ul style="list-style-type: none"> • • • by means of latching members pushed radially by spring-like elements <i>{{(radially moved latching members forming a ring F16L 37/0841)}}</i>
M	F16L 37/12	<ul style="list-style-type: none"> • • using hooks, pawls, or other movable or insertable locking members (F16L 37/084 takes precedence)
M	F16L 37/16	<ul style="list-style-type: none"> • • • Joints tightened by the action of a wedge-shaped hinged hooks
M	F16L 37/24	<ul style="list-style-type: none"> • in which the connection is made by inserting one member axially into the other and rotating it to a limited extent, e.g. with bayonet-action
U	F16L 37/244	<ul style="list-style-type: none"> • • the coupling being co-axial with the pipe
M	F16L 37/252	<ul style="list-style-type: none"> • • • the male part having lugs on its periphery penetrating <i>in into</i> the corresponding slots provided in the female part
U	F16L 37/28	<ul style="list-style-type: none"> • with fluid cut-off means
U	F16L 37/30	<ul style="list-style-type: none"> • • with fluid cut-off means in each of two pipe-end fittings
U	F16L 37/32	<ul style="list-style-type: none"> • • • at least one of two lift valves being opened automatically when the coupling is applied
M	F16L 37/34	<ul style="list-style-type: none"> • • • • at least one of the lift valves being of the sleeve type, i.e. a sleeve <i>is being</i> telescoped over an inner cylindrical wall
M	F16L 37/35	<ul style="list-style-type: none"> • • • • at least one of the valves having an axial bore <i>communicating with lateral apertures</i>
M	F16L 37/36	<ul style="list-style-type: none"> • • • • with two lift valves being actuated to initiate the flow through the coupling after the two coupling parts are locked against withdrawal
M	F16L 37/38	<ul style="list-style-type: none"> • • with fluid cut-off means in only one of the two pipe-end fittings
U	F16L 37/50	<ul style="list-style-type: none"> • adjustable; allowing movement of the parts joined
M	F16L 37/505	<ul style="list-style-type: none"> • {allowing substantial longitudinal adjustment or movement (by means of screw-thread F16L 15/02)}
M	F16L 39/00	Joints or fittings for double-walled or multi-channel pipes or pipe assemblies <i>{{(quick-acting joints for double-walled or multi-channel pipes or pipe assemblies F16L 37/56)}}</i>
M	F16L 39/04	<ul style="list-style-type: none"> • allowing adjustment or movement {{(of the multiline swivel type F16L 39/06)}}
U	F16L 41/00	Branching pipes; Joining pipes to walls (F16L 39/00 takes precedence {; characterised by couplings of the quick-acting type F16L 37/008; specially adapted to be made of plastics or to be used with pipes made of plastics F16L 47/26 })
M	F16L 41/001	<ul style="list-style-type: none"> • {the wall being a pipe plate (details or component parts of steam super-heaters F22G 3/00; heat exchangers F28)}
M	F16L 41/008	<ul style="list-style-type: none"> • {for connecting a measuring instrument (connecting means for pressure measuring apparatus G01L 19/0007)}
M	F16L 41/08	<ul style="list-style-type: none"> • Joining pipes to walls or pipes, the joined pipe axis being perpendicular to the plane of the <i>a</i> wall or to the axis of another pipe (F16L 41/02 takes precedence)
M	F16L 41/082	<ul style="list-style-type: none"> • • {Non-disconnectible <i>disconnectable</i> joints, e.g. soldered, adhesive or caulked joints}
U	F16L 43/00	Bends; Siphons (with cleaning apertures F16L 45/00)
U	F16L 43/001	<ul style="list-style-type: none"> • {made of metal}
M	F16L 43/005	<ul style="list-style-type: none"> • • {Return bends (coiled tube furnaces for thermal non-catalytic cracking of hydrocarbon oils C10G 9/20)}
M	F16L 47/00	Connecting arrangements or other fittings specially adapted to be made of plastics or to be used with pipes made of plastics {{(connections for hoses of plastics F16L 33/006)}}

U	F16L 51/00	Expansion-compensation arrangements for pipe-lines (telescopic pipes F16L 27/12)
M	F16L 51/02	• making use of a bellows or an expansible folded or corrugated tube
U	F16L 51/022	• • {with a single corrugation}
M	F16L 51/023	• • {consisting of flexible rings}
M	F16L 51/024	• • {non-metallic (flexible pipe connections F16L 27/10) }
U	F16L 51/025	• • {with several corrugations}
M	F16L 51/026	• • {with interior reinforcement}
M	F16L 51/027	• • {with external reinforcement}
M	F16L 51/028	• • {with the expansion or contraction of each corrugation being limited}
M	F16L 51/029	• • {consisting of flexible rings}
U	F16L 53/00	Heating of pipes or pipe systems; Cooling of pipes or pipe systems
U	F16L 53/30	• Heating of pipes or pipe systems
M	F16L 53/34	• • using electric, magnetic or electromagnetic fields, e.g. using induction, dielectric or microwave heating
M	F16L 55/00	Devices or appurtenances for use in, or in connection with, pipes or pipe systems (the preceding groups and groups F16L 1/00 - F16L 53/00, F16L 57/00, F16L 59/00 take precedence; repairing or joining pipes on or under water F16L 1/26; nozzles B05B; cleaning of pipes B08B 9/02, e.g. removal of blockages B08B 9/027; {arrangements of draining devices for water main or service pipe systems E03B 7/08;} devices for preventing bursting of water pipes by freezing E03B 7/10; {draining devices for hydrants E03B 9/14;} for domestic plumbing installations E03C 1/00; {steam traps for draining of liquids from enclosures containing gases or vapours F16T}; arrangements for sealing leaky tubes or conduits of heat-exchangers F28F 11/00)
M	F16L 55/02	• Energy absorbers; Noise absorbers (in valves F16K 47/00)
M	F16L 55/09	• Air-conditioning, e.g. de-watering, in pneumatic systems
M	F16L 55/10	• Means for stopping flow from or in pipes or hoses (F16L 29/00 , F16L 37/28 take precedence; valves F16K)
M	F16L 55/1026	• • {Fire protection devices (in general A62C) }
U	F16L 55/16	• Devices for covering leaks in pipes or hoses, e.g. hose-menders
M	F16L 55/162	• • from inside the pipe {(F16L 55/1612 takes precedence;) specially adapted for bends, branch units, branching pipes, or the like F16L 55/179}
U	F16L 55/165	• • • a pipe {or flexible liner} being inserted in the damaged section
M	F16L 55/1656	• • • {materials for flexible liners (hoses in general F16L 11/00) }
M	F16L 55/168	• • from outside the pipe (specially adapted for bends, branch units, branching pipes, or the like F16L 55/179)
U	F16L 55/17	• • • by means of rings, bands or sleeves pressed against the outside surface of the pipe or hose
M	F16L 55/1715	• • • {the ring or the sleeve being tightened by hooks, pawls, or other movable members (coupling of the quick-acting type F16L 37/12) }
M	F16L 55/24	• Preventing accumulation of dirt or other matter in the pipes, e.g. by traps, by strainers

M	F16L 55/26	<ul style="list-style-type: none"> • Pigs or moles, i.e. devices movable in a pipe or conduit with or without self-contained propulsion means <p>NOTES</p> <p>1. Pigs or moles specially adapted for particular applications are classified in the relevant places for the applications, e.g.</p> <ul style="list-style-type: none"> • stopping flow from or in pipes or hoses F16L 55/12; • repairing pipes F16L 55/18; • applying liquids or other fluent materials to the inside of tubes B05C 7/08; • cleaning pipes or tubes or systems of pipes or tubes B08B 9/02; • welding or cutting B23K 37/02; • earth drilling E21B; • {separating products F17D 3/08}; • cleaning chimneys F23J 3/02; • cleaning internal or external surfaces of heat-exchange or heat-transfer conduits F28G; • measuring, testing G01; • <i>{investigating fluid-tightness of structures G01M 3/005, G01M 3/246, G01M 3/2823};</i> • inspection of vessels in nuclear reactors G21C 17/003; • inspection or maintenance of pipe-lines or tubes in nuclear installations G21C 17/017-installing electric, or combined optical and electric, cables or lines H02G; • <i>installing electric, or combined optical and electric, cables or lines H02G.</i> <p>2. In this group, it is desirable to add the indexing codes of group {F16L 2101/00}.</p>
M	F16L 57/00	Protection of pipes or objects of similar shape against external or internal damage or wear ({protection under water F16L 1/123 }; supporting of pipes inside other pipes or sleeves F16L 7/00 ; used in connection with end fittings of hoses F16L 35/00 ; <i>protection of pipes or pipe fittings against corrosion or incrustation F16L 58/00</i> ; protection thereof during transport B65D 59/00)
U	F16L 58/00	Protection of pipes or pipe fittings against corrosion or incrustation (compound tubes F16L 9/14)
U	F16L 58/18	<ul style="list-style-type: none"> • specially adapted for pipe fittings
M	F16L 58/181	<ul style="list-style-type: none"> • {for non-disconnectible pipe joints <i>disconnectable pipe joints</i>}(in general F16L 13/00)}
M	F16L 58/182	<ul style="list-style-type: none"> • {for screw-threaded joints (in general F16L 15/00)}}
M	F16L 58/184	<ul style="list-style-type: none"> • {for joints in which sealing surfaces are pressed together by means of a member, e.g. a swivel nut, screwed on or into one of the joint parts (in general F16L 19/00)}}
M	F16L 58/185	<ul style="list-style-type: none"> • {for joints with sleeve or socket (in general F16L 21/00)}}
M	F16L 58/187	<ul style="list-style-type: none"> • {for flanged joints (in general F16L 23/00)}}
M	F16L 58/188	<ul style="list-style-type: none"> • {for branching pipes; for joining pipes to walls (in general F16L 41/00)}}
U	F16L 59/00	Thermal insulation in general
U	F16L 59/02	<ul style="list-style-type: none"> • Shape or form of insulating materials, with or without coverings integral with the insulating materials
M	F16L 59/021	<ul style="list-style-type: none"> • {comprising a single piece or sleeve, e.g. split sleeve, two half sleeves <i>sleeves</i>; <i>consisting of two half sleeves</i>; <i>comprising more than two segments</i>}
M	F16L 59/024	<ul style="list-style-type: none"> • • {composed <i>consisting</i> of two half sleeves}
M	F16L 59/025	<ul style="list-style-type: none"> • • {with more than <i>comprising more than</i> two segments}

M	F16L 59/028	• • { Composition or method <i>Compositions for or methods</i> of fixing a thermally insulating material}
M	F16L 59/04	• Arrangements using dry fillers, e.g. using slag wool {which is added to the object to be insulated by pouring, spreading, spraying or the like}
M	F16L 59/10	• Bandages or covers for the protection of the insulation, e.g. against the influence of the environment or against mechanical damage (integral with the insulation materials F16L 59/02) <i>integral with insulating materials F16L 59/02</i>
U	F16L 59/14	• Arrangements for the insulation of pipes or pipe systems (F16L 59/02 - F16L 59/12 take precedence)
M	F16L 59/141	• • {in which the temperature of the medium is below that of the ambient temperature (rigid pipes of wood F16L 9/006; vacuum insulation F16L 59/065) }
M	F16L 59/145	• • {providing fire-resistance (in general F16L 57/04) }
U	F16L 59/16	• • Arrangements specially adapted to local requirements at flanges, junctions, valves or the like
M	F16L 59/163	• • • {Branch units (in general F16L 41/02) ; Insulation forming a whole with branches}
U	F16L 59/18	• • • adapted for joints
M	F16L 59/181	• • • • {Joints in which sealing surfaces are pressed together by means of a member, e.g. a swivel nut, screwed on or into one of the joint parts (in general F16L 19/00) }
M	F16L 59/182	• • • • {Joints with sleeve or socket (in general F16L 21/00) }
M	F16L 59/184	• • • • {Flanged joints (in general F16L 23/00) }
M	F16L 59/185	• • • • {Adjustable joints; joints allowing movement (in general F16L 27/00) ; <i>Joints allowing movement</i> }
M	F16L 59/187	• • • • {Arrangements for connecting hoses to one another, to flexible sleeves or to rigid members (in general F16L 31/00, F16L 33/00) }
M	F16L 59/188	• • • • {Couplings of the quick-acting type (in general F16L 37/00) }
N	F16L 2101/00 - F16L 2101/00	<u>Indexing scheme associated with groups F16L 55/26 - F16L 55/48, relating to uses and applications of pigs or moles</u>
N	F16L 2201/00 - F16L 2201/00	<u>Indexing scheme associated with main groups F16L 1/00 - F16L 59/00, relating to special arrangements for pipe couplings</u>

Project: MP12337 (F16N)

M	F16N 7/00	Arrangements for supplying oil or unspecified lubricant from a stationary reservoir or the equivalent in or on the machine or member to be lubricated (axle-box lubrication for railway rolling-stock B61F 17/00)
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Project: RP12457 (F21K)

F21K 9/00 **Light sources using semiconductor devices as light-generating elements, e.g. using light-emitting diodes [LED] or lasers**

NOTES

- In this group, the following expressions are used with the meaning indicated:
 - "light source" means a light-generating component intended for installation in a fitting or holder incorporated in a lighting device;
 - "retrofit light source" means a light source comprising substantially the same attachment means as those of incandescent lamps or fluorescent lamps.

"Retrofit light sources" are specially adapted for replacing or substituting such lamps.

2. Semiconductor devices per se, or assemblies thereof, specially adapted for light emission, e.g. for use in light sources (in the sense of Note (1)) are covered by subclasses ~~H01L (e.g. H01L 33/00)~~, ~~H01S~~ (e.g. ~~H01S 5/00~~) ~~-or class, H10H H10 (e.g. H10H 20/00 and subclass H10H 29/20, and H10K~~ (e.g. ~~H10K 50/00 and H10K 59/00~~)
3. Lighting devices or systems in which light sources are used are covered by subclasses ~~F21L~~ or ~~F21S~~.
4. When classifying in this group, classification is also made in subclass ~~F21V~~ if detail aspects covered by that subclass are of interest.

Project: RP12333 (F21S)

- M F21S 11/00** Non-electric lighting devices or systems using daylight {(~~hybrid lighting devices combining artificial and natural light F21S 19/00~~; roofs with sky-light opening ~~E04D 13/03~~; sun blinds for windows with means for redirecting light onto ceiling of a room ~~E06B 9/00~~; ~~hybrid lighting devices combining artificial and natural light F21S 19/00~~; solar heat collectors ~~F24S~~; ~~solar cells or solar cell modules H01L 31/00~~)}

Project: RP12457 (F21V)

- U F21V 29/00** Protecting lighting devices from thermal damage; Cooling or heating arrangements specially adapted for lighting devices or systems (lighting fixtures combined with outlets for air-treatment systems ~~F24F 13/078~~)
- U F21V 29/50** • Cooling arrangements (air-treatment systems dissipating or using the heat of lighting fixtures ~~F24F 3/056~~)
- U F21V 29/502** • • characterised by the adaptation for cooling of specific components
- M F21V 29/503** • • • of light sources (cooling arrangements structurally associated with gas-discharge or vapour-discharge lamps ~~H01J 61/52~~; cooling arrangements structurally associated with electric incandescent lamps ~~H01K 1/58~~; ~~cooling arrangements structurally associated with light-emitting diodes H01L 33/64~~; ~~cooling arrangements structurally associated with light-emitting diodes H10H 20/858~~)

Project: RP12345 (F22B)

- M F22B** METHODS OF STEAM GENERATION; STEAM BOILERS (~~steam engine plants where engine aspects predominate F01K~~; ~~domestic central-heating systems using steam F24D~~; ~~heat exchange or heat transfer in general F28~~; ~~generation of vapour in the cores of nuclear reactors G21~~)

NOTE

This subclass covers only methods of, or apparatus for, the generation of steam under pressure for heating or power purposes

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

- M F22B 1/00** Methods of steam generation characterised by form of heating method (~~solar heating F24S~~; ~~jackets or other cooling means in which steam is generated and which serve for cooling other apparatus, see the subclasses for such apparatus~~)
- M F22B 1/003** • {using combustion of hydrogen with oxygen (~~power plants using steam created by combustion of hydrogen with oxygen F01K 25/005~~)}

M	F22B 1/006	• {using solar heat (solar heat collectors per se F24S; devices for producing mechanical power from solar energy F03G-6/00) }
U	F22B 1/02	• by exploitation of the heat content of hot heat carriers
M	F22B 1/021	• • {with heating tubes in which flows a non-specified heating fluid (for nuclear reactors F22B 1/023 , for hot gas F22B-1/1884)}
M	F22B 1/023	• • {with heating tubes, for nuclear reactors as far, as long as they are not classified, according to a specified heating fluid, in another group }
M	F22B 1/026	• • • {with vertical tubes between to two horizontal tube sheets}
U	F22B 1/06	• • the heat carrier being molten; Use of molten metal, e.g. zinc, as heat transfer medium
M	F22B 1/063	• • • {for metal cooled nuclear reactors (heat-exchangers having a liquid metal as heat exchange medium F28D7/00C) }
M	F22B 1/066	• • • • {with double-wall tubes having a third fluid between these walls, e.g. helium for leak detection (heat-exchangers with double-wall tubes F28D-7/10; double-wall pipes per se F16L-9/18) }
U	F22B 1/16	• • the heat carrier being hot liquid or hot vapour, e.g. waste liquid, waste vapour
M	F22B 1/165	• • • {using heat pipes (heat pipes per se F28D-15/02) }
M	F22B 1/18	• • the heat carrier being a hot gas, e.g. waste gas such as exhaust gas of internal-combustion engines (use of waste heat of combustion engines, in general, F02G)
U	F22B 1/1869	• • • {Hot gas water tube boilers not provided for in F22B 1/1807 - F22B 1/1861 }
M	F22B 1/1876	• • • • {the hot gas being loaded with particles, e.g. dust (with the hot gas being under high pressure F22B-1/1846) }
U	F22B 1/22	• using combustion under pressure substantially exceeding atmospheric pressure
M	F22B 1/24	• • Pressure-fired steam boilers, e.g. using turbo- air compressors actuated by hot gases from boiler furnace
M	F22B 1/26	• • Steam boilers of submerged-flame type, i.e. the flame being surrounded by, or impinging on, the water to be vaporised {, e.g. water in sprays}
M	F22B 1/28	• in boilers heated electrically {(superheating using an electrical heat source independent from heat supply of the steam boiler F22G-1/165)}
U	F22B 3/00	Other methods of steam generation; Steam boilers not provided for in other groups of this subclass
M	F22B 3/04	• by drop in pressure of high-pressure hot water within pressure-reducing chambers, e.g. in accumulators (steam accumulators per se F01K-1/00)
U	F22B 5/00	Steam boilers of drum type, i.e. without internal furnace or fire tubes, the boiler body being contacted externally by flue gas
M	F22B 5/04	• Component parts thereof; Accessories therefor (covers or similar closure members F16J-13/00)
U	F22B 7/00	Steam boilers of furnace-tube type, i.e. the combustion of fuel being performed inside one or more furnace tubes built-in in the boiler body
U	F22B 7/16	• Component parts thereof; Accessories therefor, e.g. stay-bolt connections
M	F22B 7/18	• • Walling of flues; Flue- gas header boxes
U	F22B 9/00	Steam boilers of fire-tube type, i.e. the flue gas from a combustion chamber outside the boiler body flowing through tubes built-in in the boiler body
U	F22B 9/10	• the boiler body being disposed substantially horizontally, e.g. at the side of the combustion chamber
M	F22B 9/12	• • the fire tubes being in substantially- horizontal arrangement

M	F22B 13/00	Steam boilers of fire-box type, i.e. the combustion of fuel being performed in a chamber or fire-box with subsequent flue(s) or fire tube(s), both chamber or fire-box and boilers where both combustion chambers and subsequent flues or fire tubes being built-in in are arranged within the boiler body
U	F22B 13/06	• Locomobile, traction-engine, steam-roller, or locomotive boilers
M	F22B 13/065	• • {Combination of low- and high-pressure locomotive boilers}
U	F22B 15/00	Water-tube boilers of horizontal type, i.e. the water-tube sets being arranged horizontally
M	F22B 17/00	Water-tube boilers of horizontally-inclined type, e.g.i.e. the water-tube sets being inclined slightly with respect to the horizontal plane
U	F22B 17/10	• built-up from water-tube sets in abutting connection with two sectional headers each for every set, i.e. with headers in a number of sections across the width or height of the boiler
M	F22B 17/12	• • the sectional headers being in vertical or substantially-vertical arrangement
M	F22B 17/14	• • the sectional headers being in horizontal or substantially-horizontal arrangement
M	F22B 19/00	Water-tube boilers of combined horizontally-inclined type and vertical type, i.e. water-tube boilers of horizontally-inclined type having auxiliary water-tube sets in vertical or substantially-vertical arrangement
U	F22B 21/00	Water-tube boilers of vertical or steeply-inclined type, i.e. the water-tube sets being arranged vertically or substantially vertically
M	F22B 21/02	• built-up from substantially-straight water tubes
M	F22B 21/12	• • involving two or more upper drums and two or more lower drums, e.g. with crosswise-arranged water-tube sets in abutting connections connection with drums
U	F22B 23/00	Water-tube boilers built-up from sets of spaced double-walled water tubes of return type in unilateral abutting connection with a boiler drum or with a header box, i.e. built-up from Field water tubes comprising an inner tube arranged within an outer unilaterally-closed tube
M	F22B 23/06	• Component parts thereof, e.g. Field water tubes (heat-exchange tubes in general F28F)
U	F22B 29/00	Steam boilers of forced-flow type
M	F22B 29/02	• of forced-circulation type {{F22B 29/06 takes precedence}}
M	F22B 29/06	• of once-through type, i.e. built-up from tubes receiving water at one end and delivering superheated steam at the other end of the tubes (F22B 33/00 takes precedence combined low- and high-pressure boilers of forced-flow type F22B 33/16)
M	F22B 29/067	• • {operating at critical or supercritical pressure (with recirculation during normal operation F22B 29/026)}
M	F22B 29/08	• • operating with fixed point of final state of complete evaporation {{evaporation or evaporation apparatus for physical or chemical purposes, e.g. evaporation of liquids for gas phase reactions B01B 1/005}}
M	F22B 29/10	• • operating with sliding point of final state of complete evaporation {{evaporation or evaporation apparatus for physical or chemical purposes, e.g. evaporation of liquids for gas phase reactions B01B 1/005}}

M	F22B 31/00	Modifications of boiler construction, or of tube systems, dependent on installation of combustion apparatus; Arrangements of dispositions of combustion apparatus (steam generation characterised by heating method F22B 1/00; combustion apparatus per se F23)
T	F22B 31/0007	• {with combustion in a fluidized bed (fluidized bed apparatus per se B01J 8/00; fluidized bed combustors F23C 10/00) }
D	F22B 31/0076	• • {Controlling processes for fluidized bed boilers not related to a particular type} <administratively transferred to F22B 31/0007 and F22B 35/00 >
M	F22B 33/00	Steam-generation plants, e.g. comprising steam boilers of different types in mutual association (arrangements or dispositions of steam-generation plants in marine vessels B63H 21/00)
U	F22B 33/02	• Combinations of boilers having a single combustion apparatus in common
M	F22B 33/08	• • of boilers of water-tube type with boilers of fire-tube type
M	F22B 33/14	• Combinations of low- and high-pressure boilers <i>{(F22B 13/065 takes precedence combination of low- and high-pressure locomotive boilers of fire-box type F22B 13/065)}</i>
T	F22B 35/00	Control systems for steam boilers (for fluidized bed boilers F22B 31/0076; regulation or control of steam power plants F01K 7/00; for regulating feed-water supply F22D F22D 5/00; for controlling superheat temperature F22G 5/00; control of combustion F23N; regulating or controlling in general G05)
M	F22B 35/001	• {Controlling by flue-gas dampers (for superheaters F22G 5/04)}
M	F22B 35/008	• {Control systems for two or more steam generators <i>(F22D 5/36 takes precedence automatic water-feed control for a number of steam boilers designed for different ranges of temperature and pressure F22D 5/36)</i> }
M	F22B 35/18	• Applications of computers to steam-boiler control
M	F22B 37/00	Component parts or details of steam boilers (venting devices F16K 24/00; steam traps or like apparatus F16T)
U	F22B 37/002	• {specially adapted for nuclear steam generators, e.g. maintenance, repairing or inspecting equipment not otherwise provided for}
M	F22B 37/006	• • {Walking equipment, e.g. walking platforms suspended at the tube sheet (walking mechanism per se B62D 57/02) }
M	F22B 37/008	• {Adaptations for flue-gas purification in steam generators, (flue-gas purification in general F23J; gas purification in general B01D) }
U	F22B 37/02	• applicable to more than one kind or type of steam boiler
U	F22B 37/06	• • Flue or fire tubes; Accessories therefor, e.g. fire-tube inserts
M	F22B 37/10	• • Water tubes; Accessories therefor (working of metal tubes B21D; pipes in general F16L; repairing leaks in water tubes F16L 55/16; F28F 11/00; baffles, screens, or deflectors formed of water tubes F23M 9/10; cleaning internal or external surfaces of water tubes F28G)
M	F22B 37/104	• • • {Connection of tubes one with the other or with collectors, drums or distributors (in general F16L) }
M	F22B 37/105	• • • {Penetrations of tubes through a wall and their sealing (in general F16L 5/00) }
M	F22B 37/107	• • • {Protection of water tubes (in general F16L 57/00) }
U	F22B 37/16	• • • Return bends
M	F22B 37/165	• • • • {Closures for access openings in return bends (boiler plugs for drums or headers F22B 37/223) }

- M F22B 37/20
 - • • Supporting arrangements, e.g. for securing water-tube sets ~~(construction of tube walls of furnaces including boiler furnaces F23M 5/08)~~
- M F22B 37/22
 - • Drums; Headers; Accessories therefor ~~(making boilers from sheet metal B21D 51/24; pressure vessels in general F16J 12/00; covers or similar closure members F16J 13/00)~~
- M F22B 37/221
 - • • {Covers for drums, collectors, manholes or the like ~~(in general F16J 13/00)~~}
- M F22B 37/223
 - • • • {Boiler plugs, e.g. for handholes ~~(closures for access openings in return bends F22B 37/165)~~}
- M F22B 37/24
 - • Supporting, suspending; or setting arrangements, e.g. heat shielding ~~(frames; engine beds F16M)~~
- M F22B 37/26
 - • Steam-separating arrangements ~~(vapour-liquid separators, e.g. for drying steam, B01D; B04)~~
- M F22B 37/34
 - • Adaptations of boilers for promoting water circulation (~~{F22B 13/145 takes precedence }~~; auxiliary devices for promoting water circulation [F22D 7/00](#))
- M F22B 37/38
 - • Determining or indicating operating conditions in steam boilers, e.g. monitoring direction or rate of water flow through water tubes ~~(measuring or indicating instruments in general G01)~~
- M F22B 37/40
 - • Arrangements of partition walls in flues of steam boilers, e.g. built-up from baffles ~~(in flues or chimneys F23J 13/00)~~
- M F22B 37/42
 - • Applications, arrangements; or dispositions of alarm or automatic safety devices (for feed-water heaters [F22D 1/14](#) {; emergency feed-water supply [F22D 11/003](#)}; ~~alarms responsive to undesired or abnormal conditions G08B~~)
- M F22B 37/44
 - • • of safety valves ~~(safety valves per se F16K)~~
- M F22B 37/46
 - • • responsive to low or high water level, e.g. for checking, suppressing; ~~or~~ extinguishing combustion in boilers ~~(fire-fighting, fire-extinction in general A62)~~
- M F22B 37/47
 - • • responsive to abnormal temperature, e.g. actuated by fusible plugs ~~(such alarms or devices per se G08B)~~
- M F22B 37/48
 - • Devices ~~or arrangements~~ for removing water, ~~salt~~, ~~minerals~~ or sludge from boilers ~~(cleaning internal or external surfaces of water tubes F28G cleaning water tubes, furnace tubes or the like of boilers F28G) {; Arrangements Arrangement of cleaning apparatus in boilers (cleaning external surfaces of tubes by soot-blowers F23J); Combinations thereof with boilers}~~
- M F22B 37/486
 - • • {Devices for removing water, ~~salt~~, ~~minerals~~ or sludge from boilers ([F22B 37/483](#), [F22B 37/50](#), [F22B 37/52](#) and [F22B 37/54](#) take precedence)}
- U F22B 37/54
 - • • De-sludging or blow-down devices {([F22B 37/565](#) takes precedence)}
- M F22B 37/545
 - • • • {Valves specially adapted therefor ~~(valves in general F16K)~~}
- U F22B 37/62
 - specially adapted for steam boilers of forced-flow type
- M F22B 37/64
 - • Mounting of, or supporting arrangements for, tube units ~~(construction of tube walls of furnaces, e.g. boiler furnaces F23M 5/08)~~
- M F22B 37/66
 - • • involving vertically-disposed water tubes {([F22B 37/645](#) takes precedence)}
- M F22B 37/68
 - • • involving horizontally-disposed water tubes {([F22B 37/645](#) takes precedence)}
- M F22B 37/76
 - Adaptations or mounting of devices for observing existence or direction of fluid flow ~~(devices per se G01P)~~
- M F22B 37/78
 - Adaptations or mounting of level indicators ~~(level indicators per se G01F)~~

Project: MP12348 (F22D)

M	F22D	PREHEATING, OR ACCUMULATING PREHEATED, FEED-WATER FOR STEAM GENERATION; FEED-WATER SUPPLY FOR STEAM GENERATION; CONTROLLING WATER LEVEL FOR STEAM GENERATION; AUXILIARY DEVICES FOR PROMOTING WATER CIRCULATION WITHIN STEAM BOILERS
		<u>WARNING</u> In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme:
U	F22D 1/00	Feed-water heaters, i.e. economisers or like preheaters
M	F22D 1/02	• with water tubes arranged in the boiler furnace, fire tubes, or flue ways (heat-exchange tubes in general F28F)
U	F22D 1/08	• • the tubes having fins, ribs, gills, corrugations, or the like on their outer surfaces, e.g. in vertical arrangement
M	F22D 1/10	• • in horizontal arrangement (hollow fire-bars, grates, or the like used as water tubes F23H 3/02)
M	F22D 1/14	• • Safety or venting devices (safety devices for boilers in general F22B 37/42)
U	F22D 1/28	• for direct heat transfer, e.g. by mixing water and steam
M	F22D 1/30	• • with stages, steps, baffles, dishes, circular troughs, or other means to cause interrupted or cascading fall of water (de-aeration apparatus G02F)
M	F22D 1/40	• Combinations of exhaust-steam and smoke-gas preheaters (for locomotives F22D 1/42)
M	F22D 1/50	• incorporating thermal de-aeration of feed-water (de-aeration produced in the course of direct heat transfer F22D 1/28 ; thermal de-aeration of water per se B01D 19/00 , G02F 1/20 ; valves for venting F16K 24/04)
U	F22D 3/00	Accumulators for preheated water
M	F22D 3/08	• specially adapted for locomotives (locomotives boilers F22B 13/06)
M	F22D 3/10	• • Control devices (controlling water feed to boilers, or water level F22D 5/00)
M	F22D 5/00	Controlling water feed or water level; Automatic water feeding or water-level regulators (steam traps F16T; measuring or indicating instruments G01; for indicating water level G01F; level control in general G05D 9/00)
M	F22D 5/26	• Automatic feed-control systems (automatic safety devices F22B 37/42; controlling in general G05)
M	F22D 5/34	• • Applications of valves (valves per se F16K)
M	F22D 7/00	Auxiliary devices for promoting water circulation (adaptation of boilers for promoting water circulation F22B 37/34)
U	F22D 11/00	Feed-water supply not provided for in other main groups
M	F22D 11/003	• {Emergency feed-water supply (safety devices for boilers in general F22B 37/42) }
M	F22D 11/02	• Arrangements of feed-water pumps (F22D 11/06 takes precedence; pumps per se F04)

Project: MP12349 (F22G)

- M F22G** **SUPERHEATING OF STEAM** (~~steam separating arrangements in boilers F22B 37/26~~)
- WARNING
In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.
- M F22G 1/00** **Steam superheating characterised by heating method** (~~exothermal chemical reactions not involving a supply of free oxygen gas, apparatus or devices for using the heat therefrom F24V 30/00~~)
- U F22G 1/16**
 - by using a separate heat source independent from heat supply of the steam boiler, e.g. by electricity, by auxiliary combustion of fuel oil
- M F22G 1/165**
 - {by electricity-~~(steam generation in boilers heated electrically, in general, F22B 1/28)~~}
- M F22G 3/00** **Steam superheaters characterised by constructional features; Details of or component parts thereof** (~~general aspects of enclosed heat-exchangers F28D~~)
- M F22G 3/001**
 - {Steam tube arrangements not dependent of location-~~(characterised by location F22G 7/00)~~}
- M F22G 5/00** **Controlling superheat temperature** (~~control systems for steam boilers F22B; regulating or controlling in general G05~~)
- M F22G 5/12**
 - by attemperating the superheated steam, e.g. by injected water sprays-~~(spray mixers B01F 25/70)~~

Project: RP12464 (F23J)

- M F23J 11/00** **Devices for conducting smoke or fumes, e.g. flues (chimney stacks E04H 12/28; removing cooking fumes from domestic stoves or ranges F24C 15/20 {; fume conduits of furnaces, kilns, ovens, or retorts F27D 17/002 F27D 17/302})**

Project: MP12343 (F27B)

- M F27B** **FURNACES, KILNS, OVENS, OR RETORTS IN GENERAL; OPEN SINTERING OR LIKE APPARATUS**
- NOTE
Attention is drawn to the Notes following the title of class F27.
- WARNING
1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:
- | | | |
|-------------------------|------------|-----------------------|
| F27B 1/09 | covered by | F27B 1/08 |
| F27B 5/05 | covered by | F27B 5/04 |
| F27B 14/16, F27B 14/18 | covered by | F27B 14/0806 |
| F27B 21/08 - F27B 21/14 | covered by | F27D 3/00, F27D 21/00 |
2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.
- M F27B 1/00** **Shaft or like vertical or substantially vertical furnaces** (~~for preheating, burning, calcining or cooling lime, magnesia or dolomite C04B 2/12~~)
- M F27B 1/10**
 - Details, accessories, ~~or equipment peculiar to~~ *or equipment specially adapted for* furnaces of these types
- U F27B 1/12**
 - Shells or casings; Supports therefor

M	F27B 1/14	• • • Arrangements of linings (linings in general F27D 1/00)
M	F27B 1/22	• • Arrangements of heat-exchange apparatus (heat-exchangers in general F28C, F28D)
M	F27B 3/00	Hearth-type furnaces, e.g. of reverberatory type (F27B 9/00 , F27B 11/00 , F27B 13/00 , F27B 14/00 , F27B 15/00 , F27B 21/00 take precedence); <i>Electric arc furnaces</i> {; Tank furnaces}
M	F27B 3/10	• Details, accessories; or equipment peculiar to <i>or equipment, e.g. dust-collectors, specially adapted for</i> hearth-type furnaces
M	F27B 5/00	Muffle furnaces; Retort furnaces; Other furnaces in which the charge is held completely isolated (F27B 9/00 takes precedence <i>furnaces through which the charge is moved mechanically or in which the charge moves by gravity F27B 9/00</i>)
M	F27B 5/06	• Details, accessories; or equipment peculiar to <i>or equipment specially adapted for</i> furnaces of these types
U	F27B 7/00	Rotary-drum furnaces, i.e. horizontal or slightly inclined
M	F27B 7/20	• Details, accessories; or equipment peculiar to <i>or equipment specially adapted for</i> rotary-drum furnaces
M	F27B 9/00	Furnaces through which the charge is moved mechanically, e.g. of tunnel type (F27B 7/14 takes precedence <i>rotary-drum furnaces with means for agitating or moving the charge F27B 7/14</i>); Similar furnaces in which the charge moves by gravity
M	F27B 9/14	• characterised by the path of the charge during treatment; characterised by the means by which the charge is moved during treatment (F27B 9/28 takes precedence; travelling or movable supports or containers for the charge F27D 3/42 <i>for treating continuous lengths of work F27B 9/28</i>)
M	F27B 9/20	• • the charge moving in a substantially straight path (tunnel furnace)
M	F27B 9/24	• • • being carried by a conveyor (transport by conveyors in general B65G)
M	F27B 9/30	• Details, accessories; or equipment peculiar to <i>or equipment specially adapted for</i> furnaces of these types
M	F27B 11/00	Bell-type furnaces (for treating metal strips or wire C21D 9/663)
M	F27B 13/00	Furnaces with both stationary charge and progression of heating, e.g. of ring type; of <i>or of the</i> type in which <i>a</i> segmental kiln moves over <i>a</i> stationary charge
M	F27B 13/06	• Details, accessories; or equipment peculiar to <i>or equipment specially adapted for</i> furnaces of this type
U	F27B 14/00	Crucible or pot furnaces
M	F27B 14/08	• Details peculiar to <i>specially adapted for</i> crucible or pot furnaces
M	F27B 15/00	Fluidised-bed furnaces; Other furnaces using or treating finely-divided materials in dispersion (apparatus in general for carrying out chemical or physical processes in a fluidised bed reactor B01J 8/24 - B01J 8/44)
M	F27B 15/02	• Details, accessories; or equipment peculiar to <i>or equipment specially adapted for</i> furnaces of these types
M	F27B 17/00	Furnaces of a kind not covered by any preceding group of groups F27B 1/00 - F27B 15/00 (structural combinations of furnaces F27B 19/02)
U	F27B 17/0016	• {Chamber type furnaces}
M	F27B 17/0025	• • { Especially <i>specially</i> adapted for treating semiconductor wafers}

- M F27B 19/00** Combinations of ~~furnaces of kinds not covered by a single preceding main group~~ *different kinds of furnaces that are not all covered by any single one of main groups F27B 1/00 - F27B 17/00*

Project: MP12331 (F27D)

- M F27D** DETAILS OR ACCESSORIES OF FURNACES, KILNS, OVENS, OR RETORTS, IN SO FAR AS THEY ARE OF KINDS OCCURRING IN MORE THAN ONE KIND OF FURNACE ~~(combustion apparatus F23)~~

NOTE

Attention is drawn to the Notes following the title of class [F27](#).

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme:

- M F27D 1/00** Casings; Linings; Walls; Roofs ~~(refractory materials C04B; firebridges for combustion chambers F23M 3/00)~~
- U F27D 1/0003** • {Linings or walls}
- NOTE
not used, see subgroups
- M F27D 1/0033** • • {Linings or walls comprising heat shields, e.g. heat ~~shields~~ *shields*} ~~(shields protecting the charge F27D 5/00)~~
- M F27D 1/12** • incorporating cooling arrangements ~~(constructions of tube assemblies in general F28)~~
- M F27D 1/14** • Supports for linings ~~(F27D 1/10 takes precedence)~~ *supports for monolithic linings F27D 1/10*
- M F27D 1/16** • Making or repairing linings ~~{increasing the durability of linings or breaking away linings}~~; *Increasing the durability of linings; Breaking away linings*
- M F27D 1/18** • Door frames; Doors, lids; ~~or~~ removable covers
- M F27D 3/00** Charging; Discharging; Manipulation of charge ~~(moving charge through a furnace F27B 9/14)~~
- U F27D 2003/0001** • {Positioning the charge}
- M F27D 2003/0002** • • {involving positioning devices, e.g. buffers ~~or~~, buffer zones}
- U F27D 3/02** • Skids or tracks for heavy objects
- M F27D 3/026** • • {transport or conveyor rolls for furnaces; roller rails ~~(conveyor rolls in general B65G)~~}
- M F27D 3/16** • Introducing a fluid jet or current into the charge ~~{(porous elements for gas flushing of molten metals B22D 1/005)~~ *F27D 3/18 takes precedence*}
- M F27D 5/00** Supports, screens, or the like for the charge within the furnace ~~(travelling or movable supports F27D 3/12)~~
- M F27D 5/0031** • {Treatment baskets for ceramic articles ~~(for metallic articles C21D 9/0025)~~}
- M F27D 5/0062** • {Shields for the charge ~~(shields for the lining F27D 1/0033)~~}
- M F27D 7/00** Forming, maintaining, or circulating atmospheres in heating chambers
- M F27D 7/02** • Supplying steam, vapour, gases, or liquids
- M F27D 7/06** • Forming or maintaining special atmospheres or vacuum within heating chambers ~~(F27D 7/02 takes precedence)~~ *supplying steam, vapour, gases or liquids F27D 7/02*

- M F27D 9/00** Cooling of furnaces or of charges therein (~~F27D 1/00, F27D 3/00 take precedence~~ *casings, linings, walls or roofs incorporating cooling arrangements F27D 1/12*)
- M F27D 11/00** Arrangement of elements for electric heating in or on furnaces (~~electric heating per se H05B~~)
- U F27D 11/08 • Heating by electric discharge, e.g. arc discharge
- M F27D 11/10 • • Disposition of electrodes (~~automatic control of temperature G05D 23/00; electric discharge apparatus H01T; arrangements for feeding or guiding electrodes H05B 7/10; automatic control of power by positioning of electrodes H05B 7/144~~)
- U F27D 13/00** Apparatus for preheating charges; Arrangements for preheating charges
- M F27D 13/002 • {Preheating scrap (~~preheating of scrap for steel making C21C 5/565~~)}
- U F27D 15/00** Handling or treating discharged material; Supports or receiving chambers therefor
- U F27D 15/02 • Cooling
- M F27D 15/0286 • • {in a vertical, e.g. annular, shaft (~~shafts including rotating parts F27D 15/0273~~)}

Project: RP12464 (F27D)

- C F27D 17/00** Arrangements for using waste heat (~~heat-exchangers per se F28~~); Arrangements for using, or disposing of, waste gases

WARNING

*Group F27D 17/00 is impacted by reclassification into groups F27D 17/20, F27D 17/22, F27D 17/25 and F27D 17/28.
All groups listed in this Warning should be considered in order to perform a complete search.*

- D F27D 17/001 • {Extraction of waste gases, collection of fumes and hoods used therefor (in general B08B 15/00)}
- <administratively transferred to [F27D 17/30](#)>
- D F27D 17/002 • • {Details of the installations, e.g. fume conduits or seals}
- <administratively transferred to [F27D 17/302](#)>
- D F27D 17/003 • • {of waste gases emanating from an electric arc furnace}
- <administratively transferred to [F27D 17/304](#)>
- D F27D 17/004 • {Systems for reclaiming waste heat}
- <administratively transferred to [F27D 17/10](#)>
- D F27D 2017/005 • • {including pyrolysing the waste gases}
- <administratively transferred to [F27D 17/102](#) INV>
- D F27D 2017/006 • • {using a boiler}
- <administratively transferred to [F27D 17/15](#) INV>
- D F27D 2017/007 • • {including regenerators}
- <administratively transferred to [F27D 17/13](#) INV>
- D F27D 17/008 • {cleaning gases}
- <administratively transferred to [F27D 17/20](#)>
- D F27D 2017/009 • {Cyclone for separating fines from gas}
- <administratively transferred to [F27D 17/25](#) INV>

- Q F27D 17/10
- Arrangements for using waste heat
- WARNING
Group [F27D 17/10](#) is impacted by reclassification into groups [F27D 17/12](#), [F27D 17/15](#), [F27D 17/17](#) and [F27D 17/18](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N F27D 17/102
- {including pyrolysing the waste gases}
- N F27D 17/12
- using heat storage
- WARNING
Group [F27D 17/12](#) is incomplete pending reclassification of documents from group [F27D 17/10](#).
Groups [F27D 17/10](#) and [F27D 17/12](#) should be considered in order to perform a complete search.
- N F27D 17/13
- using regenerative heat exchangers
- N F27D 17/15
- using boilers
- WARNING
Group [F27D 17/15](#) is incomplete pending reclassification of documents from group [F27D 17/10](#).
Groups [F27D 17/10](#) and [F27D 17/15](#) should be considered in order to perform a complete search.
- N F27D 17/17
- for preheating fluids, e.g. air or gases
- WARNING
Group [F27D 17/17](#) is incomplete pending reclassification of documents from group [F27D 17/10](#).
Groups [F27D 17/10](#) and [F27D 17/17](#) should be considered in order to perform a complete search.
- N F27D 17/18
- for preheating solid materials
- WARNING
Group [F27D 17/18](#) is incomplete pending reclassification of documents from group [F27D 17/10](#).
Groups [F27D 17/10](#) and [F27D 17/18](#) should be considered in order to perform a complete search.
- Q F27D 17/20
- Arrangements for treatment or cleaning of waste gases
- WARNING
Group [F27D 17/20](#) is incomplete pending reclassification of documents from group [F27D 17/00](#).
Group [F27D 17/20](#) is also impacted by reclassification into groups [F27D 17/22](#), [F27D 17/25](#) and [F27D 17/28](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N F27D 17/22
- for removing solid constituents
- WARNING
Groups [F27D 17/22](#) and [F27D 17/25](#) are incomplete pending reclassification of documents from groups [F27D 17/00](#) and [F27D 17/20](#).
All groups listed in this warning should be considered in order to perform a complete search.
- N F27D 17/25
- using cyclones

N F27D 17/28

- for cooling waste gases

WARNING

Group [F27D 17/28](#) is incomplete pending reclassification of documents from groups [F27D 17/00](#) and [F27D 17/20](#).

Groups [F27D 17/00](#), [F27D 17/20](#) and [F27D 17/28](#) should be considered in order to perform a complete search.

N F27D 17/30

- Arrangements for extraction or collection of waste gases; Hoods therefor

N F27D 17/302

- {Constructional details of ancillary components, e.g. waste gas conduits or seals}

N F27D 17/304

- {specially adapted for electric arc furnaces}

Project: MP12331 (F27D)

U F27D 19/00

Arrangements of controlling devices**Project: RP12464 (F27D)**

M F27D 21/00

Arrangements**Arrangement** of monitoring devices;
Arrangements**Arrangement** of safety devices

M F27D 21/04

- **Arrangements****Arrangement** of indicators or alarms

Project: MP12331 (F27D)

U F27D 25/00

Devices {or methods} for removing incrustations {, e.g. slag, metal deposits, dust; Devices or methods for preventing the adherence of slag}

M F27D 25/001

- {comprising breaking tools, e.g. hammers, drills, scrapers ~~{breaking-away linings F27D 1/1694; boring machines for forming tapholes F27D 3/1527}~~}

M F27D 27/00

Stirring devices for molten material (~~F27D 3/14 takes precedence~~ **charging or discharging liquid or molten material F27D 3/14)**

U F27D 99/00

Subject matter not provided for in other groups of this subclass

U F27D 99/0001

- {Heating elements or systems}

M F27D 99/0033

- {using burners ~~{manufacture of steel in an electric arc furnace equipped with burners G21C 5/5217}~~}

Project: MP12337 (F41)

M F41

WEAPONSNOTES

1. This class covers also means for practice and training which may ~~cover also means for practice and training which may~~ have aspects of simulation, e.g. in apparatus for so-called "military games", although simulators are generally covered by class [G09](#).

2. In this class, the following terms or expressions are used with the meanings indicated:

- "smallarm" means a firearm which is generally held with one or both hands for firing, but this term also includes a light machine-gun which may be supported on a tripod or the like during firing;
- "gun" means any weapon having a barrel and a trigger or firing mechanism for projecting a missile; it may be a piece of ordnance or a smallarm. It may use combustible or explosive propellant charges, air pressure, electromagnetism or other propulsive forces;
- "revolver-type gun" means a gun having a revolving drum magazine, the chambers of which are used successively as firing chamber;
- "revolver" means a revolver-type pistol;

- "semi-automatic firearm" means a firearm from which one shot is fired after actuation of the trigger and which then returns to a condition for firing a subsequent shot upon renewed actuation of the trigger;
- "automatic **gunfirearm**" means a **gunfirearm** which will continue firing so long as the initial firing pressure is maintained on the trigger;
- "sighting" means bringing into visual coincidence a direction *defined by a so-called "sighting" device with the direction* of a target;
- "aiming" means bringing a weapon to a direction differing from the sighting direction by corrections in order that the projectile may hit the target;
- *{"stock" means the portion of a long gun that supports or affixes the working components of the firearm;}*
- "laying" means setting a weapon in the correct position for hitting a **marktarget**.

3. Attention is drawn to the definitions of "projectile", "missile" and "rocket" given in Note 2(2) following the title of class [F42](#).

Project: MP12337 (F41B)

M F41B

WEAPONS FOR PROJECTING MISSILES WITHOUT USE OF EXPLOSIVE OR COMBUSTIBLE PROPELLANT CHARGE; WEAPONS NOT OTHERWISE PROVIDED FOR (projectiles for fishing, e.g. fish-spears, [A01K 81/00](#); sports implements for throwing [A63B 65/00](#), e.g. boomerangs [A63B 65/08](#); stationary apparatus for projecting sports balls, e.g. tennis balls, [A63B 69/40](#); throwing or slinging toys [A63H 33/18](#); knives, axes [B26B](#); projectiles or missiles other than those incorporating springs as projecting means [F42B 6/00](#))

NOTE

{Attention is drawn to the definitions in Note (2) following the title of class [F41](#).}

WARNINGS

1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:

F41B 5/16	covered by	F41B 5/1473
F41B 5/18	covered by	F41B 5/1469
F41B 5/20	covered by	F41B 5/1426
F41B 5/22	covered by	F41B 5/143

2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

Project: Unknown (G01D)

U G01D 5/00

Mechanical means for transferring the output of a sensing member; Means for converting the output of a sensing member to another variable where the form or nature of the sensing member does not constrain the means for converting; Transducers not specially adapted for a specific variable ([G01D 3/00](#) takes precedence; specially adapted for apparatus giving results other than momentary value of variable [G01D 1/00](#))

NOTE

The subgroups of this main group are distinguished by the means which is of major importance. Thus the mere application of other means for giving a final indication does not affect the classification.

U G01D 5/12

- using electric or magnetic means ([G01D 5/06](#) takes precedence)

M G01D 5/243

- influencing the phase or frequency of **aeAC**

Project: RP12465 (G01L)

- U G01L 1/00** **Measuring force or stress, in general (measuring force due to impact [G01L 5/00](#))**
- U G01L 1/20**
 - by measuring variations in ohmic resistance of solid materials or of electrically-conductive fluids (of piezo-resistive materials [G01L 1/18](#)); by making use of electrokinetic cells, i.e. liquid-containing cells wherein an electrical potential is produced or varied upon the application of stress
- U G01L 1/22**
 - • using resistance strain gauges
- U G01L 1/2287**
 - • {constructional details of the strain gauges (adjustable resistors [H01C 10/00](#))}
- M G01L 1/2293**
 - • • {of the semi-conductor type ~~(semi-conductor devices controllable by variations of applied mechanical force H01L 29/84)~~}

Project: MP12468 (G01N)

- M G01N** **INVESTIGATING OR ANALYSING MATERIALS BY DETERMINING THEIR CHEMICAL OR PHYSICAL PROPERTIES (measuring or testing *apparatus or* processes other than immunoassay, involving enzymes or microorganisms [C12M](#), [C12Q](#))**

NOTES

1. In this subclass, the following terms are used with the meanings indicated :
 - "investigating" means testing or determining;
 - "materials" includes solid, liquid or gaseous media, e.g. the atmosphere.
2. Attention is drawn to the Notes following the title of class [G01](#).
3. Investigating the properties of materials, specially adapted for use in processes covered by subclass [B23K](#), is classified in group [B23K 31/12](#).

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

- M G01N 15/00** **Investigating characteristics of particles; Investigating permeability, pore-volume or surface-area of porous materials ~~(identification of microorganisms C12Q)~~**

Project: RP12065-F (G01N)

- U G01N 15/10**
 - Investigating individual particles
- U G01N 15/14**
 - • Optical investigation techniques, e.g. flow cytometry
- M G01N 2015/1481**
 - • • {Optical analysis of particles within droplets (sorting particles within droplets [G01N 15/1492](#))}

WARNING

Group G01N 2015/1481 is impacted by reclassification into group G01N 15/1492.

Groups G01N 2015/1481 and G01N 15/1492 should be considered in order to perform a complete search.

- U G01N 15/149**
 - • specially adapted for sorting particles, e.g. by their size or optical properties
- M G01N 15/1492**
 - • • within droplets

WARNING

Group G01N 15/1492 is incomplete pending reclassification of documents from group G01N 2015/1481.

Groups G01N 2015/1481 and G01N 15/1492 should be considered in order to perform a complete search.

Project: RP12465 (G01N)

- U G01N 27/00** Investigating or analysing materials by the use of electric, electrochemical, or magnetic means ([G01N 3/00](#) – [G01N 25/00](#) take precedence; measurement or testing of electric or magnetic variables or of electric or magnetic properties of materials [G01R](#))
- U G01N 27/26 • by investigating electrochemical variables; by using electrolysis or electrophoresis
- U G01N 27/403 • • Cells and electrode assemblies
- U G01N 27/414 • • • Ion-sensitive or chemical field-effect transistors, i.e. ISFETS or CHEMFETS
- M G01N 27/4148 • • • • {Integrated circuits therefor, e.g. fabricated by CMOS processing (~~CMOS processing per se~~ [H01L 21/82](#))}

Project: Unknown (G01N)

- U G01N 35/00** Automatic analysis not limited to methods or materials provided for in any single one of groups [G01N 1/00](#) - [G01N 33/00](#); Handling materials therefor
- U G01N 35/02 • using a plurality of sample containers moved by a conveyor system past one or more treatment or analysis stations {([G01N 35/0098](#) and [G01N 35/0099](#) take precedence)}
- U G01N 35/021 • • {having a flexible chain, e.g. "cartridge belt", conveyor for reaction cells or cuvettes}
- M G01N 2035/023 • • • {forming cuvettes ~~in-situ~~ [in situ](#), e.g. from plastic strip}
- U G01N 2201/00** Features of devices classified in [G01N 21/00](#)
- U G01N 2201/06 • Illumination; Optics
- U G01N 2201/061 • • Sources
- M G01N 2201/06193 • • • ~~Secondary~~ [Secondary](#) ~~in-situ~~ [in situ](#) sources, e.g. fluorescent particles

Project: Unknown (G01R)

- U G01R 19/00** Arrangements for measuring currents or voltages or for indicating presence or sign thereof ([G01R 5/00](#) takes precedence; for measuring bioelectric currents or voltages [A61B 5/24](#))
- NOTE
Within groups [G01R 19/02](#) - [G01R 19/32](#), group [G01R 19/28](#) takes precedence. Groups [G01R 19/18](#) - [G01R 19/257](#) take precedence over groups [G01R 19/02](#) - [G01R 19/17](#) and [G01R 19/30](#).
- M G01R 19/04 • Measuring peak values {or amplitude or envelope} of ~~ac~~ [AC](#) or of pulses
- M G01R 19/22 • using conversion of ~~ac into dc~~ [AC into DC](#)

Project: RP12465 (G01R)

- U G01R 33/00** Arrangements or instruments for measuring magnetic variables
- U G01R 33/12 • Measuring magnetic properties of articles or specimens of solids or fluids (involving magnetic resonance [G01R 33/20](#))
- M G01R 33/1284 • • {Spin resolved measurements; Influencing spins during measurements, e.g. in spintronics devices (~~G01R 33/093 takes precedence; semiconductor devices using spin-polarized carriers~~ [H01L 29/66984](#))}

Project: RP12333 (G01T)

- U G01T 1/00** Measuring X-radiation, gamma radiation, corpuscular radiation, or cosmic radiation ([G01T 3/00](#), [G01T 5/00](#) take precedence)

- U G01T 1/16
 - Measuring radiation intensity ([G01T 1/29](#) takes precedence {; self-powered detectors [G01T 3/006](#); using an ionisation chamber filled with a liquid or solid, e.g. frozen liquid, dielectric [G01T 3/008](#)})
- U G01T 1/24
 - • with semiconductor detectors
- M G01T 1/241
 - • • {Electrode arrangements, e.g. continuous or parallel strips or the like ~~{constructional or manufacturing details H01L 31/00}~~}
- M G01T 1/26
 - • with resistance detectors ~~{(photoresistors H01L 31/00)}~~
- U G01T 1/36
 - Measuring spectral distribution of X-rays or of nuclear radiation {spectrometry (pulse selection circuits per se [H03K](#); investigation of materials by radiation diffraction [G01N 23/20](#); spectrometer tubes [H01J 49/00](#))}
- M G01T 1/38
 - • Particle discrimination and measurement of relative mass, e.g. by measurement of loss of energy with distance (dE/dx) ~~{(constructional details of semiconductor detectors therefor H01L 31/00)}~~
- U G01T 3/00**

Measuring neutron radiation ([G01T 5/00](#) takes precedence)
- M G01T 3/006
 - {using self-powered detectors (for neutrons as well as for Y- or X-rays)-, e.g. using Compton-effect (Compton diodes) or photo-emission or a (n,B) nuclear reaction (~~photovoltaic semiconductors H01L 31/00~~; ~~radioisotopic generators G21H 1/00~~, e.g. [G21H 1/02](#), [G21H 1/04](#); photo-tubes [H01J 40/00](#); thermionic generators [H01J 45/00](#); ~~radioisotopic generators G21H 1/00~~, e.g. ~~G21H 1/02~~, ~~G21H 1/04~~)}

Project: Unknown (G01V)

- U G01V 3/00**

Electric or magnetic prospecting or detecting; Measuring magnetic field characteristics of the earth, e.g. declination, deviation
- U G01V 3/02
 - operating with propagation of electric current
- M G01V 3/04
 - • using ~~de~~DC
- M G01V 3/06
 - • using ~~ae~~AC
- U G01V 3/18
 - specially adapted for well-logging
- U G01V 3/20
 - • operating with propagation of electric current
- M G01V 3/22
 - • • using ~~de~~DC
- M G01V 3/24
 - • • using ~~ae~~AC

Project: RP12457 (G02B)

- U G02B 6/00**

Light guides; Structural details of arrangements comprising light guides and other optical elements, e.g. couplings
- U G02B 6/0001
 - {specially adapted for lighting devices or systems (lighting or signalling on vehicles using light guides [B60Q 1/00](#); lighting devices for vehicle dashboards [B60Q 3/10](#); lighting devices for vehicle interior using light guides [B60Q 3/62](#); lighting devices mounted on the vehicle rear part using light guides [F21S 43/235](#); measuring arrangements having light conducting pointers [G01D 13/265](#); illumination of liquid crystal displays [G02F 1/1336](#); illuminated signs [G09F 13/00](#))}
- U G02B 6/0011
 - • {the light guides being planar or of plate-like form}
- U G02B 6/0081
 - • • {Mechanical or electrical aspects of the light guide and light source in the lighting device peculiar to the adaptation to planar light guides, e.g. concerning packaging}
- M G02B 6/0085
 - • • • {Means for removing heat created by the light source from the package ~~{(heat extraction or cooling elements for semiconductor light sources in general H01L 33/64)}~~}

Project: RP12465 (G02B)

- U G02B 6/10
 - of the optical waveguide type ([G02B 6/02](#), [G02B 6/24](#) take precedence; devices or arrangements for the control of light by electric, magnetic, electro-magnetic or acoustic means [G02F 1/00](#); transferring the modulation of modulated light [G02F 2/00](#); optical logic elements [G02F 3/00](#); optical analogue/digital converters [G02F 7/00](#))
- M G02B 6/12
 - • of the integrated circuit kind (~~electric integrated circuits~~ [H01L 27/00](#) ~~electric integrated circuits~~ [H10B](#), [H10D 84/00](#) - [H10D 89/00](#), [H10F 19/00](#), [H10F 39/00](#), [H10H 29/00](#), [H10K 19/00](#), [H10K 39/00](#), [H10K 59/00](#), [H10N 19/00](#), [H10N 39/00](#), [H10N 59/00](#), [H10N 69/00](#), [H10N 79/00](#), [H10N 89/00](#))

Project: RP12457 (G02B)

- U G02B 6/24
 - Coupling light guides
- U G02B 6/42
 - • Coupling light guides with opto-electronic elements

NOTE

In this group, the following expression is used with the meaning indicated:

- "opto-electronic elements" includes light emitting elements, e.g. lasers or LED's, as well as light receiving elements, e.g. photodiodes or phototransistors

- U G02B 6/4201
 - • • {Packages, e.g. shape, construction, internal or external details}
- M G02B 6/4204
 - • • • {the coupling comprising intermediate optical elements, e.g. lenses, holograms (encapsulated active devices [H01S 5/02208](#), ~~H01L 33/52~~)}
- U G02B 6/4249
 - • • • {comprising arrays of active devices and fibres}
- M G02B 6/425
 - • • • • {Optical features (~~semiconductor laser arrays~~ [H01S 5/40](#); hybrid LED arrays [H01L 25/0753](#); ~~monolithic LED arrays~~ [H01L 27/153](#); ~~semiconductor laser arrays~~ [H01S 5/40](#))}
- U G02B 17/00**
Systems with reflecting surfaces, with or without refracting elements
- U G02B 17/02
 - Catoptric systems, e.g. image erecting and reversing system
- U G02B 17/06
 - • using mirrors only {, i.e. having only one curved mirror (used in non-imaging applications [G02B 19/00](#))}
- U G02B 17/0668
 - • • {having non-imaging properties}
- M G02B 17/0673
 - • • • {for light condensing, e.g. for use with a light emitter (details of lighting devices in general [F21V](#); ~~semiconductor devices with at least one potential-jump barrier or surface barrier specially adapted for light emission~~ [H01L 33/00](#))}
- U G02B 17/08
 - Catadioptric systems {(used in non-imaging applications [G02B 19/00](#))}
- U G02B 17/0864
 - • {having non-imaging properties}
- M G02B 17/0868
 - • • {for light condensing, e.g. for use with a light emitter (details of lighting devices in general [F21V](#); ~~semiconductor devices with at least one potential-jump barrier or surface barrier specially adapted for light emission~~ [H01L 33/00](#))}
- U G02B 19/00**
Condensers, {e.g. light collectors or similar non-imaging optics}{for microscopes [G02B 21/08](#)}
- U G02B 19/0033
 - {characterised by the use}
- U G02B 19/0047
 - • {for use with a light source ([G02B 19/009](#), [G02B 19/0095](#) take precedence; details of lighting devices in general [F21V](#); non-semiconductor lasers having optical devices external to the laser cavity [H01S 3/005](#))}

- M G02B 19/0061 . . . {the light source comprising a LED ~~(semiconductor devices with at least one potential-jump barrier or surface barrier specially adapted for light emission H01L 33/00)}~~
- U G02B 27/00 **Optical systems or apparatus not provided for by any of the groups G02B 1/00 - G02B 26/00, G02B 30/00**
- U G02B 27/09 . Beam shaping, e.g. changing the cross-sectional area, not otherwise provided for {(adapting the beam shape of a laser diode G02B 19/0052; adapting the beam shape of an LED G02B 19/0061; coupling into light guides using intermediate optical elements G02B 6/4204; beam shaping specially adapted for lasers H01S 3/005)}
- M G02B 27/0916 . . {Adapting the beam shape of a semiconductor light source such as a laser diode or an LED, e.g. for efficiently coupling into optical fibers (coupling into light guides using intermediate optical elements G02B 6/4204; details of lighting devices in general F21V; ~~semiconductor devices with at least one potential-jump barrier or surface barrier specially adapted for light emission H01L 33/00~~)}

Project: MP12337 (G03B)

- U G03B 23/00 **Devices for changing pictures in viewing apparatus or projectors**
NOTE
For the purposes of this group the term "picture" denotes any flat representation, whether transparent or not, e.g. produced by photography, writing or printing
- M G03B 23/02 . in which ~~a picture is removed from a stock~~ *pictures are removed from*, and returned to ~~the same stock or another one~~, *magazines*; Magazines therefor
- U G03B 23/04 . . with linear movement
- M G03B 23/042 . . . {whereby the ~~picture is~~ *pictures are* not returned to the same ~~stock~~ *magazines* after projection}
- M G03B 23/044 . . . {whereby the ~~picture is~~ *pictures are* returned to the same ~~stock~~ *magazines* after projection}

Project: Unknown (G03B)

- U G03B 42/00 **Obtaining records using waves other than optical waves; Visualisation of such records by using optical means**
- U G03B 42/02 . using X-rays
- U G03B 42/04 . . Holders for X-ray films
- M G03B 42/042 . . . {for dental applications (~~radiation diagnosis specially adapted for dentistry A61B6/51;~~ *radiation diagnosis specially adapted for dentistry A61B 6/51;* individual packages for X-ray film G03C 3/003)}

Project: MP12467 (G04C)

- U G04C 3/00 **Electromechanical clocks or watches independent of other time-pieces and in which the movement is maintained by electric means {(synchronisation G04C 11/00)}**
- U G04C 3/02 . wherein movement is regulated by a pendulum
- M G04C 3/025 . . {using more than one pendulum (~~synchronisation between master and slave pendulums G04C 13/028~~ *synchronisation between primary and secondary pendulums G04C 13/028*)}
- U G04C 3/027 . . using electromagnetic coupling between electric power source and pendulum (G04C 3/033 takes precedence)

- M G04C 3/0273 . . . {the pendulum controlling contacts, thereby electromagnetically driving the gear-train or several gear-trains (generating driving pulses in **master-primary** clocks [G04C 13/0463](#))}
- M G04C 3/14 . incorporating a stepping motor ([G04C 3/02](#) - [G04C 3/12](#) take precedence {generating timing pulses [G04F 5/00](#), [G04G 3/00](#); setting [G04G 5/00](#); synchronisation [G04G 7/00](#); generating commutating pulses in **masterclocksprimary clocks** [G04C 13/0463](#), [G04C 13/02](#); **slave clocks** actuated intermittently by electromechanical step-advancing mechanisms [G04C 13/10](#); control circuits for stepping motors in general [H02P 8/00](#))}
- M G04C 9/00 **Electrically-actuated devices for setting the time-indicating means (~~of slave clocks G04C 13/03~~; ~~mechanical setting devices G04B 27/00~~; **of secondary clocks G04C 13/03**; radio-controlled time-pieces [G04R](#))**
- M G04C 11/00 - G04C 15/00 **Electric clock installations; ~~Master-and-slave~~Primary and secondary clock systems; Synchronous-motor clocks**
- M G04C 13/00 **Driving mechanisms for clocks by **master-primary** clocks**
- U G04C 13/02 . Circuit arrangements; Electric clock installations
- M G04C 13/021 . . {**master-slaveprimary-secondary** systems using transmission of singular pulses for driving directly **slave-secondary** clocks step by step ([G04C 13/03](#) takes precedence)}
- M G04C 13/027 . . {**master-slaveprimary-secondary** systems using transmission of other driving signals, e.g. coded signals}
- M G04C 13/028 . . {transmission systems for synchronisation of pendulum of **slave-secondary** clocks by pendulums of **master-primary** clocks}
- M G04C 13/03 . . Pulse transmission systems with additional means for setting the time indication of **slave-secondary** clocks {([G04C 13/028](#) takes precedence)}
- M G04C 13/04 . . **Master-Primary** clocks
- M G04C 13/0409 . . . {monitoring or controlling **master-primary** clock or system with more than one **master-primary** clock, e.g. for switching-over to standby motor or power system}
- M G04C 13/0418 . . . {by using devices similar to **slave-secondary** clocks}
- M G04C 13/0427 . . . {Systems in which **slave-secondary** clocks function as **master-primary** clocks for other **slave-secondary** clocks (synchronisation of independently-driven clocks [G04C 11/00](#), setting [G04C 9/00](#))}
- M G04C 13/0436 . . . {provided with supplementary means for setting or changing the time indication of the **slave-secondary** clocks}
- M G04C 13/0454 . . . {for automatically setting of **slave-secondary** clocks after correction or after setting of **master-primary** clock}
- M G04C 13/08 . **Slave-Secondary** clocks actuated intermittently
- U G04C 13/10 . by electromechanical step advancing mechanisms {(independent clocks or watches incorporating a stepping motor [G04C 3/14](#); stepping motors in general [H02K 33/00](#))}
- M G04C 13/105 . . . {setting the time-indicating means (~~master-slave-systems-with-setting means G04C 13/03~~; adjusting independently-driven clocks [G04C 9/00](#), [G04C 11/00](#); **primary-secondary systems with setting means G04C 13/03**)}

Project: Unknown (G04F)

- U G04F 10/00 **Apparatus for measuring unknown time intervals by electric means**
- M G04F 10/04 . by counting pulses or half-cycles of an **acAC** {([G04F 10/005](#) takes precedence)}

Project: Unknown (G05B)

- U G05B 11/00 Automatic controllers ([G05B 13/00](#) takes precedence)**
- U G05B 11/01 · electric
 - U G05B 11/06 · · in which the output signal represents a continuous function of the deviation from the desired value, i.e. continuous controllers ([G05B 11/26](#) takes precedence)
 - M G05B 11/10 · · · the signal transmitted being **deDC**
 - M G05B 11/12 · · · the signal transmitted being modulated on an **aeAC** carrier

Project: MP12467 (G05B)

- U G05B 19/00 Programme-control systems**
- U G05B 19/02 · electric
 - U G05B 19/42 · · Recording and playback systems, i.e. in which the programme is recorded from a cycle of operations, e.g. the cycle of operations being manually controlled, after which this record is played back on the same machine
 - M G05B 19/427 · · · Teaching successive positions by tracking the position of a joystick or handle to control the positioning servo of the tool head, **master-slave/leader-follower** control ([G05B 19/423](#) takes precedence)

Project: Unknown (G05B)

- U G05B 2219/00 Program-control systems**
- U G05B 2219/20 · Pc systems
 - U G05B 2219/25 · · Pc structure of the system
 - M G05B 2219/25358 · · · During detection of input, switch over to **deDC** power
 - U G05B 2219/30 · Nc systems
 - U G05B 2219/31 · · From computer integrated manufacturing till monitoring
 - M G05B 2219/31176 · · · Universal, same protocol to control all kind of drives, **de, aeDC, AC**, step motor
 - U G05B 2219/34 · · Director, elements to supervisory
 - M G05B 2219/34231 · · · Interface controls either **de, aeDC, AC** or step motors
 - U G05B 2219/37 · · Measurements
 - M G05B 2219/37016 · · · Calibrate **deDC** offset, measure offset and maintain fixed level
 - M G05B 2219/37184 · · · Hall generator cooperates with magnetic ring, gives signal with **deDC** offset
 - M G05B 2219/37305 · · · Drive step motor with pulses, at stop with **deDC** current to avoid emi when measuring

Project: MP12266 (G05B)

- M G05B 2219/37349 · · · **Unbalance/Imbalance** of tool or tool holder

Project: Unknown (G05B)

- U G05B 2219/39 · · Robotics, robotics to robotics hand
- M G05B 2219/39345 · · · Active compliance control, control tension of spring with **deDC** motor
- M G05B 2219/39459 · · · Finger actuator, **aeAC** motor and harmonic gear and encoder
- U G05B 2219/41 · · Servomotor, servo controller till figures
- M G05B 2219/41101 · · · Stop, halt step, **aeAC** motor on certain excitation phase, after sensing a reference
- M G05B 2219/41136 · · · Compensation of position for slip of **aeAC** motor

M	G05B 2219/41284	• • • Brake by applying de -to- ae DC to AC motor
M	G05B 2219/41285	• • • Dynamic brake of ae , de AC, DC motor
M	G05B 2219/41293	• • • Inverter, de DC-to- ae AC
M	G05B 2219/41294	• • • De DC-to- ae AC converter
M	G05B 2219/41295	• • • Ae AC-to- ae AC converter frequency controlled
M	G05B 2219/41319	• • • Ae AC, induction motor
M	G05B 2219/41321	• • • Brushless de DC motor
M	G05B 2219/41329	• • • De DC motor
M	G05B 2219/41336	• • • Voltage- and frequency- controlled ae-controlled AC motor
U	G05B 2219/42	• • Servomotor, servo controller kind till VSS
M	G05B 2219/42236	• • • Use of a certain number of ae AC periods

Project: MP12266 (G05B)

U	G05B 2219/49	• • Nc machine tool, till multiple
M	G05B 2219/49177	• • • Runout, eccentricity, unbalance imbalance of tool or workpiece

Project: Unknown (G05D)

U	G05D 3/00	Control of position or direction (G05D 1/00 takes precedence; numerical control to execute positioning G05B 19/18)
U	G05D 3/12	• using feedback
U	G05D 3/14	• • using an analogue comparing device
M	G05D 3/1409	• • • {with de DC amplifier chain}
M	G05D 3/1418	• • • {with ae AC amplifier chain}

Project: MP12332 (G05F)

M	G05F	<p>SYSTEMS FOR REGULATING ELECTRIC OR MAGNETIC VARIABLES (regulating the timing or recurrence frequency of pulses in radar or radio navigation systems G01S; regulation of current or voltage, specially adapted for use in electronic time-pieces G04G 19/02; closed-loop systems for regulating non-electric variables by electric means G05D; regulating power supply of digital computers G06F 1/26; for obtaining desired operating characteristics of electromagnets with armatures H01F 7/18; regulating electric power distribution networks H02J; regulating the charging of batteries H02J 7/00; regulation of the output of static converters, e.g. switching regulators H02M; regulation of the output of electric generators H02N, H02P 9/00; controlling transformers, reactors or choke coils H02P 13/00; regulating frequency response, gain, maximum output, amplitude or bandwidth of amplifiers H03G; regulating tuning of resonant circuits H03J; regulating characteristics of transmission lines H04B; controlling electric light sources H05B 39/04, H05B 41/36, H05B 45/10, H05B 45/20, H05B 47/10; electric control of X-ray apparatus H05G 1/30)</p>
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NOTES

1. This subclass covers:

- systems only;
- use of hydraulic, pneumatic, mechanical, and electrical motors for varying electric characteristics of devices which restore the quantity regulated;

- the combination of static converters and current or voltage regulators, if the invention resides in the combination.

2. This subclass does not cover elements per se, which are covered by the relevant subclasses.

WARNINGS

1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:

G05F 3/28	covered by	G05F 3/26
G05F 5/02	covered by	G05F 5/00
G05F 5/04	covered by	G05F 5/00
G05F 5/06	covered by	G05F 5/00
G05F 5/08	covered by	G05F 5/00

2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

U	G05F 1/00	Automatic systems in which deviations of an electric quantity from one or more predetermined values are detected at the output of the system and fed back to a device within the system to restore the detected quantity to its predetermined value or values, i.e. retroactive systems
M	G05F 1/02	• Regulating electric characteristics of arcs (arrangements for feeding electrodes B23K 9/12, H05B 7/109, H05B 31/18; automatic control of power for heating by discharge H05B 7/148)
M	G05F 1/10	• Regulating voltage or current (G05F 1/02 takes precedence; for electric railways B60M 3/02)

Project: Unknown (G05F)

M	G05F 1/12	• • wherein the variable actually regulated by the final control device is acAC (G05F 1/625 takes precedence)
M	G05F 1/46	• • wherein the variable actually regulated by the final control device is deDC (G05F 1/625 takes precedence)
M	G05F 1/62	• • using bucking or boosting deDC sources
M	G05F 1/625	• • wherein it is irrelevant whether the variable actually regulated is ac-or-deAC or DC
U	G05F 3/00	Non-retroactive systems for regulating electric variables by using an uncontrolled element, or an uncontrolled combination of elements, such element or such combination having self-regulating properties {(current generators specially designed for use in phase-locked loops H03L 7/0891)}
U	G05F 3/02	• Regulating voltage or current
M	G05F 3/04	• • wherein the variable is acAC
M	G05F 3/08	• • wherein the variable is deDC

Project: MP12332 (G05F)

M	G05F 7/00	Regulating magnetic variables (details of apparatus for measuring magnetic variables involving magnetic resonance G01R 33/28)
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Project: RP12333 (G06E)

U	G06E 3/00	Devices not provided for in group G06E 1/00, e.g. for processing analogue or hybrid data
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- M G06E 3/001
- {Analogue devices in which mathematical operations are carried out with the aid of optical or electro-optical elements (optical elements [per se G02B](#); ~~devices consisting of a plurality of solid state components, including light sensitive semiconductor components, formed in or on a common substrate H01L 27/14~~; electro-, magneto- or acousto-optics, non-linear optics [G02F 1/00](#); graph reading [G06K 11/00](#))}

Project: RP10469 (G06F)

- U G06F 1/00 Details not covered by groups [G06F 3/00](#) - [G06F 13/00](#) and [G06F 21/00](#) (architectures of general purpose stored program computers [G06F 15/76](#))
- U G06F 1/16
- Constructional details or arrangements
- C G06F 1/1613
- {for portable computers (cooling arrangements therefor [G06F 1/203](#); constructional details or arrangements for pocket calculators, electronic agendas or books [G06F 15/0216](#); constructional details of portable telephone sets: with several bodies [H04M 1/0202](#))}
- WARNING**
Group [G06F 1/1613](#) is impacted by reclassification into group [G06F 1/1629](#). Groups [G06F 1/1613](#) and [G06F 1/1629](#) should be considered in order to perform a complete search.
- C G06F 1/1628
- • {~~Carrying enclosures containing additional elements~~ Enclosures for carrying portable computers with peripheral devices, e.g. ~~case~~cases for a laptop and a printer}
- WARNING**
Group [G06F 1/1628](#) is impacted by reclassification into groups [A45C 11/003](#) and [G06F 1/1629](#). Groups [G06F 1/1628](#), [A45C 11/003](#) and [G06F 1/1629](#) should be considered in order to perform a complete search.
- N G06F 1/1629
- • {Protective covers or auxiliary enclosures for portable computers (for carrying with peripheral devices [G06F 1/1628](#); for storing [A45C 11/003](#))}
- WARNING**
Group [G06F 1/1629](#) is incomplete pending reclassification of documents from groups [A45C 11/00](#), [A45C 11/001](#), [A45C 11/003](#), [G06F 1/1613](#), [G06F 1/1628](#), [G06F 2200/1633](#) and [H04B 1/3888](#). All groups listed in this Warning should be considered in order to perform a complete search.
- U G06F 1/1633
- • {Constructional details or arrangements of portable computers not specific to the type of enclosures covered by groups [G06F 1/1615](#) - [G06F 1/1626](#)}
- M G06F 1/1656
- • • {Details related to functional adaptations of the enclosure, e.g. to provide protection against EMI, shock, water, or to host detachable peripherals like a mouse or removable expansions units like PCMCIA cards, or to provide access to internal components for maintenance or to removable storage supports like CDs or DVDs, or to mechanically mount accessories (mounting of accessories to a computer display [G06F 1/1607](#); display hoods [G06F 1/1603](#); cooling arrangements for portable computers [G06F 1/203](#))}
- WARNING**
Group [G06F 1/1656](#) is incomplete pending reclassification of documents from groups [A45C 11/003](#) and [G06F 2200/1633](#). Groups [A45C 11/003](#), [G06F 2200/1633](#) and [G06F 1/1656](#) should be considered in order to perform a complete search.

Project: RP12336 (G06F)

- U G06F 9/00 Arrangements for program control, e.g. control units (program control for peripheral devices [G06F 13/10](#))**
- U G06F 9/06 · using stored programs, i.e. using an internal store of processing equipment to receive or retain programs
- U G06F 9/44 · · Arrangements for executing specific programs
- U G06F 9/445 · · · Program loading or initiating (bootstrapping [G06F 9/4401](#); security arrangements for program loading or initiating [G06F 21/57](#))
- M G06F 9/44589 · · · · {Program code verification, e.g. Java bytecode verification, proof-carrying code (high-level semantic checks [G06F 8/43](#); ~~testing and debugging software~~ [G06F 11/36](#); *prevention of errors by analysis, debugging or testing of software* [G06F 11/36](#))}

- U G06F 11/00 Error detection; Error correction; Monitoring (error detection, correction or monitoring in information storage based on relative movement between record carrier and transducer [G11B 20/18](#); monitoring, i.e. supervising the progress of recording or reproducing [G11B 27/36](#); in static stores [G11C 29/00](#))**

NOTE

In this group the indexing codes of [G06F 1/00](#) - [G06F 15/00](#) are added

- M G06F 11/36 · ~~Preventing errors by testing or debugging~~ *Prevention of errors by analysis, debugging or testing of software*
- M G06F 11/3604 · · {~~Software analysis~~ *Analysis of software* for verifying properties of programs (~~byte-code verification~~ [G06F 9/44589](#) *testing of software* [G06F 11/3668](#))}
- M G06F 11/362 · · {~~Software debugging~~ *Debugging of software*}
- D G06F 11/3664 · · {Environments for testing or debugging software}
<administratively transferred to [G06F 11/3698](#)>
- M G06F 11/3668 · · {~~Software testing~~ *Testing of software* (~~software testing in telephone exchanges~~ [H04M 3/242](#), ~~testing of hardware~~ [G06F 11/22](#))}
- U G06F 11/3696 · · · {Methods or tools to render software testable}
- N G06F 11/3698 · · *Environments for analysis, debugging or testing of software*

Project: RP12338 (G06F)

- U G06F 16/00 Information retrieval; Database structures therefor; File system structures therefor**

- M G06F 16/30 · of unstructured textual data (document management systems [G06F 16/93](#))

NOTE

In groups [G06F 16/30](#), [G06F 16/31](#), [G06F 16/313](#), [G06F 16/316](#), [G06F 16/319](#), [G06F 16/322](#), [G06F 16/325](#), [G06F 16/328](#), [G06F 16/33](#), [G06F 16/332](#), [G06F 16/3322](#), [G06F 16/3323](#), [G06F 16/3325](#), [G06F 16/3326](#), [G06F 16/3328](#), [G06F 16/3329](#), [G06F 16/33295](#), [G06F 16/3331](#), [G06F 16/3332](#), [G06F 16/3334](#), [G06F 16/3335](#), [G06F 16/3337](#), [G06F 16/3338](#), [G06F 16/334](#), [G06F 16/3341](#), [G06F 16/3343](#), [G06F 16/3344](#), [G06F 16/3346](#), [G06F 16/3347](#), [G06F 16/3349](#), [G06F 16/335](#), [G06F 16/337](#), [G06F 16/338](#), [G06F 16/34](#), [G06F 16/345](#), [G06F 16/35](#), [G06F 16/353](#), [G06F 16/355](#), [G06F 16/358](#), [G06F 16/36](#), [G06F 16/367](#) and [G06F 16/374](#), subject matter relevant to retrieval characterised by using metadata, when it is determined to be novel and non-obvious, must also be classified in groups [G06F 16/38](#), [G06F 16/381](#), [G06F 16/382](#), [G06F 16/383](#), and [G06F 16/387](#).

- U G06F 16/33 · · Querying

U	G06F 16/332	• • • Query formulation
C	G06F 16/3329	• • • • {Natural language query formulation-or dialogue systems} <div> <p>WARNING</p> <p>Group <u>G06F 16/3329</u> is impacted by reclassification into group <u>G06F 16/33295</u>. Groups <u>G06F 16/3329</u> and <u>G06F 16/33295</u> should be considered in order to perform a complete search.</p> </div>
N	G06F 16/33295	• • • • {in dialogue systems} <div> <p>WARNING</p> <p>Group <u>G06F 16/33295</u> is incomplete pending reclassification of documents from group <u>G06F 16/3329</u>. Groups <u>G06F 16/3329</u> and <u>G06F 16/33295</u> should be considered in order to perform a complete search.</p> </div>
M	G06F 16/3331	• • • {Query processing}
M	G06F 16/3332	• • • • {Query translation}
M	G06F 16/334	• • • • {Query execution (G06F 16/335 takes precedence filtering based on additional data <u>G06F 16/335</u>)}
M	G06F 16/3349	• • • • {Reuse of stored results of previous queries}
C	G06F 16/34	• • Browsing; Visualisation therefor (browsing or visualisation for clustering or classification <u>G06F 16/358</u>) <div> <p>WARNING</p> <p>Group <u>G06F 16/34</u> is impacted by reclassification into group <u>G06F 16/358</u>. Groups <u>G06F 16/34</u> and <u>G06F 16/358</u> should be considered in order to perform a complete search.</p> </div>
U	G06F 16/35	• • Clustering; Classification
M	G06F 16/353	• • • {into predefined classes}
M	G06F 16/355	• • • • {Class or cluster creation or modification} Creation or modification of classes or clusters
T	G06F 16/358	• • • {Browsing; -Visualisation therefor} <div> <p>WARNING</p> <p>Group <u>G06F 16/358</u> is incomplete pending reclassification of documents from group <u>G06F 16/34</u>. Groups <u>G06F 16/34</u> and <u>G06F 16/358</u> should be considered in order to perform a complete search.</p> </div>

Project: RP11770-F (G06F)

M	G06F 18/00	Pattern recognition <div> <p>WARNING</p> <p>Group <u>G06F 18/00</u> is impacted by reclassification into groups <u>G06F 18/20</u>, <u>G06F 18/26</u>, <u>G06F 18/27</u> and <u>G06F 18/30</u>. All groups listed in this Warning should be considered in order to perform a complete search.</p> </div>
M	G06F 18/10	• Pre-processing; Data cleansing <div> <p>WARNING</p> <p>Group <u>G06F 18/10</u> is impacted by reclassification into group <u>G06F 18/15</u>. Groups <u>G06F 18/10</u> and <u>G06F 18/15</u> should be considered in order to perform a complete search.</p> </div>

M	G06F 18/15	<ul style="list-style-type: none"> • Statistical pre-processing, e.g. techniques for normalisation or restoring missing data <p><u>WARNING</u> Group G06F 18/15 is incomplete pending reclassification of documents from group G06F 18/10. Groups G06F 18/10 and G06F 18/15 should be considered in order to perform a complete search.</p>
M	G06F 18/20	<ul style="list-style-type: none"> • Analysing <p><u>WARNING</u> Groups G06F 18/20, G06F 18/26 and G06F 18/27 are incomplete pending reclassification of documents from group G06F 18/00. All groups listed in this Warning should be considered in order to perform a complete search.</p>
U	G06F 18/21	<ul style="list-style-type: none"> • Design or setup of recognition systems or techniques; Extraction of features in feature space; Blind source separation
M	G06F 18/213	<ul style="list-style-type: none"> • Feature extraction, e.g. by transforming the feature space; Summarisation; Mappings, e.g. subspace methods <p><u>WARNING</u> Group G06F 18/213 is impacted by reclassification into group G06F 18/2131. Groups G06F 18/213 and G06F 18/2131 should be considered in order to perform a complete search.</p>
M	G06F 18/2131	<ul style="list-style-type: none"> • based on a transform domain processing, e.g. wavelet transform <p><u>WARNING</u> Group G06F 18/2131 is incomplete pending reclassification of documents from group G06F 18/213. Groups G06F 18/213 and G06F 18/2131 should be considered in order to perform a complete search.</p>
M	G06F 18/2132	<ul style="list-style-type: none"> • based on discrimination criteria, e.g. discriminant analysis <p><u>WARNING</u> Group G06F 18/2132 is impacted by reclassification into groups G06F 18/2325 and G06F 18/2337. Groups G06F 18/2132, G06F 18/2325 and G06F 18/2337 should be considered in order to perform a complete search.</p>
U	G06F 18/23	<ul style="list-style-type: none"> • Clustering techniques
M	G06F 18/232	<ul style="list-style-type: none"> • Non-hierarchical techniques <p><u>WARNING</u> Group G06F 18/232 is impacted by reclassification into groups G06F 18/2325 and G06F 18/2337. Groups G06F 18/232, G06F 18/2325 and G06F 18/2337 should be considered in order to perform a complete search.</p>
M	G06F 18/2325	<ul style="list-style-type: none"> • using vector quantisation <p><u>WARNING</u> Group G06F 18/2325 is incomplete pending reclassification of documents from group G06F 18/232. Groups G06F 18/232 and G06F 18/2325 should be considered in order to perform a complete search.</p>

- M G06F 18/2337 • • • using fuzzy logic, i.e. fuzzy clustering

WARNING

~~Group G06F 18/2337 is incomplete pending reclassification of documents from group G06F 18/232.~~
~~Groups G06F 18/232 and G06F 18/2337 should be considered in order to perform a complete search.~~

- M G06F 18/30 • Post-processing

WARNING

~~Group G06F 18/30 is incomplete pending reclassification of documents from group G06F 18/00.~~
~~Groups G06F 18/00 and G06F 18/30 should be considered in order to perform a complete search.~~

Project: Unknown (G06F)

- U G06F 21/00 **Security arrangements for protecting computers, components thereof, programs or data against unauthorised activity**

- G06F 21/10 • Protecting distributed programs or content, e.g. vending or licensing of copyrighted material (protection in video systems or pay television [H04N 7/16](#))
 {; Digital rights management [DRM]}

NOTE

{In this group, the following terms or expressions are used with the meaning indicated:-

- "content" means any intellectually created work whose copyright is to be safeguarded.

}

Project: RP10469 (G06F)

- U G06F 2200/00 **Indexing scheme relating to [G06F 1/04](#) - [G06F 1/32](#)**

- U G06F 2200/16 • Indexing scheme relating to [G06F 1/16](#) - [G06F 1/18](#)

- U G06F 2200/163 • • Indexing scheme relating to constructional details of the computer

- F G06F 2200/1633 • • • Protecting arrangement for the entire housing of the computer
 (Frozen)

WARNING

Group [G06F 2200/1633](#) is no longer used for the classification of documents as of January 1, 2025.

The content of this group is being reclassified into groups [A45C 11/003](#), [G06F 1/1629](#), [G06F 1/1656](#) and [H04M 1/0203](#).

All groups listed in this Warning should be considered in order to perform a complete search.

Project: Unknown (G06K)

- U G06K 19/00 **Record carriers for use with machines and with at least a part designed to carry digital markings**

- U G06K 19/06 • characterised by the kind of the digital marking, e.g. shape, nature, code

- U G06K 19/067 • • Record carriers with conductive marks, printed circuits or semiconductor circuit elements, e.g. credit or identity cards {also with resonating or responding marks without active components}

- U G06K 19/07 • • • with integrated circuit chips

- U G06K 19/077 • • • Constructional details, e.g. mounting of circuits in the carrier

- U G06K 19/07749 {the record carrier being capable of non-contact communication, e.g. constructional details of the antenna of a non-contact smart card}
- U G06K 19/07758 {arrangements for adhering the record carrier to further objects or living beings, functioning as an identification tag}
- M G06K 19/07764 {the adhering arrangement making the record carrier attachable to a ~~tire~~tyre (tire temperature or pressur control arrangements, see B60C 23/00)tyre temperature or pressure control arrangements, see B60C 23/00)}

Project: RP11977-F (G06T)**U G06T 2211/00 Image generation**

M G06T 2211/40 . Computed tomography

WARNING

Group G06T 2211/40 is impacted by reclassification into groups G06T 2211/441, G06T 2211/444, G06T 2211/448, G06T 2211/452, G06T 2211/456, G06T 2211/461 and G06T 2211/464.

All groups listed in this Warning should be considered in order to perform a complete search.

M G06T 2211/441 . . AI-based methods, deep learning or artificial neural networks

WARNING

Group G06T 2211/441 is incomplete pending reclassification of documents from group G06T 2211/40.

Groups G06T 2211/40 and G06T 2211/441 should be considered in order to perform a complete search.

M G06T 2211/444 . . Low dose acquisition or reduction of radiation dose

WARNING

Group G06T 2211/444 is incomplete pending reclassification of documents from group G06T 2211/40.

Groups G06T 2211/40 and G06T 2211/444 should be considered in order to perform a complete search.

M G06T 2211/448 . . involving metal artefacts, streaking artefacts, beam hardening or photon starvation

WARNING

Group G06T 2211/448 is incomplete pending reclassification of documents from group G06T 2211/40.

Groups G06T 2211/40 and G06T 2211/448 should be considered in order to perform a complete search.

M G06T 2211/452 . . involving suppression of scattered radiation or scatter correction

WARNING

Group G06T 2211/452 is incomplete pending reclassification of documents from group G06T 2211/40.

Groups G06T 2211/40 and G06T 2211/452 should be considered in order to perform a complete search.

M G06T 2211/456 . . Optical coherence tomography [OCT]

WARNING

Group G06T 2211/456 is incomplete pending reclassification of documents from group G06T 2211/40.

Groups G06T 2211/40 and G06T 2211/456 should be considered in order to perform a complete search.

- M G06T 2211/461
- Phase contrast imaging or dark field imaging

WARNING

Group G06T 2211/461 is incomplete pending reclassification of documents from group G06T 2211/40.

Groups G06T 2211/40 and G06T 2211/461 should be considered in order to perform a complete search.

- M G06T 2211/464
- Dual or multimodal imaging, i.e. combining two or more imaging modalities

WARNING

Group G06T 2211/464 is incomplete pending reclassification of documents from group G06T 2211/40.

Groups G06T 2211/40 and G06T 2211/464 should be considered in order to perform a complete search.

Project: MP12337 (G07D)

- U G07D 11/00 **Devices accepting coins; Devices accepting, dispensing, sorting or counting valuable papers**
- U G07D 11/20
- Controlling or monitoring the operation of devices; Data handling
- M G07D 11/24
- Managing the **stock inventory** of valuable papers

Project: Unknown (G08C)

- U G08C 19/00 **Electric signal transmission systems (G08C 17/00 takes precedence)**
- M G08C 19/12
- in which the signal transmitted is frequency or phase of **aeAC**
- U G08C 19/38
- using dynamo-electric devices (operated by pulses [G08C 19/20](#))
- U G08C 19/46
- of which both rotor and stator carry windings (having squirrel-cage rotor [G08C 19/40](#))
- M G08C 19/48
- being the type with a three-phase stator and a rotor fed by constant-frequency **aeAC**, e.g. selsyn, mag slip

Project: RP12334 (G08G)

- C G08G 5/00 **Traffic control systems for aircraft ~~{, e.g. air-traffic control [ATC]}~~**

NOTES

1. This groups covers arrangements, located in the aircraft or on the ground, for controlling aircraft within a traffic environment.
2. This group does not cover arrangements for control of position, course, altitude or attitude of aircraft not specific to a traffic environment, e.g. automatic pilots, which are covered by group [G05D 1/00](#).
3. In this group the following term is used with the meaning indicated:
 - "traffic" includes traffic on the ground and in the air.
4. Attention is drawn to the following places which might be interesting for search:
 - mechanical aspects of equipment for fitting in or to aircraft [B64D](#)
 - combined instruments indicating more than one navigational value [G01C 23/00](#)

WARNING

Group [G08G 5/00](#) is impacted by reclassification into groups [G08G 5/50](#) and [G08G 5/90](#).

Groups [G08G 5/00](#), [G08G 5/50](#) and [G08G 5/90](#) should be considered in order to perform a complete search.

- D G08G 5/0004 • {Transmission of traffic-related information to or from an aircraft (airborne radio transmission systems in general H04B 7/185; airborne wireless networks H04W 84/06)}
- <administratively transferred to [G08G 5/20](#)>
- D G08G 5/0008 • • {with other aircraft}
- <administratively transferred to [G08G 5/25](#)>
- D G08G 5/0013 • • {with a ground station}
- <administratively transferred to [G08G 5/26](#)>
- D G08G 5/0017 • {Arrangements for implementing traffic-related aircraft activities, e.g. arrangements for generating, displaying, acquiring or managing traffic information (head-up displays G02B 27/01; ground or aircraft-carrier-deck installations B64F)}
- <administratively transferred to [G08G 5/20](#)>
- D G08G 5/0021 • • {located in the aircraft}
- <administratively transferred to [G08G 5/21](#)>
- D G08G 5/0026 • • {located on the ground}
- <administratively transferred to [G08G 5/22](#)>
- D G08G 5/003 • {Flight plan management}
- <administratively transferred to [G08G 5/30](#)>
- D G08G 5/0034 • • {Assembly of a flight plan}
- <administratively transferred to [G08G 5/32](#)>
- D G08G 5/0039 • • {Modification of a flight plan}
- <administratively transferred to [G08G 5/34](#)>
- D G08G 5/0043 • {Traffic management of multiple aircrafts from the ground (G08G 5/003 takes precedence; data processing specially designed for resource management, e.g. scheduling or allocating time, human or machine resources G06Q 10/06)}
- <administratively transferred to [G08G 5/56](#)>
- D G08G 5/0047 • {Navigation or guidance aids for a single aircraft (details of equipment G08G 5/0017)}
- <administratively transferred to [G08G 5/50](#) and [G08G 5/55](#) ADD>
- D G08G 5/0052 • • {for cruising (combined instruments indicating more than one navigational value G01C 23/00)}
- <administratively transferred to [G08G 5/53](#) and [G08G 5/55](#) ADD>
- D G08G 5/0056 • • {in an emergency situation, e.g. hijacking}
- <administratively transferred to [G08G 5/55](#) and [G08G 5/58](#) ADD>
- D G08G 5/006 • • {in accordance with predefined flight zones, e.g. to avoid prohibited zones}
- <administratively transferred to [G08G 5/55](#) and [G08G 5/59](#) ADD>
- D G08G 5/0065 • • {for taking-off}
- <administratively transferred to [G08G 5/52](#) and [G08G 5/55](#) ADD>
- D G08G 5/0069 • • {specially adapted for an unmanned aircraft}
- <administratively transferred to [G08G 5/55](#) and [G08G 5/57](#) ADD>
- D G08G 5/0073 • {Surveillance aids (scene image recognition G06V 20/00)}
- <administratively transferred to [G08G 5/70](#)>
- D G08G 5/0078 • • {for monitoring traffic from the aircraft (radar or analogous systems specially adapted for traffic control G01S 13/91)}
- <administratively transferred to [G08G 5/723](#)>

- D G08G 5/0082
 - {for monitoring traffic from a ground station (radar or analogous systems specially adapted for traffic control G01S 13/91)}
 - <administratively transferred to [G08G 5/727](#)>
- D G08G 5/0086
 - {for monitoring terrain (radar or analogous systems specially adapted for terrain avoidance G01S 13/935)}
 - <administratively transferred to [G08G 5/74](#)>
- D G08G 5/0091
 - {for monitoring atmospheric conditions (radar or analogous systems specially adapted for meteorological use G01S 13/95; meteorology G01W)}
 - <administratively transferred to [G08G 5/76](#)>
- D G08G 5/0095
 - {Aspects of air-traffic control not provided for in the other subgroups of this main group}
 - <administratively transferred to [G08G 5/00](#)>
- D G08G 5/02
 - Automatic {approach or} landing aids, i.e. systems in which flight data of incoming planes are processed to provide landing data (landing aids fitted in or to aircraft B64D 45/04; visual or acoustic landing aids B64F 1/18)
 - <administratively transferred to [G08G 5/54](#)>
- D G08G 5/025
 - {Navigation or guidance aids (radar or analogous systems specially adapted for landing purposes G01S 13/913)}
 - <administratively transferred to [G08G 5/54](#)>
- D G08G 5/04
 - Anti-collision systems
 - <administratively transferred to [G08G 5/80](#)>
- D G08G 5/045
 - {Navigation or guidance aids, e.g. determination of anti-collision manoeuvres (radar or analogous systems specially adapted for anti-collision between aircraft G01S 13/933)}
 - <administratively transferred to [G08G 5/80](#)>
- D G08G 5/06
 - for control when on the ground
 - <administratively transferred to [G08G 5/51](#)>
- D G08G 5/065
 - {Navigation or guidance aids, e.g. for taxiing or rolling}
 - <administratively transferred to [G08G 5/51](#)>
- Q G08G 5/20
 - Arrangements for acquiring, generating, sharing or displaying traffic information (arrangements for monitoring traffic [G08G 5/72](#))

WARNING

Group [G08G 5/20](#) is impacted by reclassification into groups [G08G 5/23](#), [G08G 5/24](#) and [G08G 5/27](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N G08G 5/21
 - located onboard the aircraft
- N G08G 5/22
 - located on the ground
- N G08G 5/23
 - Details of user output interfaces, e.g. information presented

WARNING

Group [G08G 5/23](#) is incomplete pending reclassification of documents from group [G08G 5/20](#).

Groups [G08G 5/20](#) and [G08G 5/23](#) should be considered in order to perform a complete search.

- N G08G 5/24
- Details of user input interfaces, e.g. use of speech recognition or specific text formats
- WARNING
Group [G08G 5/24](#) is incomplete pending reclassification of documents from group [G08G 5/20](#).
Groups [G08G 5/20](#) and [G08G 5/24](#) should be considered in order to perform a complete search.
- N G08G 5/25
- Q G08G 5/26
- Transmission of traffic-related information between aircraft
 - Transmission of traffic-related information between aircraft and ground stations
- WARNING
Group [G08G 5/26](#) is impacted by reclassification into group [G08G 5/265](#).
Groups [G08G 5/26](#) and [G08G 5/265](#) should be considered in order to perform a complete search.
- N G08G 5/265
- for managing air traffic control [ATC] clearance
- WARNING
Group [G08G 5/265](#) is incomplete pending reclassification of documents from group [G08G 5/26](#).
Groups [G08G 5/26](#) and [G08G 5/265](#) should be considered in order to perform a complete search.
- N G08G 5/27
- for managing network coverage, e.g. ensuring transmission connections for UAVs
- WARNING
Group [G08G 5/27](#) is incomplete pending reclassification of documents from group [G08G 5/20](#).
Groups [G08G 5/20](#) and [G08G 5/27](#) should be considered in order to perform a complete search.
- Q G08G 5/30
- Flight plan management
- WARNING
Group [G08G 5/30](#) is impacted by reclassification into groups [G08G 5/36](#) and [G08G 5/38](#).
Groups [G08G 5/30](#), [G08G 5/36](#) and [G08G 5/38](#) should be considered in order to perform a complete search.
- N G08G 5/32
- N G08G 5/34
- N G08G 5/36
- for flight plan preparation
 - for flight plan modification
 - for identification of authorised pilots
- WARNING
Group [G08G 5/36](#) is incomplete pending reclassification of documents from group [G08G 5/30](#).
Groups [G08G 5/30](#) and [G08G 5/36](#) should be considered in order to perform a complete search.
- N G08G 5/38
- for identification of landing sites, e.g. of diversion airports
- WARNING
Group [G08G 5/38](#) is incomplete pending reclassification of documents from group [G08G 5/30](#).
Groups [G08G 5/30](#) and [G08G 5/38](#) should be considered in order to perform a complete search.

N G08G 5/50

- Navigation or guidance aids

NOTE

When classifying in this group, each aspect relating to flight phases should be classified in subgroups [G08G 5/51](#) - [G08G 5/54](#), whereas each aspect relating to the type of aircraft should be classified in subgroups [G08G 5/55](#) - [G08G 5/57](#).

WARNING

Group [G08G 5/50](#) is incomplete pending reclassification of documents from groups [G08G 5/00](#) and [G08G 5/56](#).

Groups [G08G 5/00](#), [G08G 5/56](#) and [G08G 5/50](#) should be considered in order to perform a complete search.

Q G08G 5/51

- for control when on the ground, e.g. taxiing or rolling

WARNING

Group [G08G 5/51](#) is incomplete pending reclassification of documents from group [G08G 5/56](#).

Group [G08G 5/51](#) is also impacted by reclassification into groups [G08G 5/55](#), [G08G 5/56](#) and [G08G 5/57](#).

All groups listed in this Warning should be considered in order to perform a complete search.

N G08G 5/52

- for take-off

WARNING

Group [G08G 5/52](#) is incomplete pending reclassification of documents from group [G08G 5/56](#).

Groups [G08G 5/56](#) and [G08G 5/52](#) should be considered in order to perform a complete search.

N G08G 5/53

- for cruising

WARNING

Group [G08G 5/53](#) is incomplete pending reclassification of documents from group [G08G 5/56](#).

Groups [G08G 5/56](#) and [G08G 5/53](#) should be considered in order to perform a complete search.

Q G08G 5/54

- for approach or landing

WARNING

Group [G08G 5/54](#) is incomplete pending reclassification of documents from group [G08G 5/56](#).

Group [G08G 5/54](#) is also impacted by reclassification into groups [G08G 5/55](#), [G08G 5/56](#) and [G08G 5/57](#).

All groups listed in this Warning should be considered in order to perform a complete search.

N G08G 5/55

- for a single aircraft

WARNING

Group [G08G 5/55](#) is incomplete pending reclassification of documents from groups [G08G 5/51](#) and [G08G 5/54](#).

Groups [G08G 5/51](#), [G08G 5/54](#) and [G08G 5/55](#) should be considered in order to perform a complete search.

Q G08G 5/56

- for two or more aircraft

WARNING

Group [G08G 5/56](#) is incomplete pending reclassification of documents from groups [G08G 5/51](#) and [G08G 5/54](#).

Group [G08G 5/56](#) is also impacted by reclassification into groups [G08G 5/50](#), [G08G 5/51](#), [G08G 5/52](#), [G08G 5/53](#), [G08G 5/54](#), [G08G 5/57](#), [G08G 5/58](#) and [G08G 5/59](#).

All groups listed in this Warning should be considered in order to perform a complete search.

N G08G 5/57

- for unmanned aircraft

WARNING

Group [G08G 5/57](#) is incomplete pending reclassification of documents from groups [G08G 5/51](#), [G08G 5/54](#) and [G08G 5/56](#).

All groups listed in this Warning should be considered in order to perform a complete search.

N G08G 5/58

- for emergency situations, e.g. hijacking or bird strikes

WARNING

Group [G08G 5/58](#) is incomplete pending reclassification of documents from group [G08G 5/56](#).

Groups [G08G 5/56](#) and [G08G 5/58](#) should be considered in order to perform a complete search.

N G08G 5/59

- in accordance with predefined flight zones, e.g. to avoid prohibited zones

WARNING

Group [G08G 5/59](#) is incomplete pending reclassification of documents from group [G08G 5/56](#).

Groups [G08G 5/56](#) and [G08G 5/59](#) should be considered in order to perform a complete search.

Q G08G 5/70

- Arrangements for monitoring traffic-related situations or conditions

WARNING

Group [G08G 5/70](#) is impacted by reclassification into groups [G08G 5/72](#) and [G08G 5/78](#).

Groups [G08G 5/70](#), [G08G 5/72](#) and [G08G 5/78](#) should be considered in order to perform a complete search.

N G08G 5/72

- for monitoring traffic

WARNING

Group [G08G 5/72](#) is incomplete pending reclassification of documents from group [G08G 5/70](#).

Groups [G08G 5/70](#) and [G08G 5/72](#) should be considered in order to perform a complete search.

N G08G 5/723

- {from the aircraft}

N G08G 5/727

- {from a ground station}

N G08G 5/74

- for monitoring terrain

Q G08G 5/76

- for monitoring atmospheric conditions

WARNING

Group [G08G 5/76](#) is impacted by reclassification into group [G08G 5/78](#).

Groups [G08G 5/76](#) and [G08G 5/78](#) should be considered in order to perform a complete search.

N G08G 5/78

- for monitoring wake turbulence

WARNING

Group [G08G 5/78](#) is incomplete pending reclassification of documents from groups [G08G 5/70](#) and [G08G 5/76](#).

Groups [G08G 5/70](#), [G08G 5/76](#) and [G08G 5/78](#) should be considered in order to perform a complete search.

N G08G 5/80

- Anti-collision systems

N G08G 5/90

- specially adapted for urban air mobility [UAM]

WARNING

Group [G08G 5/90](#) is incomplete pending reclassification of documents from group [G08G 5/00](#).

Groups [G08G 5/00](#) and [G08G 5/90](#) should be considered in order to perform a complete search.

Project: RP0320-F (G11B)

U G11B 5/00

Recording by magnetisation or demagnetisation of a record carrier; Reproducing by magnetic means; Record carriers therefor ([G11B 11/00](#) {and [G11B 13/00](#)} take precedence)

NOTE

Subgroups [G11B 5/02](#) - [G11B 5/86](#) take precedence over subgroups [G11B 5/004](#) - [G11B 5/016](#)

U G11B 5/62

- Record carriers characterised by the selection of the material

NOTE

This group does not cover compositions, materials or processes, per se, which are covered by the relevant subclasses of section [B](#) or [C](#).

M G11B 5/64

- comprising only the magnetic material without bonding agent

WARNING

Group G11B 5/64 is impacted by reclassification into groups G11B 5/657 - G11B 5/658 and G11B 5/672 - G11B 5/678.

All groups listed in this Warning should be considered in order to perform a complete search.

M G11B 5/65

- characterised by its composition ([G11B 5/66](#) takes precedence)

WARNING

Group G11B 5/65 is impacted by reclassification into groups G11B 5/657 - G11B 5/658.

All groups listed in this Warning should be considered in order to perform a complete search.

M G11B 5/653

- {containing Fe or Ni (containing Co [G11B 5/656](#); containing inorganic, non-oxide compounds of Si, N, P, B, H or C [G11B 5/657](#); containing oxygen [G11B 5/658](#))}

WARNING

Group G11B 5/653 is impacted by reclassification into groups G11B 5/657 - G11B 5/658.

All groups listed in this Warning should be considered in order to perform a complete search.

M G11B 5/656

- {containing Co (containing inorganic, non-oxide compounds of Si, N, P, B, H or C [G11B 5/657](#); containing oxygen [G11B 5/658](#))}

WARNING

Group G11B 5/656 is impacted by reclassification into groups G11B 5/657 - G11B 5/658.

All groups listed in this Warning should be considered in order to perform a complete search.

- M G11B 5/657 • • • {containing inorganic, non-oxide compound of Si, N, P, B, H or C, e.g. in metal alloy or compound (containing oxygen [G11B 5/658](#))}

WARNING

Group G11B 5/657 is incomplete pending reclassification of documents from groups G11B 5/64 and G11B 5/65 – G11B 5/656.

All groups listed in this Warning should be considered in order to perform a complete search.

- M G11B 5/658 • • • {containing oxygen, e.g. molecular oxygen or magnetic oxide}

WARNING

Group G11B 5/658 is incomplete pending reclassification of documents from groups G11B 5/64 and G11B 5/65 – G11B 5/656.

All groups listed in this Warning should be considered in order to perform a complete search.

- M G11B 5/66 • • • the record carriers consisting of several layers

WARNING

Group G11B 5/66 is impacted by reclassification into groups G11B 5/672 – G11B 5/678.

All groups listed in this Warning should be considered in order to perform a complete search.

- M G11B 5/667 • • • including a soft magnetic layer

WARNING

Group G11B 5/667 is impacted by reclassification into groups G11B 5/672 – G11B 5/678.

All groups listed in this Warning should be considered in order to perform a complete search.

- M G11B 5/672 • • • {having different compositions in a plurality of magnetic layers, e.g. layer compositions having differing elemental components or differing proportions of elements}

WARNING

Group G11B 5/672 is incomplete pending reclassification of documents from groups G11B 5/64 and G11B 5/66 – G11B 5/667.

All groups listed in this Warning should be considered in order to perform a complete search.

- M G11B 5/674 • • • {having differing macroscopic or microscopic structures, e.g. differing crystalline lattices, varying atomic structures or differing roughnesses}

WARNING

Group G11B 5/674 is incomplete pending reclassification of documents from groups G11B 5/64 and G11B 5/66 – G11B 5/667.

All groups listed in this Warning should be considered in order to perform a complete search.

- M G11B 5/676 • • • {having magnetic layers separated by a nonmagnetic layer, e.g. antiferromagnetic layer, Cu layer or coupling layer}

WARNING

Group G11B 5/676 is incomplete pending reclassification of documents from groups G11B 5/64 and G11B 5/66 – G11B 5/667.

All groups listed in this Warning should be considered in order to perform a complete search.

M G11B 5/678 {having three or more magnetic layers}

WARNING

Group G11B 5/678 is incomplete pending reclassification of documents from groups G11B 5/64 and G11B 5/66 -- G11B 5/667.

All groups listed in this Warning should be considered in order to perform a complete search.

Project: RP12465 (G11C)

U G11C 5/00 Details of stores covered by group [G11C 11/00](#)

U G11C 5/02 . Disposition of storage elements, e.g. in the form of a matrix array

M G11C 5/025 . . {Geometric lay-out considerations of storage- and peripheral-blocks in a semiconductor storage device (~~geometrical lay-out of the components in integrated circuits, H01L 27/0207~~ *geometrical lay-out of the components in integrated circuits, geometrical lay-out of the components in integrated circuits H10D 89/10*)}

Project: RP12333 (H01C)

M H01C 7/00 Non-adjustable resistors formed as one or more layers or coatings; Non-adjustable resistors made from powdered conducting material or powdered semi-conducting material with or without insulating material (consisting of loose powdered or granular material [H01C 8/00](#); ~~resistors having potential barriers, e.g. field-effect resistors, H01L 29/00; semiconductor devices sensitive to electromagnetic or corpuscular radiation, e.g. photoresistors, H01L 31/00; resistors having potential barriers, e.g. field-effect resistors, H10D 1/40 - H10D 1/43, H10K 10/10; semiconductor devices sensitive to electromagnetic or corpuscular radiation, e.g. photoresistors, H10F 30/00;~~ magnetic field controlled resistors [H10N 50/10](#); bulk negative resistance effect devices [H10N 80/00](#))

Project: RP12465 (H01F)

U H01F 10/00 Thin magnetic films, e.g. of one-domain structure (magnetic record carriers [G11B 5/00](#); thin-film magnetic stores [G11C](#))

U H01F 10/32 . Spin-exchange-coupled multilayers, e.g. nanostructured superlattices {(applying spin-exchange-coupled multilayers to substrates [H01F 41/302](#))}

M H01F 10/3213 . . {Exchange coupling of magnetic semiconductor multilayers, e.g. MnSe/ZnSe superlattices (~~semiconductor materials for use in semiconductor devices H01L 29/12~~)}

M H01F 17/00 Fixed inductances of the signal type {(coils in general [H01F 5/00](#); ~~inductors without a potential-jump or surface barrier specially adapted for integrated circuits, details thereof and multistep manufacturing processes therefor H01L 28/10~~)}

Project: Unknown (H01F)

U H01F 38/00 Adaptations of transformers or inductances for specific applications or functions

U H01F 38/20 . Instruments transformers

M H01F 38/22 . . for single phase ~~ae~~AC

M H01F 38/38 . . for polyphase ~~ae~~AC

M H01F 38/40 . . for ~~de~~DC

Project: RP12465 (H01G)

M H01G CAPACITORS; CAPACITORS, RECTIFIERS, DETECTORS, SWITCHING DEVICES, LIGHT-SENSITIVE OR TEMPERATURE-SENSITIVE DEVICES OF THE ELECTROLYTIC TYPE (selection of specified materials as dielectric [H01B 3/00](#); ~~capacitors having potential barriers H01L 29/00~~; ~~capacitors having potential barriers H10D 1/62, H10K 10/10~~)

NOTE

In this subclass, group [H01G 11/00](#) takes precedence over groups [H01G 4/00](#) and [H01G 9/00](#).

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

U H01G 4/00 Fixed capacitors; Processes of their manufacture (electrolytic capacitors [H01G 9/00](#))

M H01G 4/33

- ~~Thin- or thick-film capacitors {(thin- or thick-film circuits; Thin- or thick-film capacitors { capacitors without a potential-jump or surface barrier specially adapted for integrated circuits, details thereof, multistep manufacturing processes therefor}} (thin- or thick-film circuits H01L 27/00; capacitors without a potential-jump or surface barrier specially adapted for integrated circuits, details thereof, multistep manufacturing processes therefor H01L 28/40)}~~

Project: Unknown (H01H)

U H01H 7/00 Devices for introducing a predetermined time delay between the initiation of the switching operation and the opening or closing of the contacts (time or time-programme switches [H01H 43/00](#))

M H01H 7/16

- Devices for ensuring operation of the switch at a predetermined point in the ~~ae~~**AC** cycle (circuit arrangements [H01H 9/56](#))

U H01H 9/00 Details of switching devices, not covered by groups [H01H 1/00](#) - [H01H 7/00](#)

U H01H 9/54

- Circuit arrangements not adapted to a particular application of the switching device and for which no provision exists elsewhere

M H01H 9/56

- • for ensuring operation of the switch at a predetermined point in the ~~ae~~**AC** cycle

U H01H 33/00 High-tension or heavy-current switches with arc-extinguishing or arc-preventing means

U H01H 33/02

- Details

M H01H 33/44

- • Devices for ensuring operation of the switch at a predetermined point in the ~~ae~~**AC** cycle (circuit arrangements [H01H 33/59](#))

M H01H 33/59

- • Circuit arrangements not adapted to a particular application of the switch and not otherwise provided for, e.g. for ensuring operation of the switch at a predetermined point in the ~~ae~~**AC** cycle

M H01H 33/593

- • • {for ensuring operation of the switch at a predetermined point of the ~~ae~~**AC** cycle (for multipolar switches [H01H 9/563](#))}

M H01H 33/596

- • • {for interrupting ~~de~~**DC**}

U H01H 51/00 Electromagnetic relays (relays using the dynamo-electric effect [H01H 53/00](#))

M H01H 51/30

- specially adapted for actuation by ~~ae~~**AC**

Project: MP12266 (H01H)

U H01H 71/00 Details of the protective switches or relays covered by groups [H01H 73/00](#) - [H01H 83/00](#)

- U H01H 71/10 • Operating or release mechanisms
- U H01H 71/12 • • Automatic release mechanisms with or without manual release
- U H01H 71/14 • • • Electrothermal mechanisms {(combined with a electro-thermal time delay relay [H01H 61/002](#))}
- U H01H 71/16 • • • • with bimetal element {(combined with detection of imbalance of two or more currents [H01H 83/223](#))}

Project: Unknown (H01H)

- U H01H 83/00 **Protective switches, e.g. circuit-breaking switches, or protective relays operated by abnormal electrical conditions otherwise than solely by excess current**
- M H01H 83/08 • operated by reversal of ~~de~~DC

Project: MP12266 (H01H)

- U H01H 89/00 **Combinations of two or more different basic types of electric switches, relays, selectors and emergency protective devices, not covered by any single one of the other main groups of this subclass**
- M H01H 2089/005 • {Multi-purpose combinations, e.g. LS/DI, LS/FI, of normal protective circuit breakers with known other forms of protection, e.g. earthfaults, differential, ~~unbalance~~*imbalance*}

Project: RP12465, RP12333 (H01L)

- M H01L **SEMICONDUCTOR DEVICES NOT COVERED BY CLASS [H10](#) (use of semiconductor devices for measuring [G01](#); resistors in general [H01C](#); magnets, inductors or transformers [H01F](#); capacitors in general [H01G](#); electrolytic devices [H01G 9/00](#); batteries or accumulators [H01M](#); waveguides, resonators or lines of the waveguide type [H01P](#); line connectors or current collectors [H01R](#); stimulated-emission devices [H01S](#); electromechanical resonators [H03H](#); loudspeakers, microphones, gramophone pick-ups or like acoustic electromechanical transducers [H04R](#); electric light sources in general [H05B](#); printed circuits, hybrid circuits, casings or constructional details of electrical apparatus, manufacture of assemblages of electrical components [H05K](#); use of semiconductor devices in circuits having a particular application, see the subclass for the application)**

NOTES

1. This subclass is residual to class [H10](#).
2. This subclass covers:
 - a. semiconductor devices for rectifying, amplifying, oscillating or switching; their constructional details or arrangements; their assemblies or integrated devices; their manufacture or treatment;
 - b. semiconductor devices sensitive to radiation; their constructional details or arrangements; their assemblies or integrated devices; their manufacture or treatment;
 - c. semiconductor devices for light emission; their constructional details or arrangements; their assemblies or integrated devices; their manufacture or treatment;
 - d. processes or apparatus for the manufacture or treatment of semiconductor or solid-state devices where the type of device is not listed under bullets a to c, above, or not essential;
 - e. constructional details or arrangements of semiconductor or solid-state devices not covered by class [H10](#) and not specific to types of devices listed under bullets a to c, above;

f. packaging or assembling of semiconductor or solid-state devices covered by this subclass or by class [H10](#).

3. In this subclass, the following terms or expressions are used with the meaning indicated:

- "wafer" means a slice of semiconductor or crystalline substrate material, which can be modified by impurity diffusion (doping), ion implantation or epitaxy, and whose active surface can be processed into arrays of discrete components or integrated circuits;
- "solid state body" means the body of material within which, or at the surface of which, the physical effects characteristic of the device occur;
- "electrode" is a region in or on the body of the device (other than the solid state body itself), which exerts an electrical influence on the solid state body, irrespective of whether or not an external electrical connection is made thereto. An electrode may include several portions and the term includes metallic regions which exert influence on the solid state body through an insulating region (e.g. capacitive coupling) and inductive coupling arrangements to the body. The dielectric region in a capacitive arrangement is regarded as part of the electrode. In arrangements including several portions, only those portions which exert an influence on the solid state body by virtue of their shape, size, or disposition or the material of which they are formed are considered to be part of the electrode. The other portions are considered to be "arrangements for conducting electric current to or from the solid state body" or "interconnections between solid state components formed in or on a common substrate", i.e. leads;
- "device" means an electric circuit element; where an electric circuit element is one of a plurality of elements formed in or on a common substrate; it is referred to as a "component";
- "complete device" is a device in its fully assembled state which may or may not require further treatment, e.g. electroforming, before it is ready for use but which does not require the addition of further structural units;
- "parts" includes all structural units which are included in a complete device;
- "container" is an enclosure forming part of the complete device and is essentially a solid construction in which the body of the device is placed, or which is formed around the body without forming an intimate layer thereon. An enclosure which consists of one or more layers formed on the body and in intimate contact therewith is referred to as an "encapsulation";
- "integrated circuit" is a device where all components, e.g. diodes or resistors, are built up on a common substrate and form the device including interconnections between the components;
- "assembly" of a device is the building up of the device from its constructional units; the term covers the provision of fillings in containers.

4. In this subclass, both the process or apparatus for the manufacture or treatment of a device and the device itself are classified, whenever both of these are described sufficiently to be of interest.

5. Attention is drawn to Note (3) after the title of section [C](#), which Note indicates to which version of the Periodic Table of chemical elements the CPC refers. In this subclass, the system used is the 8 group system, indicated by Roman numerals in the Periodic Table thereunder.

WARNINGS

1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:

H01L 21/203	covered by	H01L 21/02631
H01L 21/205	covered by	H01L 21/0262
H01L 21/208	covered by	H01L 21/02623
H01L 21/301	covered by	H01L 21/30
H01L 21/328	covered by	H01L 29/66075

H01L 21/329	covered by	H01L 29/66083
H01L 21/33	covered by	H01L 29/66227
H01L 21/331	covered by	H01L 29/66234
H01L 21/332	covered by	H01L 29/66363
H01L 21/334	covered by	H01L 29/66075
H01L 21/335	covered by	H01L 29/66409
H01L 21/336	covered by	H01L 29/66477
H01L 21/337	covered by	H01L 29/66893
H01L 21/338	covered by	H01L 29/66848
H01L 21/339	covered by	H01L 29/66946
H01L 21/36 - H01L 21/368	covered by	H01L 21/02107
H01L 21/58	covered by	H01L 24/80
H01L 21/66	covered by	H01L 22/00
H01L 21/98	covered by	H01L 25/50
H01L 29/38	covered by	H01L 29/04 - H01L 29/365
H01L 29/96	covered by	H01L 29/68 - H01L 29/945

2. {In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.}

3. *Due to the ongoing developments in class [H10](#) and related subclasses, the information displayed in notes, references and definitions of this subclass may not be entirely accurate. For each specific subject matter referred to in this subclass, users are invited to consult the relevant place in class [H10](#) and to consider the class [H10](#) information as correct, in case of conflict.*

Project: RP12333 (H01L)

M H01L 21/00

Processes or apparatus adapted for the manufacture or treatment of semiconductor or solid state devices or of parts thereof

NOTE

{Due to the ongoing developments in class [H10](#) and related subclasses, the information displayed in notes, references and definitions of this main group and indents may not be entirely accurate. For each specific subject matter referred to in this main group and indents, users are invited to consult the relevant place in class [H10](#) and to consider the class [H10](#) information as correct, in case of conflict}

Project: RP12465 (H01L)

U H01L 21/02

• Manufacture or treatment of semiconductor devices or of parts thereof

M H01L 21/02104

• {Forming layers (deposition in general [C23C](#); crystal growth in general [C30B](#))}

WARNING

Groups H01L 21/02104 – H01L 21/02694 are incomplete pending reclassification of documents from groups H01L 21/06, H01L 21/16, and H01L 21/20.

Groups H01L 21/02104 – H01L 21/02694, H01L 21/06, H01L 21/20, and H01L 21/16 should be considered in order to perform a complete search.

M H01L 21/02107

• • {Forming insulating materials on a substrate}

WARNING

Groups H01L 21/02107 – H01L 21/02326 are incomplete pending reclassification of documents from groups H01L 21/312, H01L 21/314, H01L 21/316, and H01L 21/318.

Groups H01L 21/02107 – H01L 21/02326, H01L 21/312, H01L 21/314, H01L 21/316, and H01L 21/318 should be considered in order to perform a complete search.

Project: RP12333 (H01L)

- M H01L 21/02365 . . . {Forming inorganic semiconducting materials on a substrate ~~(for light-sensitive devices H01L 31/00)~~}

Project: RP12465 (H01L)

- U H01L 21/04 . . the devices having potential barriers, e.g. a PN junction, depletion layer or carrier concentration layer

- M H01L 21/0405 . . . {the devices having semiconductor bodies comprising semiconducting carbon, e.g. diamond, diamond-like carbon ~~(multistep processes for the manufacture of said devices H01L 29/66015)~~}

NOTE

This group covers passivation

- M H01L 21/0445 . . . {the devices having semiconductor bodies comprising crystalline silicon carbide ~~(multistep processes for the manufacture of said devices H01L 29/66053)~~}

- D H01L 21/06 . . . the devices having semiconductor bodies comprising selenium or tellurium in uncombined form other than as impurities in semiconductor bodies of other materials

<administratively transferred to [H10D 48/04](#)>

- D H01L 21/08 . . . Preparation of the foundation plate

<administratively transferred to [H10D 48/042](#)>

- D H01L 21/10 . . . Preliminary treatment of the selenium or tellurium, its application to the foundation plate, or the subsequent treatment of the combination

<administratively transferred to [H10D 48/043](#)>

- D H01L 21/101 . . . {Application of the selenium or tellurium to the foundation plate}

<administratively transferred to [H10D 48/0431](#)>

- D H01L 21/103 . . . Conversion of the selenium or tellurium to the conductive state

<administratively transferred to [H10D 48/044](#)>

- D H01L 21/105 . . . Treatment of the surface of the selenium or tellurium layer after having been made conductive

<administratively transferred to [H10D 48/045](#)>

- D H01L 21/108 . . . Provision of discrete insulating layers, i.e. non-genetic barrier layers

<administratively transferred to [H10D 48/046](#)>

- D H01L 21/12 . . . Application of an electrode to the exposed surface of the selenium or tellurium after the selenium or tellurium has been applied to the foundation plate

<administratively transferred to [H10D 48/047](#)>

- D H01L 21/14 . . . Treatment of the complete device, e.g. by electroforming to form a barrier

<administratively transferred to [H10D 48/048](#)>

- D H01L 21/145 . . . Ageing

<administratively transferred to [H10D 48/049](#)>

- D H01L 21/16
 - • • the devices having semiconductor bodies comprising cuprous oxide or cuprous iodide
 - <administratively transferred to [H10D 48/07](#)>
- D H01L 21/161
 - • • • {Preparation of the foundation plate, preliminary treatment oxidation of the foundation plate, reduction treatment}
 - <administratively transferred to [H10D 48/071](#)>
- D H01L 21/162
 - • • • • {Preliminary treatment of the foundation plate}
 - <administratively transferred to [H10D 48/073](#)>
- D H01L 21/164
 - • • • • {Oxidation and subsequent heat treatment of the foundation plate (H01L 21/165 takes precedence)}
 - <administratively transferred to [H10D 48/074](#)>
- D H01L 21/165
 - • • • • {Reduction of the copper oxide, treatment of the oxide layer}
 - <administratively transferred to [H10D 48/075](#)>
- D H01L 21/167
 - • • • • {Application of a non-genetic conductive layer}
 - <administratively transferred to [H10D 48/076](#)>
- D H01L 21/168
 - • • • • {Treatment of the complete device, e.g. electroforming, ageing}
 - <administratively transferred to [H10D 48/078](#)>
- U H01L 21/18
 - • • the devices having semiconductor bodies comprising elements of Group IV of the Periodic Table or $A_{III}B_V$ compounds with or without impurities, e.g. doping materials {([H01L 21/041](#) - [H01L 21/0425](#), [H01L 21/045](#) - [H01L 21/048](#) take precedence)}

NOTE

This group covers also processes and apparatus which, by using the appropriate technology, are clearly suitable for manufacture or treatment of devices whose bodies comprise elements of Group IV of the Periodic Table or $A_{III}B_V$ compounds, even if the material used is not explicitly specified.

- M H01L 21/28
 - • • • Manufacture of electrodes on semiconductor bodies using processes or apparatus not provided for in groups [H01L 21/20](#) - [H01L 21/268](#) ~~{etching for patterning the electrodes H01L 21/311, H01L 21/3213; multistep manufacturing processes for data storage electrodes H01L 29/4011}~~
- M H01L 21/34
 - • • the devices having semiconductor bodies not provided for in groups ~~{H01L 21/0405, H01L 21/0445}~~, [H01L 21/06](#), [H01L 21/16](#) and [H01L 21/18](#), [H10D 48/04](#) and [H10D 48/07](#), with or without impurities, e.g. doping materials
- M H01L 21/48
 - • • Manufacture or treatment of parts, e.g. containers, prior to assembly of the devices, using processes not provided for in a single one of the ~~subgroups~~ [groups H01L 21/06](#) [H01L 21/18](#) - [H01L 21/326](#) or [H10D 48/04](#) - [H10D 48/07](#)

NOTE

In this group, the expression "treatment" covers also the removal of leads from parts

- M H01L 21/50
 - • • Assembly of semiconductor devices using processes or apparatus not provided for in a single one of the ~~subgroups~~ [groups H01L 21/06](#) [H01L 21/18](#) - [H01L 21/326](#); or [H10D 48/04](#) - [H10D 48/07](#) {e.g. sealing of a cap to a base of a container}

NOTE

Arrangements for connecting or disconnecting semiconductor or other solid state bodies, or methods related thereto, other than those arrangements or methods covered by the following subgroups, are covered by [H01L 24/00](#)

Project: RP12333 (H01L)

- M H01L 21/64
- Manufacture or treatment of solid state devices other than semiconductor devices, or of parts thereof, not peculiar to a single device provided for in ~~groups subclasses H01L 31/00–H10F, H10H, H10K 99/00 H10K or H10N~~

Project: RP12465 (H01L)

- U H01L 21/70
- Manufacture or treatment of devices consisting of a plurality of solid state components formed in or on a common substrate or of parts thereof; Manufacture of integrated circuit devices or of parts thereof ({multistep manufacturing processes of assemblies consisting of a plurality of individual semiconductor or other solid state devices [H01L 25/00](#); } manufacture of assemblies consisting of preformed electrical components [H05K 3/00](#), [H05K 13/00](#))
- U H01L 21/71
- • Manufacture of specific parts of devices defined in group [H01L 21/70](#) ({[H01L 21/0405](#), [H01L 21/0445](#)}, [H01L 21/28](#), [H01L 21/44](#), [H01L 21/48](#) take precedence)
- U H01L 21/76
- • • Making of isolation regions between components
- U H01L 21/762
- • • • Dielectric regions {, e.g. EPIC dielectric isolation, LOCOS; Trench refilling techniques, SOI technology, use of channel stoppers}
- M H01L 21/7624
- • • • {using semiconductor on insulator [SOI] technology (~~H01L 21/76297 takes precedence; manufacture of integrated circuits on insulating substrates H01L 21/84; silicon on sapphire [SOS] technology H01L 21/86~~)}
- U H01L 21/768
- • • Applying interconnections to be used for carrying current between separate components within a device {comprising conductors and dielectrics}

NOTE

Groups [H01L 21/768](#) - [H01L 21/76898](#) cover multi-step processes for manufacturing interconnections. Information peculiar to single-step processes should also be classified in the corresponding group, e.g.

- cleaning [H01L 21/02041](#)
- etching [H01L 21/311](#), [H01L 21/3213](#)
- masking [H01L 21/027](#), [H01L 21/033](#), [H01L 21/31144](#), [H01L 21/32139](#)
- planarizing [H01L 21/3105](#), [H01L 21/321](#)

- M H01L 21/76897
- • • {Formation of self-aligned vias or contact plugs, i.e. involving a lithographically uncritical step (~~self-aligned silicidation on field effect transistors H01L 29/665~~)}

Project: RP12333 (H01L)

- M H01L 21/77
- • Manufacture or treatment of devices consisting of a plurality of solid state components or integrated circuits formed in, or on, a common substrate (~~electrically programmable read-only memories or multistep manufacturing processes therefor H10B 69/00 manufacture or treatment of electronic memory devices H10B~~)

NOTE

Integration processes for the manufacture of devices of the type classified in H01L 27/14, H01L 27/15, H10N 19/00, H10N 39/00, H10N 59/00, H10N 79/00, H10N 89/00, H10K 19/00, H10K 39/00, H10K 59/00 and H10K 65/00 are not classified in this group and its sub-groups. Instead, as they are peculiar to said devices, they are classified together with the devices. Multistep processes for manufacturing memory structures in general using field-effect technology are covered by H10B 99/00; Multistep processes for manufacturing dynamic random access memory structures are covered by H10B 12/01; Multistep processes for manufacturing static random access

memory structures are covered by H10B 10/00; Multistep processes for manufacturing read-only memory structures are covered by H10B 20/00; Multistep processes for manufacturing electrically programmable read-only memory structures are covered by H10B 69/00

Project: RP12465 (H01L)

- D H01L 2021/775 . . . {comprising a plurality of TFTs on a non-semiconducting substrate, e.g. driving circuits for AMLCDs}
<administratively transferred to [H10D 86/021](#)>
- U H01L 21/78 . . . with subsequent division of the substrate into plural individual devices (cutting to change the surface-physical characteristics or shape of semiconductor bodies [H01L 21/304](#))
- D H01L 21/782 . . . to produce devices, each consisting of a single circuit element (H01L 21/82 takes precedence)
<administratively transferred to [H10D 89/011](#)>
- D H01L 21/784 the substrate being a semiconductor body
<administratively transferred to [H10D 89/013](#)>
- D H01L 21/786 the substrate being other than a semiconductor body, e.g. insulating body
<administratively transferred to [H10D 89/015](#)>
- D H01L 21/82 to produce devices, e.g. integrated circuits, each consisting of a plurality of components
<administratively transferred to [H10D 84/01](#)>
- D H01L 21/8206 {the substrate being a semiconductor, using diamond technology (H01L 21/8258 takes precedence)}
<administratively transferred to [H10D 84/032](#)>
- D H01L 21/8213 {the substrate being a semiconductor, using SiC technology (H01L 21/8258 takes precedence)}
<administratively transferred to [H10D 84/035](#)>
- D H01L 21/822 the substrate being a semiconductor, using silicon technology (H01L 21/8258 takes precedence)
<administratively transferred to [H10D 84/038](#)>
- D H01L 21/8221 {Three dimensional integrated circuits stacked in different levels}
<administratively transferred to [H10D 84/038](#) and [H10D 88/01](#)>
- D H01L 21/8222 Bipolar technology
<administratively transferred to [H10D 84/0112](#) and [H10D 84/038](#)>
- D H01L 21/8224 comprising a combination of vertical and lateral transistors
<administratively transferred to [H10D 84/0114](#) and [H10D 84/038](#)>
- D H01L 21/8226 comprising merged transistor logic or integrated injection logic
<administratively transferred to [H10D 84/0116](#) and [H10D 84/038](#)>
- D H01L 21/8228 Complementary devices, e.g. complementary transistors
<administratively transferred to [H10D 84/0119](#) and [H10D 84/038](#)>
- D H01L 21/82285 {Complementary vertical transistors}
<administratively transferred to [H10D 84/0121](#) and [H10D 84/038](#)>
- D H01L 21/8232 Field-effect technology
<administratively transferred to [H10D 84/0123](#) and [H10D 84/038](#)>

- D H01L 21/8234 MIS technology {, i.e. integration processes of field-effect transistors of the conductor-insulator-semiconductor type}
<administratively transferred to [H10D 84/0126](#) and [H10D 84/038](#)>
- D H01L 21/823406 {Combination of charge-coupled devices, i.e. CCD, or BBD}
<administratively transferred to [H10D 84/0198](#) and [H10D 84/038](#)>
- D H01L 21/823412 {with a particular manufacturing method of the channel structures, e.g. channel implants, halo or pocket implants, or channel materials}
<administratively transferred to [H10D 84/0128](#) and [H10D 84/038](#)>
- D H01L 21/823418 {with a particular manufacturing method of the source or drain structures, e.g. specific source or drain implants or silicided source or drain structures or raised source or drain structures}
<administratively transferred to [H10D 84/013](#) and [H10D 84/038](#)>
- D H01L 21/823425 {manufacturing common source or drain regions between a plurality of conductor-insulator-semiconductor structures}
<administratively transferred to [H10D 84/0133](#) and [H10D 84/038](#)>
- D H01L 21/823431 {with a particular manufacturing method of transistors with a horizontal current flow in a vertical sidewall of a semiconductor body, e.g. FinFET, MuGFET}
<administratively transferred to [H10D 84/0158](#) and [H10D 84/038](#)>
- D H01L 21/823437 {with a particular manufacturing method of the gate conductors, e.g. particular materials, shapes}
<administratively transferred to [H10D 84/0135](#) and [H10D 84/038](#)>
- D H01L 21/823443 {silicided or salicided gate conductors}
<administratively transferred to [H10D 84/0137](#) and [H10D 84/038](#)>
- D H01L 21/82345 {gate conductors with different gate conductor materials or different gate conductor implants, e.g. dual-gate structures}
<administratively transferred to [H10D 84/014](#) and [H10D 84/038](#)>
- D H01L 21/823456 {gate conductors with different shapes, lengths or dimensions}
<administratively transferred to [H10D 84/0142](#) and [H10D 84/038](#)>
- D H01L 21/823462 {with a particular manufacturing method of the gate-insulating layers, e.g. different gate-insulating layer thicknesses, particular gate insulator materials or particular gate insulator implants}
<administratively transferred to [H10D 84/0144](#) and [H10D 84/038](#)>
- D H01L 21/823468 {with a particular manufacturing method of the gate-sidewall spacers, e.g. double spacers, particular spacer material or shape}
<administratively transferred to [H10D 84/0147](#) and [H10D 84/038](#)>
- D H01L 21/823475 {interconnection or wiring or contact manufacturing related aspects}
<administratively transferred to [H10D 84/0149](#) and [H10D 84/038](#)>
- D H01L 21/823481 {isolation region manufacturing related aspects, e.g. to avoid interaction of isolation region with adjacent structure}
<administratively transferred to [H10D 84/0151](#) and [H10D 84/038](#)>

- D H01L 21/823487 {with a particular manufacturing method of vertical transistor structures, i.e. with channel vertical to the substrate surface (with a current flow parallel to the substrate surface H01L 21/823431)}
<administratively transferred to [H10D 84/016](#) and [H10D 84/038](#)>
- D H01L 21/823493 {with a particular manufacturing method of the wells or tubs, e.g. twin-tubs, high energy well implants, buried implanted layers for lateral isolation [BILLI]}
<administratively transferred to [H10D 84/0156](#) and [H10D 84/038](#)>
- D H01L 21/8236 Combination of enhancement and depletion transistors
<administratively transferred to [H10D 84/0163](#) and [H10D 84/038](#)>
- D H01L 21/8238 Complementary field-effect transistors, e.g. CMOS
<administratively transferred to [H10D 84/0165](#) and [H10D 84/038](#)>
- D H01L 21/823807 {with a particular manufacturing method of the channel structures, e.g. channel implants, halo or pocket implants, or channel materials}
<administratively transferred to [H10D 84/0167](#) and [H10D 84/038](#)>
- D H01L 21/823814 {with a particular manufacturing method of the source or drain structures, e.g. specific source or drain implants or silicided source or drain structures or raised source or drain structures}
<administratively transferred to [H10D 84/017](#) and [H10D 84/038](#)>
- D H01L 21/823821 {with a particular manufacturing method of transistors with a horizontal current flow in a vertical sidewall of a semiconductor body, e.g. FinFET, MuGFET}
<administratively transferred to [H10D 84/0193](#) and [H10D 84/038](#)>
- D H01L 21/823828 {with a particular manufacturing method of the gate conductors, e.g. particular materials, shapes}
<administratively transferred to [H10D 84/0172](#) and [H10D 84/038](#)>
- D H01L 21/823835 {silicided or salicided gate conductors}
<administratively transferred to [H10D 84/0174](#) and [H10D 84/038](#)>
- D H01L 21/823842 {gate conductors with different gate conductor materials or different gate conductor implants, e.g. dual gate structures}
<administratively transferred to [H10D 84/0177](#) and [H10D 84/038](#)>
- D H01L 21/82385 {gate conductors with different shapes, lengths or dimensions}
<administratively transferred to [H10D 84/0179](#) and [H10D 84/038](#)>
- D H01L 21/823857 {with a particular manufacturing method of the gate insulating layers, e.g. different gate insulating layer thicknesses, particular gate insulator materials or particular gate insulator implants}
<administratively transferred to [H10D 84/0181](#) and [H10D 84/038](#)>

- D H01L 21/823864 {with a particular manufacturing method of the gate sidewall spacers, e.g. double spacers, particular spacer material or shape}
<administratively transferred to [H10D 84/0184](#) and [H10D 84/038](#)>
- D H01L 21/823871 {interconnection or wiring or contact manufacturing related aspects}
<administratively transferred to [H10D 84/0186](#) and [H10D 84/038](#)>
- D H01L 21/823878 {isolation region manufacturing related aspects, e.g. to avoid interaction of isolation region with adjacent structure}
<administratively transferred to [H10D 84/0188](#) and [H10D 84/038](#)>
- D H01L 21/823885 {with a particular manufacturing method of vertical transistor structures, i.e. with channel vertical to the substrate surface (with a current flow parallel to the substrate surface H01L 21/823821)}
<administratively transferred to [H10D 84/0195](#) and [H10D 84/038](#)>
- D H01L 21/823892 {with a particular manufacturing method of the wells or tubs, e.g. twin tubs, high energy well implants, buried implanted layers for lateral isolation [BILLI]}
<administratively transferred to [H10D 84/0191](#) and [H10D 84/038](#)>
- D H01L 21/8248 Combination of bipolar and field-effect technology
<administratively transferred to [H10D 84/0107](#) and [H10D 84/038](#)>
- D H01L 21/8249 Bipolar and MOS technology
<administratively transferred to [H10D 84/0109](#) and [H10D 84/038](#)>
- D H01L 21/8252 the substrate being a semiconductor, using III-V technology (H01L 21/8258 takes precedence)
<administratively transferred to [H10D 84/05](#)>
- D H01L 21/8254 the substrate being a semiconductor, using II-VI technology (H01L 21/8258 takes precedence)
<administratively transferred to [H10D 84/07](#)>
- D H01L 21/8256 the substrate being a semiconductor, using technologies not covered by one of groups {H01L 21/8206, H01L 21/8213}, H01L 21/822, H01L 21/8252 and H01L 21/8254 (H01L 21/8258 takes precedence)
<administratively transferred to [H10D 84/02](#)>
- D H01L 21/8258 the substrate being a semiconductor, using a combination of technologies covered by {H01L 21/8206, H01L 21/8213}, H01L 21/822, H01L 21/8252, H01L 21/8254 or H01L 21/8256
<administratively transferred to [H10D 84/08](#)>
- D H01L 21/84 the substrate being other than a semiconductor body, e.g. being an insulating body
<administratively transferred to [H10D 86/01](#)>
- D H01L 21/845 {including field-effect transistors with a horizontal current flow in a vertical sidewall of a semiconductor body, e.g. FinFET, MuGFET}
<administratively transferred to [H10D 86/011](#)>

- D H01L 21/86 the insulating body being sapphire, e.g. silicon on sapphire structure, i.e. SOS
<administratively transferred to [H10D 86/03](#)>

Project: RP12333 (H01L)

H01L 23/00 Details of semiconductor or other solid state devices ([H01L 25/00](#) takes precedence {; structural arrangements for testing or measuring during manufacture or treatment, or for reliability measurements [H01L 22/00](#); arrangements for connecting or disconnecting semiconductor or solid-state bodies, or methods related thereto [H01L 24/00](#); finger print sensors [G06V 40/12](#)})

NOTE

This group does not cover:

- details of semiconductor bodies or of electrodes of devices provided for in [group subclass H01L 29/00 H10D](#), which details are covered by that group;
- details peculiar to devices provided for in a single [main group of groups subclass of subclasses H01L 31/00 H10F](#), [H01L 33/00 H10H](#), [H10K 30/00, H10K 50/00, or H10K 59/00 H10N](#), [H10K 71/00](#), [H10K 85/00, H10K 99/00, H10N 10/00, H10N 30/00, H10N 35/00, H10N 50/00, H10N 52/00, H10N 60/00](#), which details are covered by those [groups places](#).

Project: RP12465 (H01L)

- U H01L 23/48 . Arrangements for conducting electric current to or from the solid state body in operation, e.g. leads, terminal arrangements {; Selection of materials therefor}

NOTE

Arrangements for connecting or disconnecting semiconductor or other solid state bodies, or methods related thereto, other than those arrangements or methods covered by the following subgroups, are covered by [H01L 24/00](#)

- M H01L 23/482 . . consisting of lead-in layers inseparably applied to the semiconductor body {[\(electrodes\)](#)}~~{electrodes H01L 29/40}~~
- U H01L 23/488 . . consisting of soldered {or bonded} constructions {(bump connectors [H01L 24/01](#))}
- U H01L 23/495 . . . Lead-frames {or other flat leads ([H01L 23/498](#) takes precedence; lead frame interconnections between components [H01L 23/52](#))}
- U H01L 23/49541 {Geometry of the lead-frame}
- M H01L 23/49562 {for ~~devices being provided for in~~ [individual devices H01L 29/00 of subclass H10D](#)}
- U H01L 23/498 . . . Leads, {i.e. metallisations or lead-frames} on insulating substrates, {e.g. chip carriers (shape of the substrate [H01L 23/13](#))}
- U H01L 23/49838 {Geometry or layout}
- M H01L 23/49844 {for ~~devices being provided for in~~ [individual devices H01L 29/00 of subclass H10D](#)}
- U H01L 23/52 . Arrangements for conducting electric current within the device in operation from one component to another {, i.e. interconnections, e.g. wires, lead frames (optical interconnections [G02B 6/00](#))}
- U H01L 23/522 . . including external interconnections consisting of a multilayer structure of conductive and insulating layers inseparably formed on the semiconductor body
- M H01L 23/528 . . . {~~Geometry or~~ [Layout](#) of the interconnection structure - ~~{(H01L 27/0207 takes precedence; algorithms G06F 30/00)}~~

Project: RP12333 (H01L)**H01L 24/00****{Arrangements for connecting or disconnecting semiconductor or solid-state bodies; Methods or apparatus related thereto}**NOTES1. This group does not cover:

- details of semiconductor bodies or of electrodes of devices provided for in group subclass H01L 29/00 H10D, which details are covered by that group;
- details peculiar to devices provided for in a single main-group-of groups subclass of subclasses H01L 31/00 H10F, H01L 33/00 H10H, H10K 30/00, H10K H10K 50/00, or H10K 59/00 H10N, H10K 71/00, H10K 85/00, H10K 99/00, H10N 10/00, H10N 30/00, H10N 35/00, H10N 50/00, H10N 52/00, H10N 60/00, which details are covered by those groups places.
- printed circuits, which are covered by groups H05K 1/00 - H05K 1/189;
- apparatus or manufacturing processes for printed circuits, which are covered by groups H05K 3/00 - H05K 3/4685;
- manufacture or treatment of parts, which are covered by group H01L 21/48 and subgroups except H01L 21/4885 - H01L 21/4896;
- assemblies of semiconductor devices, which are covered by groups H01L 21/50 - H01L 21/568;
- applying interconnections to be used for carrying current between separate components within a device, which is covered by group H01L 21/768 and subgroups;
- containers or seals, which are covered by groups H01L 23/02 - H01L 23/10;
- mountings, which are covered by groups H01L 23/12 - H01L 23/15 and subgroups;
- arrangements for cooling, heating, ventilating or temperature compensation, which are covered by groups H01L 23/34 - H01L 23/4735;
- arrangements for conducting electric current, which are covered by groups H01L 23/48 - H01L 23/50, and by groups H01L 23/52 - H01L 23/5389;
- structural electrical arrangements, which are covered by groups H01L 23/58 - H01L 23/66;
- assemblies of semiconductor or other solid state devices, which are covered by groups H01L 25/00 - H01L 25/18.

2. In this group the following indexing codes are used : H01L 24/00, H01L 2224/00, H01L 2924/00, and subgroups thereof**M H01L 25/00**

~~Assemblies consisting of a plurality of individual semiconductor or other solid state devices {-; Multistep manufacturing processes thereof}~~ Assemblies consisting of a plurality of semiconductor or other solid state devices (devices consisting of a plurality of solid state components formed in or on a common substrate H01L 27/00; photovoltaic modules or arrays of photovoltaic cells H01L 31/042 {-; panels or arrays of photo-electrochemical cells H01G 9/2068} devices consisting of a plurality of solid-state components formed in or on a common substrate H10D 89/00; photovoltaic modules or arrays of photovoltaic cells H10F 19/00)

NOTE~~{This group does not cover:~~

- ~~-assemblies of electronic memory devices only, which are covered by H10B 80/00;~~
- ~~assemblies of organic devices only, which are covered by groups H10K 19/00, H10K 39/00, H10K 59/00 or H10K 65/00;~~
- ~~assemblies of electric solid-state devices only, which are covered by groups H10N 19/00, H10N 39/00, H10N 59/00, H10N 69/00, H10N 79/00 or H10N 89/00.~~

}

{Due to the ongoing developments in class H10 and related subclasses, the information displayed in notes, references and definitions of this main group and indents may not be entirely accurate. For each specific subject matter referred to in this main group and indents, users are invited to consult the relevant place in class H10 and to consider the class H10 information as correct, in case of conflict}

Project: RP12457 (H01L)

- M H01L 25/03
- all the devices being of a type provided for in ~~the same subgroup of groups H01L 27/00 - H01L 33/00~~, or in a single subclass of *subclasses H10B, H10F, H10H, H10K, or H10N*, e.g. assemblies of rectifier diodes

Project: RP12333 (H01L)

- U H01L 25/04
- the devices not having separate containers
- WARNING
Group [H01L 25/04](#) is impacted by reclassification into groups [H10N 19/00](#), [H10N 39/00](#), [H10N 59/00](#), [H10N 69/00](#), [H10N 79/00](#) and [H10N 89/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- M H01L 25/041
- {the devices being of a type provided for in ~~group subclass H01L 31/00~~*H10F*}
- M H01L 25/042
- {the devices being arranged next to each other (~~solar cells H01L 31/042~~*solar cells H10F 19/00*)}

Project: RP12465 (H01L)

- M H01L 25/065
- the devices being of a type provided for in group ~~H01L 27/00~~*H10D 89/00*
- NOTE
Group [H01L 25/0652](#) takes precedence over groups [H01L 25/0655](#) and [H01L 25/0657](#)
- WARNING
Group [H01L 25/065](#) is impacted by reclassification into groups [H10B 80/00](#), [H10K 39/10](#), [H10K 39/12](#), [H10K 39/15](#), [H10K 39/18](#), [H10K 39/601](#), [H10K 39/621](#), [H10K 59/90](#), [H10K 59/95](#), [H10N 19/00](#), [H10N 39/00](#), [H10N 59/00](#), [H10N 69/00](#), [H10N 79/00](#) and [H10N 89/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- M H01L 25/07
- the devices being of a type provided for in group ~~H01L 29/00~~*subclass H10D*
- NOTE
Group [H01L 25/071](#) takes precedence over groups [H01L 25/072](#) - [H01L 25/074](#)

Project: RP12457 (H01L)

- M H01L 25/075
- the devices being of a type provided for in group ~~H01L 33/00~~*H10H 20/00*

Project: RP12465 (H01L)

- U H01L 25/10
- the devices having separate containers

- M H01L 25/105
- • {the devices being ~~of a type provided for in group~~ *integrated devices of H01L 27/00* *class H10*}
- NOTE
When classifying in group [H01L 25/105](#), details of the assemblies are to be further indexed by using the indexing codes chosen from [H01L 2225/1005](#) and subgroups
- M H01L 25/11
- • the devices being of a type provided for in ~~group~~ *subclass H01L 29/00* *H10D*
- NOTE
Group [H01L 25/112](#) takes precedence over groups [H01L 25/115](#) and [H01L 25/117](#)

Project: RP12457 (H01L)

- M H01L 25/13
- • the devices being of a type provided for in group ~~H01L 33/00~~ *H10H 20/00*
- M H01L 25/16
- the devices being of types provided for in two or more different ~~main groups of groups subclasses of H01L 27/00 – H01L 33/00~~ *H10B*, ~~or in a single subclass of H10D, H10F, H10H, H10K, or H10N~~, e.g. forming hybrid circuits
- WARNING
Group [H01L 25/16](#) is impacted by reclassification into groups [H10B 80/00](#), [H10K 39/10](#), [H10K 39/12](#), [H10K 39/15](#), [H10K 39/18](#), [H10K 39/601](#), [H10K 39/621](#), [H10K 59/90](#), [H10K 59/95](#), [H10N 19/00](#), [H10N 39/00](#), [H10N 59/00](#), [H10N 69/00](#), [H10N 79/00](#) and [H10N 89/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- M H01L 25/18
- the devices being of *the* types provided for in two or more different ~~subgroups~~ *main groups* of the same ~~main group of groups~~ *subclass of H10B*, *H10D*, ~~H01L 27/00 – H10F, H10H, H01L 33/00, or in a single subclass of H10K, or H10N~~
- WARNING
Group [H01L 25/18](#) is impacted by reclassification into groups [H10B 80/00](#), [H10K 19/00](#), [H10K 39/10](#), [H10K 39/12](#), [H10K 39/15](#), [H10K 39/18](#), [H10K 39/601](#), [H10K 39/621](#), [H10K 59/90](#), [H10K 59/95](#), [H10K 65/00](#), [H10N 19/00](#), [H10N 39/00](#), [H10N 59/00](#), [H10N 69/00](#), [H10N 79/00](#) and [H10N 89/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.

Project: RP12465 (H01L)

- M H01L 25/50
- {Multistep manufacturing processes of assemblies consisting of devices, ~~each device being of a type provided for in group~~ *the devices being individual devices of subclass H10D* ~~H01L 27/00 or or integrated devices of class H10~~ *H01L 29/00* ([H01L 21/50](#) takes precedence)}
- D H01L 27/00
- ~~Devices consisting of a plurality of semiconductor or other solid-state components formed in or on a common substrate (details thereof H01L 23/00, H01L 29/00 – H10K 10/00; assemblies consisting of a plurality of individual solid state devices H01L 25/00)~~
- NOTE
In this group the last place priority rule is applied, i.e. at each hierarchical level, in the absence of an indication to the contrary, classification is made in the last appropriate place.
- <administratively transferred to [H10D 99/00](#)>

- D H01L 27/01
- comprising only passive thin-film or thick-film elements formed on a common insulating substrate {(passive two-terminal components without a potential-jump or surface barrier for integrated circuits, details thereof and multistep manufacturing processes therefor H01L 28/00)}
- <administratively transferred to [H10D 86/85](#)>
- D H01L 27/013
- • {Thick-film circuits}
- <administratively transferred to [H10D 86/85](#)>
- D H01L 27/016
- • {Thin-film circuits}
- <administratively transferred to [H10D 86/85](#)>
- D H01L 27/02
- including semiconductor components specially adapted for rectifying, oscillating, amplifying or switching and having potential barriers; including integrated passive circuit elements having potential barriers
- <administratively transferred to [H10D 89/00](#)>
- D H01L 27/0203
- • {Particular design considerations for integrated circuits}
- <administratively transferred to [H10D 89/00](#)>
- D H01L 27/0207
- • • {Geometrical layout of the components, e.g. computer aided design; custom LSI, semi-custom LSI, standard cell technique}
- <administratively transferred to [H10D 89/10](#)>
- D H01L 27/0211
- • • • {adapted for requirements of temperature}
- <administratively transferred to [H10D 89/105](#)>
- D H01L 27/0214
- • • {for internal polarisation, e.g. I²L}
- <administratively transferred to [H10D 89/211](#)>
- D H01L 27/0218
- • • • {of field effect structures}
- <administratively transferred to [H10D 89/213](#)>
- D H01L 27/0222
- • • • • {Charge pumping, substrate bias generation structures}
- <administratively transferred to [H10D 89/215](#)>
- D H01L 27/0225
- • • • • {Charge injection in static induction transistor logic structures [SITL]}
- <administratively transferred to [H10D 89/217](#)>
- D H01L 27/0229
- • • • • {of bipolar structures}
- <administratively transferred to [H10D 89/311](#)>
- D H01L 27/0233
- • • • • {Integrated injection logic structures [I²L]}
- <administratively transferred to [H10D 84/65](#)>
- D H01L 27/0237
- • • • • • {using vertical injector structures}
- <administratively transferred to [H10D 84/652](#)>
- D H01L 27/024
- • • • • • {using field effect injector structures}
- <administratively transferred to [H10D 84/655](#)>
- D H01L 27/0244
- • • • • • {I²L structures integrated in combination with analog structures}
- <administratively transferred to [H10D 84/658](#)>
- D H01L 27/0248
- • • {for electrical or thermal protection, e.g. electrostatic discharge [ESD] protection}
- <administratively transferred to [H10D 89/60](#)>
- D H01L 27/0251
- • • • {for MOS devices}
- <administratively transferred to [H10D 89/601](#)>
- D H01L 27/0255
- • • • • {using diodes as protective elements}
- <administratively transferred to [H10D 89/611](#)>

- D H01L 27/0259 {using bipolar transistors as protective elements}
<administratively transferred to [H10D 89/711](#)>
- D H01L 27/0262 {including a PNP transistor and a NPN transistor, wherein each of said transistors has its base coupled to the collector of the other transistor, e.g. silicon controlled rectifier [SCR] devices}
<administratively transferred to [H10D 89/713](#)>
- D H01L 27/0266 {using field-effect transistors as protective elements}
<administratively transferred to [H10D 89/811](#)>
- D H01L 27/027 {specially adapted to provide an electrical current path other than the field-effect induced current path}
<administratively transferred to [H10D 89/813](#)>
- D H01L 27/0274 {involving a parasitic bipolar transistor triggered by the electrical biasing of the gate electrode of the field-effect transistor, e.g. gate coupled transistors}
<administratively transferred to [H10D 89/814](#)>
- D H01L 27/0277 {involving a parasitic bipolar transistor triggered by the local electrical biasing of the layer acting as base of said parasitic bipolar transistor}
<administratively transferred to [H10D 89/815](#)>
- D H01L 27/0281 {field-effect transistors in a "Darlington-like" configuration}
<administratively transferred to [H10D 89/817](#)>
- D H01L 27/0285 {bias arrangements for gate electrode of field-effect transistors, e.g. RC networks, voltage partitioning circuits (H01L 27/0281 takes precedence)}
<administratively transferred to [H10D 89/819](#)>
- D H01L 27/0288 {using passive elements as protective elements, e.g. resistors, capacitors, inductors, spark-gaps}
<administratively transferred to [H10D 89/911](#)>
- D H01L 27/0292 {using a specific configuration of the conducting means connecting the protective devices, e.g. ESD buses}
<administratively transferred to [H10D 89/921](#)>
- D H01L 27/0296 {involving a specific disposition of the protective devices}
<administratively transferred to [H10D 89/931](#)>
- D H01L 27/04 . . the substrate being a semiconductor body
<administratively transferred to [H10D 84/00](#)>
- D H01L 27/06 . . . including a plurality of individual components in a non-repetitive configuration
<administratively transferred to [H10D 84/00](#)>
- D H01L 27/0605 . . . {integrated circuits made of compound material, e.g. $A_{III}B_V$ }
<administratively transferred to [H10D 84/01](#)>
- D H01L 27/0611 . . . {integrated circuits having a two-dimensional layout of components without a common active region}
<administratively transferred to [H10D 84/00](#)>
- D H01L 27/0617 {comprising components of the field-effect type (H01L 27/0251 takes precedence)}
<administratively transferred to [H10D 84/40](#)>

- D H01L 27/0623 {in combination with bipolar transistors}
<administratively transferred to [H10D 84/401](#)>
- D H01L 27/0629 {in combination with diodes, or resistors, or capacitors}
<administratively transferred to [H10D 84/811](#)>
- D H01L 27/0635 {in combination with bipolar transistors and diodes, or resistors, or capacitors}
<administratively transferred to [H10D 84/403](#)>
- D H01L 27/0641 {without components of the field-effect type}
<administratively transferred to [H10D 84/60](#)>
- D H01L 27/0647 {Bipolar transistors in combination with diodes, or capacitors, or resistors, e.g. vertical bipolar transistor and bipolar lateral transistor and resistor}
<administratively transferred to [H10D 84/611](#)>
- D H01L 27/0652 {Vertical bipolar transistor in combination with diodes, or capacitors, or resistors}
<administratively transferred to [H10D 84/613](#)>
- D H01L 27/0658 {Vertical bipolar transistor in combination with resistors or capacitors}
<administratively transferred to [H10D 84/615](#)>
- D H01L 27/0664 {Vertical bipolar transistor in combination with diodes}
<administratively transferred to [H10D 84/617](#)>
- D H01L 27/067 {Lateral bipolar transistor in combination with diodes, or capacitors, or resistors}
<administratively transferred to [H10D 84/619](#)>
- D H01L 27/0676 {comprising combinations of diodes, or capacitors or resistors}
<administratively transferred to [H10D 84/204](#)>
- D H01L 27/0682 {comprising combinations of capacitors and resistors}
<administratively transferred to [H10D 84/206](#)>
- D H01L 27/0688 {Integrated circuits having a three-dimensional layout}
<administratively transferred to [H10D 88/00](#)>
- D H01L 27/0694 {comprising components formed on opposite sides of a semiconductor substrate}
<administratively transferred to [H10D 88/101](#)>
- D H01L 27/07 the components having an active region in common
<administratively transferred to [H10D 84/00](#)>
- D H01L 27/0705 {comprising components of the field effect type}
<administratively transferred to [H10D 84/401](#)>
- D H01L 27/0711 {in combination with bipolar transistors and diodes, or capacitors, or resistors}
<administratively transferred to [H10D 84/403](#)>
- D H01L 27/0716 {in combination with vertical bipolar transistors and diodes, or capacitors, or resistors}
<administratively transferred to [H10D 84/406](#)>
- D H01L 27/0722 {in combination with lateral bipolar transistors and diodes, or capacitors, or resistors}
<administratively transferred to [H10D 84/409](#)>

D	H01L 27/0727	. . . . . {in combination with diodes, or capacitors or resistors} <administratively transferred to H10D 84/811 >
D	H01L 27/0733	. . . . . {in combination with capacitors only} <administratively transferred to H10D 84/813 >
D	H01L 27/0738	. . . . . {in combination with resistors only} <administratively transferred to H10D 84/817 >
D	H01L 27/0744	. . . . . {without components of the field-effect type} <administratively transferred to H10D 84/60 >
D	H01L 27/075	. . . . . {Bipolar transistors in combination with diodes, or capacitors, or resistors, e.g. lateral bipolar transistor, and vertical bipolar transistor and resistor} <administratively transferred to H10D 84/611 >
D	H01L 27/0755	. . . . . {Vertical bipolar transistor in combination with diodes, or capacitors, or resistors} <administratively transferred to H10D 84/613 >
D	H01L 27/0761	. . . . . {Vertical bipolar transistor in combination with diodes only} <administratively transferred to H10D 84/617 >
D	H01L 27/0766	. . . . . {with Schottky diodes only} <administratively transferred to H10D 84/617 >
D	H01L 27/0772	. . . . . {Vertical bipolar transistor in combination with resistors only} <administratively transferred to H10D 84/615 >
D	H01L 27/0777	. . . . . {Vertical bipolar transistor in combination with capacitors only} <administratively transferred to H10D 84/615 >
D	H01L 27/0783	. . . . . {Lateral bipolar transistors in combination with diodes, or capacitors, or resistors} <administratively transferred to H10D 84/619 >
D	H01L 27/0788	. . . . . {comprising combinations of diodes or capacitors or resistors} <administratively transferred to H10D 84/204 >
D	H01L 27/0794	. . . . . {Combinations of capacitors and resistors} <administratively transferred to H10D 84/206 >
D	H01L 27/08	. . . including only semiconductor components of a single kind <administratively transferred to H10D 84/00 >
D	H01L 27/0802	. . . . {Resistors only} <administratively transferred to H10D 84/209 >
D	H01L 27/0805	. . . . {Capacitors only} <administratively transferred to H10D 84/212 >
D	H01L 27/0808	. . . . {Varactor diodes} <administratively transferred to H10D 84/215 >
D	H01L 27/0811	. . . . {MIS diodes} <administratively transferred to H10D 84/217 >
D	H01L 27/0814	. . . . {Diodes only} <administratively transferred to H10D 84/221 >
D	H01L 27/0817	. . . . {Thyristors only} <administratively transferred to H10D 84/676 >

- D H01L 27/082 including bipolar components only
<administratively transferred to [H10D 84/645](#)>
- D H01L 27/0821 {Combination of lateral and vertical transistors only}
<administratively transferred to [H10D 84/63](#)>
- D H01L 27/0823 {including vertical bipolar transistors only}
<administratively transferred to [H10D 84/641](#)>
- D H01L 27/0825 {Combination of vertical direct transistors of the same conductivity type having different characteristics, (e.g. Darlington transistors)}
<administratively transferred to [H10D 84/642](#)>
- D H01L 27/0826 {Combination of vertical complementary transistors}
<administratively transferred to [H10D 84/673](#)>
- D H01L 27/0828 {Combination of direct and inverse vertical transistors}
<administratively transferred to [H10D 84/643](#)>
- D H01L 27/085 including field-effect components only
<administratively transferred to [H10D 84/82](#)>
- D H01L 27/088 the components being field-effect transistors with insulated gate
<administratively transferred to [H10D 84/83](#)>
- D H01L 27/0883 {Combination of depletion and enhancement field effect transistors}
<administratively transferred to [H10D 84/84](#)>
- D H01L 27/0886 {including transistors with a horizontal current flow in a vertical sidewall of a semiconductor body, e.g. FinFET, MuGFET}
<administratively transferred to [H10D 84/834](#)>
- D H01L 27/092 complementary MIS field-effect transistors
<administratively transferred to [H10D 84/85](#)>
- D H01L 27/0921 {Means for preventing a bipolar, e.g. thyristor, action between the different transistor regions, e.g. Latchup prevention}
<administratively transferred to [H10D 84/854](#)>
- D H01L 27/0922 {Combination of complementary transistors having a different structure, e.g. stacked CMOS, high-voltage and low-voltage CMOS}
<administratively transferred to [H10D 84/856](#)>
- D H01L 27/0924 {including transistors with a horizontal current flow in a vertical sidewall of a semiconductor body, e.g. FinFET, MuGFET}
<administratively transferred to [H10D 84/853](#)>
- D H01L 27/0925 {comprising an N-well only in the substrate}
<administratively transferred to [H10D 84/857](#)>
- D H01L 27/0927 {comprising a P-well only in the substrate}
<administratively transferred to [H10D 84/858](#)>
- D H01L 27/0928 {comprising both N- and P- wells in the substrate, e.g. twin-tub}
<administratively transferred to [H10D 84/859](#)>
- D H01L 27/095 the components being Schottky barrier gate field-effect transistors
<administratively transferred to [H10D 84/86](#)>
- D H01L 27/098 the components being PN junction gate field-effect transistors
<administratively transferred to [H10D 84/87](#)>

- D H01L 27/10 . . . including a plurality of individual components in a repetitive configuration
WARNING
 Group H01L 27/10 is impacted by reclassification into group H10B 99/10.
 Groups H01L 27/10 and H10B 99/10 should be considered in order to perform a complete search.
 <administratively transferred to [H10D 84/00](#)>
- D H01L 27/101 . . . {including resistors or capacitors only}
WARNING
 Group H01L 27/101 is impacted by reclassification into group H10B 99/14.
 Groups H01L 27/101 and H10B 99/14 should be considered in order to perform a complete search.
 <administratively transferred to [H10D 84/206](#)>
- D H01L 27/102 . . . including bipolar components
WARNING
 Group H01L 27/102 is impacted by reclassification into group H10B 99/00.
 Groups H01L 27/102 and H10B 99/00 should be considered in order to perform a complete search.
 <administratively transferred to [H10D 84/00](#)>
- D H01L 27/1021 {including diodes only}
WARNING
 Group H01L 27/1021 is impacted by reclassification into group H10B 99/16.
 Groups H01L 27/1021 and H10B 99/16 should be considered in order to perform a complete search.
 <administratively transferred to [H10D 84/221](#)>
- D H01L 27/1022 {including bipolar transistors}
WARNING
 Group H01L 27/1022 is impacted by reclassification into group H10B 99/00.
 Groups H01L 27/1022 and H10B 99/00 should be considered in order to perform a complete search.
 <administratively transferred to [H10D 84/60](#)>
- D H01L 27/1027 {Thyristors}
WARNING
 Group H01L 27/1027 is impacted by reclassification into groups H10B 10/10, H10B 12/10, H10B 20/10, H10B 69/00 and H10B 99/20.
 All groups listed in this Warning should be considered in order to perform a complete search.
 <administratively transferred to [H10D 84/60](#)>
- D H01L 27/1028 {Double base diodes}
WARNING
 Group H01L 27/1028 is impacted by reclassification into groups H10B 10/10, H10B 12/10, H10B 20/10, H10B 69/00 and H10B 99/20.
 All groups listed in this Warning should be considered in order to perform a complete search.
 <administratively transferred to [H10D 84/00](#)>

- D H01L 27/105 including field-effect components
- NOTE
In this group and its subgroups classification is made in any appropriate place
- WARNING
Group H01L 27/105 is impacted by reclassification into group H10B 99/22.
Groups H01L 27/105 and H10B 99/22 should be considered in order to perform a complete search.
- <administratively transferred to [H10D 84/80](#)>
- D H01L 27/1055 {comprising charge coupled devices of the so-called bucket brigade type}
- <administratively transferred to [H10D 84/895](#)>
- D H01L 27/1057 {comprising charge coupled devices [CCD] or charge injection devices [CID]}
- <administratively transferred to [H10D 84/891](#)>
- D H01L 27/118 Masterslice integrated circuits
- <administratively transferred to [H10D 84/90](#)>
- D H01L 27/11801 {using bipolar technology}
- <administratively transferred to [H10D 84/901](#)>
- D H01L 27/11803 {using field effect technology}
- <administratively transferred to [H10D 84/903](#)>
- D H01L 2027/11805 {A3B5 or A3B6 gate arrays}
- <administratively transferred to [H10D 84/905](#)>
- D H01L 27/11807 {CMOS gate arrays}
- <administratively transferred to [H10D 84/907](#)>
- D H01L 2027/11809 {Microarchitecture}
- <administratively transferred to [H10D 84/909](#)>
- D H01L 2027/11811 {Basic cell P to N transistor count}
- <administratively transferred to [H10D 84/911](#)>
- D H01L 2027/11812 {4-T CMOS basic cell}
- <administratively transferred to [H10D 84/912](#)>
- D H01L 2027/11814 {5-T CMOS basic cell}
- <administratively transferred to [H10D 84/914](#)>
- D H01L 2027/11816 {6-T CMOS basic cell}
- <administratively transferred to [H10D 84/916](#)>
- D H01L 2027/11818 {7-T CMOS basic cell}
- <administratively transferred to [H10D 84/918](#)>
- D H01L 2027/1182 {8-T CMOS basic cell}
- <administratively transferred to [H10D 84/921](#)>
- D H01L 2027/11822 {relative P to N transistor sizes}
- <administratively transferred to [H10D 84/922](#)>
- D H01L 2027/11824 {for current drive capability}
- <administratively transferred to [H10D 84/924](#)>

D	H01L 2027/11825	. . . . . {for delay time adaptation}
		<administratively transferred to H10D 84/925 >
D	H01L 2027/11827	. . . . . {for capacitive loading}
		<administratively transferred to H10D 84/927 >
D	H01L 2027/11829	. . . . . {Isolation techniques}
		<administratively transferred to H10D 84/929 >
D	H01L 2027/11831	. . . . . {FET isolation}
		<administratively transferred to H10D 84/931 >
D	H01L 2027/11833	. . . . . {LOCOS}
		<administratively transferred to H10D 84/933 >
D	H01L 2027/11835	. . . . . {Degree of specialisation for implementing specific functions}
		<administratively transferred to H10D 84/935 >
D	H01L 2027/11837	. . . . . {Implementation of digital circuits}
		<administratively transferred to H10D 84/937 >
D	H01L 2027/11838	. . . . . {Implementation of memory functions}
		<administratively transferred to H10D 84/938 >
D	H01L 2027/1184	. . . . . {Implementation of analog circuits}
		<administratively transferred to H10D 84/941 >
D	H01L 2027/11842	. . . . . {Resistors and capacitors}
		<administratively transferred to H10D 84/942 >
D	H01L 2027/11844	. . . . . {Hybrid analog or digital}
		<administratively transferred to H10D 84/944 >
D	H01L 2027/11846	. . . . . {Embedded IO cells}
		<administratively transferred to H10D 84/946 >
D	H01L 2027/11848	. . . . . {Transmission gate}
		<administratively transferred to H10D 84/948 >
D	H01L 2027/1185	. . . . . {Porous cells, i.e. pass-through elements}
		<administratively transferred to H10D 84/949 >
D	H01L 2027/11851	. . . . . {Technology used, i.e. design rules}
		<administratively transferred to H10D 84/951 >
D	H01L 2027/11853	. . . . . {Sub-micron technology}
		<administratively transferred to H10D 84/953 >
D	H01L 2027/11855	. . . . . {Twin-tub technology}
		<administratively transferred to H10D 84/955 >
D	H01L 2027/11857	. . . . . {SOS, SOI technology}
		<administratively transferred to H10D 84/957 >
D	H01L 2027/11859	. . . . . {Connectibility characteristics, i.e. diffusion and polysilicon geometries}
		<administratively transferred to H10D 84/959 >
D	H01L 2027/11861	. . . . . {Substrate and well contacts}
		<administratively transferred to H10D 84/961 >
D	H01L 2027/11862	. . . . . {Horizontal or vertical grid line density}
		<administratively transferred to H10D 84/962 >

D	H01L 2027/11864	. . . . . {Yield or reliability}	<administratively transferred to H10D 84/964 >
D	H01L 2027/11866	. . . . . {Gate electrode terminals or contacts}	<administratively transferred to H10D 84/966 >
D	H01L 2027/11868	. . . . . {Macro-architecture}	<administratively transferred to H10D 84/968 >
D	H01L 2027/1187	. . . . . {Number of core or basic cells in the macro (RAM, ROM)}	<administratively transferred to H10D 84/971 >
D	H01L 2027/11872	. . . . . {Distribution function, e.g. Sea of Gates}	<administratively transferred to H10D 84/972 >
D	H01L 2027/11874	. . . . . {Layout specification, i.e. inner core region}	<administratively transferred to H10D 84/974 >
D	H01L 2027/11875	. . . . . {Wiring region, routing}	<administratively transferred to H10D 84/975 >
D	H01L 2027/11877	. . . . . {Avoiding clock skew or clock delay}	<administratively transferred to H10D 84/977 >
D	H01L 2027/11879	. . . . . {Data lines (buses)}	<administratively transferred to H10D 84/979 >
D	H01L 2027/11881	. . . . . {Power supply lines}	<administratively transferred to H10D 84/981 >
D	H01L 2027/11883	. . . . . {Levels of metallisation}	<administratively transferred to H10D 84/983 >
D	H01L 2027/11885	. . . . . {Two levels of metal}	<administratively transferred to H10D 84/985 >
D	H01L 2027/11887	. . . . . {Three levels of metal}	<administratively transferred to H10D 84/987 >
D	H01L 2027/11888	. . . . . {More than 3 levels of metal}	<administratively transferred to H10D 84/988 >
D	H01L 2027/1189	. . . . . {Latch-up prevention}	<administratively transferred to H10D 84/991 >
D	H01L 2027/11892	. . . . . {Noise prevention (crosstalk)}	<administratively transferred to H10D 84/992 >
D	H01L 2027/11894	. . . . . {Radiation hardened circuits}	<administratively transferred to H10D 84/994 >
D	H01L 27/11896	. . . . {using combined field-effect/bipolar technology}	<administratively transferred to H10D 84/996 >
D	H01L 27/11898	. . . . {Input and output buffer/driver structures}	<administratively transferred to H10D 84/998 >
D	H01L 27/12	. . the substrate being other than a semiconductor body, e.g. an insulating body	<administratively transferred to H10D 86/00 >
D	H01L 27/1203	. . . {the substrate comprising an insulating body on a semiconductor body, e.g. SOI (three-dimensional layout H01L 27/0688)}	<administratively transferred to H10D 86/201 >

- D H01L 27/1207 . . . {combined with devices in contact with the semiconductor body, i.e. bulk/SOI hybrid circuits}
<administratively transferred to [H10D 87/00](#)>
- D H01L 27/1211 . . . {combined with field-effect transistors with a horizontal current flow in a vertical sidewall of a semiconductor body, e.g. FinFET, MuGFET}
<administratively transferred to [H10D 86/215](#)>
- D H01L 27/1214 . . . {comprising a plurality of TFTs formed on a non-semiconducting substrate, e.g. driving circuits for AMLCDs}
WARNING
Group H01L 27/1218 – H01L 27/1296 are incomplete pending reclassification of documents from group H01L 27/1214.
Groups H01L 27/1218 – H01L 27/1296 and H01L 27/1214 should be considered in order to perform a complete search.
<administratively transferred to [H10D 86/40](#) and [H10D 86/60](#)>
- D H01L 27/1218 . . . {with a particular composition or structure of the substrate}
<administratively transferred to [H10D 86/411](#) and [H10D 86/60](#)>
- D H01L 27/1222 . . . {with a particular composition, shape or crystalline structure of the active layer}
<administratively transferred to [H10D 86/60](#) and [H10D 86/421](#)>
- D H01L 27/1225 . . . {with semiconductor materials not belonging to the group IV of the periodic table, e.g. InGaZnO}
<administratively transferred to [H10D 86/60](#) and [H10D 86/423](#)>
- D H01L 27/1229 . . . {with different crystal properties within a device or between different devices}
<administratively transferred to [H10D 86/425](#) and [H10D 86/60](#)>
- D H01L 27/1233 . . . {with different thicknesses of the active layer in different devices}
<administratively transferred to [H10D 86/427](#) and [H10D 86/60](#)>
- D H01L 27/1237 . . . {with a different composition, shape, layout or thickness of the gate insulator in different devices}
<administratively transferred to [H10D 86/431](#) and [H10D 86/60](#)>
- D H01L 27/124 . . . {with a particular composition, shape or layout of the wiring layers specially adapted to the circuit arrangement, e.g. scanning lines in LCD pixel circuits (wiring structures ~~per se~~ H01L 23/52)}
<administratively transferred to [H10D 86/441](#) and [H10D 86/60](#)>
- D H01L 27/1244 . . . {for preventing breakage, peeling or short-circuiting}
<administratively transferred to [H10D 86/443](#) and [H10D 86/60](#)>
- D H01L 27/1248 . . . {with a particular composition or shape of the interlayer dielectric specially adapted to the circuit arrangement}
<administratively transferred to [H10D 86/451](#) and [H10D 86/60](#)>
- D H01L 27/1251 . . . {comprising TFTs having a different architecture, e.g. top- and bottom gate TFTs}
<administratively transferred to [H10D 86/471](#) and [H10D 86/60](#)>
- D H01L 27/1255 . . . {integrated with passive devices, e.g. auxiliary capacitors}
<administratively transferred to [H10D 86/481](#) and [H10D 86/60](#)>
- D H01L 27/1259 . . . {Multistep manufacturing methods}
<administratively transferred to [H10D 86/021](#)>

- D H01L 27/1262 {with a particular formation, treatment or coating of the substrate}
<administratively transferred to [H10D 86/0212](#)>
- D H01L 27/1266 {the substrate on which the devices are formed not being the final device substrate, e.g. using a temporary substrate}
<administratively transferred to [H10D 86/0214](#)>
- D H01L 27/127 {with a particular formation, treatment or patterning of the active layer specially adapted to the circuit arrangement}
<administratively transferred to [H10D 86/0221](#)>
- D H01L 27/1274 {using crystallisation of amorphous semiconductor or recrystallisation of crystalline semiconductor}
<administratively transferred to [H10D 86/0223](#)>
- D H01L 27/1277 {using a crystallisation promoting species, e.g. local introduction of Ni catalyst}
<administratively transferred to [H10D 86/0225](#)>
- D H01L 27/1281 {by using structural features to control crystal growth, e.g. placement of grain filters}
<administratively transferred to [H10D 86/0227](#)>
- D H01L 27/1285 {using control of the annealing or irradiation parameters, e.g. using different scanning direction or intensity for different transistors}
<administratively transferred to [H10D 86/0229](#)>
- D H01L 27/1288 {employing particular masking sequences or specially adapted masks, e.g. half-tone mask}
<administratively transferred to [H10D 86/0231](#)>
- D H01L 27/1292 {using liquid deposition, e.g. printing}
<administratively transferred to [H10D 86/0241](#)>
- D H01L 27/1296 {adapted to increase the uniformity of device parameters}
<administratively transferred to [H10D 86/0251](#)>
- D H01L 27/13 . . . combined with thin-film or thick-film passive components
<administratively transferred to [H10D 86/80](#)>

Project: RP12333 (H01L)

- D H01L 27/14 . including semiconductor components sensitive to infrared radiation, light, electromagnetic radiation of shorter wavelength or corpuscular radiation and specially adapted either for the conversion of the energy of such radiation into electrical energy or for the control of electrical energy by such radiation (radiation-sensitive components structurally associated with one or more electric light sources only H01L 31/14; couplings of light guides with optoelectronic elements G02B 6/42)
<administratively transferred to [H10F 99/00](#)>
- D H01L 27/142 . . Energy conversion devices (photovoltaic modules or arrays of single photovoltaic cells comprising bypass diodes integrated or directly associated with the devices H01L 31/0443; photovoltaic modules composed of a plurality of thin film solar cells deposited on the same substrate H01L 31/046)
<administratively transferred to [H10F 19/50](#)>
- D H01L 27/1421 . . {comprising bypass diodes integrated or directly associated with the device, e.g. bypass diode integrated or formed in or on the same substrate as the solar cell}
<administratively transferred to [H10F 19/75](#)>

- | | | |
|---|---------------|--|
| D | H01L 27/144 | <ul style="list-style-type: none"> • • Devices controlled by radiation <p><administratively transferred to H10F 39/10></p> |
| D | H01L 27/1443 | <ul style="list-style-type: none"> • • • {with at least one potential jump or surface barrier} <p><administratively transferred to H10F 39/103></p> |
| D | H01L 27/1446 | <ul style="list-style-type: none"> • • • {in a repetitive configuration} <p><administratively transferred to H10F 39/107></p> |
| D | H01L 27/146 | <ul style="list-style-type: none"> • • • Imager structures <p><administratively transferred to H10F 39/12></p> |
| D | H01L 27/14601 | <ul style="list-style-type: none"> • • • • {Structural or functional details thereof} <p><administratively transferred to H10F 39/80></p> |
| D | H01L 27/14603 | <ul style="list-style-type: none"> • • • • • {Special geometry or disposition of pixel elements, address lines or gate electrodes} <p><administratively transferred to H10F 39/802></p> |
| D | H01L 27/14605 | <ul style="list-style-type: none"> • • • • • • {Structural or functional details relating to the position of the pixel elements, e.g. smaller pixel elements in the center of the imager compared to pixel elements at the periphery} <p><administratively transferred to H10F 39/8023></p> |
| D | H01L 27/14607 | <ul style="list-style-type: none"> • • • • • • {Geometry of the photosensitive area} <p><administratively transferred to H10F 39/8027></p> |
| D | H01L 27/14609 | <ul style="list-style-type: none"> • • • • • • {Pixel elements with integrated switching, control, storage or amplification elements (scanning details of imagers (circuitry of solid-state image sensors H04N 25/00); circuitry of imagers H04N 25/70)} <p><administratively transferred to H10F 39/803></p> |
| D | H01L 27/1461 | <ul style="list-style-type: none"> • • • • • • {characterised by the photosensitive area} <p><administratively transferred to H10F 39/8033></p> |
| D | H01L 27/14612 | <ul style="list-style-type: none"> • • • • • • {involving a transistor} <p><administratively transferred to H10F 39/8037></p> |
| D | H01L 27/14614 | <ul style="list-style-type: none"> • • • • • • • {having a special gate structure} <p><administratively transferred to H10F 39/80373></p> |
| D | H01L 27/14616 | <ul style="list-style-type: none"> • • • • • • • {characterised by the channel of the transistor, e.g. channel having a doping gradient} <p><administratively transferred to H10F 39/80377></p> |
| D | H01L 27/14618 | <ul style="list-style-type: none"> • • • • • {Containers} <p><administratively transferred to H10F 39/804></p> |
| D | H01L 27/1462 | <ul style="list-style-type: none"> • • • • • {Coatings} <p><administratively transferred to H10F 39/805></p> |
| D | H01L 27/14621 | <ul style="list-style-type: none"> • • • • • • {Colour filter arrangements} <p><administratively transferred to H10F 39/8053></p> |
| D | H01L 27/14623 | <ul style="list-style-type: none"> • • • • • • {Optical shielding} <p><administratively transferred to H10F 39/8057></p> |
| D | H01L 27/14625 | <ul style="list-style-type: none"> • • • • • • {Optical elements or arrangements associated with the device} <p><administratively transferred to H10F 39/806></p> |
| D | H01L 27/14627 | <ul style="list-style-type: none"> • • • • • • {Microlenses} <p><administratively transferred to H10F 39/8063></p> |

D	H01L 27/14629	. . . . . {Reflectors} <administratively transferred to H10F 39/8067 >
D	H01L 27/1463	. . . . . {Pixel isolation structures} <administratively transferred to H10F 39/807 >
D	H01L 27/14632	. . . . . {Wafer-level processed structures} <administratively transferred to H10F 39/026 >
D	H01L 27/14634	. . . . . {Assemblies, i.e. Hybrid structures} <administratively transferred to H10F 39/809 >
D	H01L 27/14636	. . . . . {Interconnect structures} <administratively transferred to H10F 39/811 >
D	H01L 27/14638	. . . . . {Structures specially adapted for transferring the charges across the imager perpendicular to the imaging plane} <administratively transferred to H10F 39/812 >
D	H01L 27/1464	. . . . . {Back illuminated imager structures} <administratively transferred to H10F 39/199 >
D	H01L 27/14641	. . . . . {Electronic components shared by two or more pixel elements, e.g. one amplifier shared by two pixel elements} <administratively transferred to H10F 39/813 >
D	H01L 27/14643	. . . . . {Photodiode arrays; MOS imagers} <administratively transferred to H10F 39/18 >
D	H01L 27/14645	. . . . . {Colour imagers} <administratively transferred to H10F 39/182 >
D	H01L 27/14647	. . . . . {Multicolour imagers having a stacked pixel-element structure, e.g. npn, npnpn or MQW elements} <administratively transferred to H10F 39/1825 >
D	H01L 27/14649	. . . . . {Infrared imagers} <administratively transferred to H10F 39/184 >
D	H01L 27/1465	. . . . . {of the hybrid type} <administratively transferred to H10F 39/1843 >
D	H01L 27/14652	. . . . . {Multispectral infrared imagers, having a stacked pixel-element structure, e.g. npn, npnpn or MQW structures} <administratively transferred to H10F 39/1847 >
D	H01L 27/14654	. . . . . {Blooming suppression} <administratively transferred to H10F 39/186 >
D	H01L 27/14656	. . . . . {Overflow drain structures} <administratively transferred to H10F 39/1865 >
D	H01L 27/14658	. . . . . {X-ray, gamma-ray or corpuscular radiation imagers (measuring X-, gamma- or corpuscular radiation G01T 1/00)} <administratively transferred to H10F 39/189 >
D	H01L 27/14659	. . . . . {Direct radiation imagers structures} <administratively transferred to H10F 39/1892 >
D	H01L 27/14661	. . . . . {of the hybrid type} <administratively transferred to H10F 39/1895 >

- D H01L 27/14663 {Indirect radiation imagers, e.g. using luminescent members}
<administratively transferred to [H10F 39/1898](#)>
- D H01L 27/14665 {Imagers using a photoconductor layer}
<administratively transferred to [H10F 39/191](#)>
- D H01L 27/14667 {Colour imagers}
<administratively transferred to [H10F 39/192](#)>
- D H01L 27/14669 {Infrared imagers}
<administratively transferred to [H10F 39/193](#)>
- D H01L 27/1467 {of the hybrid type}
<administratively transferred to [H10F 39/1935](#)>
- D H01L 27/14672 {Blooming suppression}
<administratively transferred to [H10F 39/194](#)>
- D H01L 27/14674 {Overflow drain structures}
<administratively transferred to [H10F 39/1945](#)>
- D H01L 27/14676 {X-ray, gamma-ray or corpuscular radiation imagers (measuring X-,
gamma- or corpuscular radiation G01T 1/00)}
<administratively transferred to [H10F 39/195](#)>
- D H01L 27/14678 {Contact-type imagers}
<administratively transferred to [H10F 39/198](#)>
- D H01L 27/14679 {Junction field effect transistor [JFET] imagers; static induction transistor
[SIT] imagers}
<administratively transferred to [H10F 39/196](#)>
- D H01L 27/14681 {Bipolar transistor imagers}
<administratively transferred to [H10F 39/197](#)>
- D H01L 27/14683 {Processes or apparatus peculiar to the manufacture or treatment of
these devices or parts thereof (not peculiar thereto H01L 21/00)}
<administratively transferred to [H10F 39/011](#)>
- D H01L 27/14685 {Process for coatings or optical elements}
<administratively transferred to [H10F 39/024](#)>
- D H01L 27/14687 {Wafer level processing}
<administratively transferred to [H10F 39/026](#)>
- D H01L 27/14689 {MOS based technologies}
<administratively transferred to [H10F 39/014](#)>
- D H01L 27/1469 {Assemblies, i.e. hybrid integration}
<administratively transferred to [H10F 39/018](#)>
- D H01L 27/14692 {Thin film technologies, e.g. amorphous, poly, micro- or nanocrystalline
silicon}
<administratively transferred to [H10F 39/016](#)>
- D H01L 27/14694 {The active layers comprising only $A_{III}B_V$ compounds, e.g. GaAs, InP}
<administratively transferred to [H10F 39/021](#)>
- D H01L 27/14696 {The active layers comprising only $A_{II}B_{VI}$ compounds, e.g. CdS, ZnS,
CdTe}
<administratively transferred to [H10F 39/022](#)>

- D H01L 27/14698 {Post-treatment for the devices, e.g. annealing, impurity-gettering, short-circuit elimination, recrystallisation}
<administratively transferred to [H10F 39/028](#)>
- D H01L 27/148 Charge coupled imagers {(individual charge coupled devices H01L 29/765)}
<administratively transferred to [H10F 39/15](#)>
- D H01L 27/14806 {Structural or functional details thereof}
<administratively transferred to [H10F 39/80](#)>
- D H01L 27/14812 {Special geometry or disposition of pixel elements, address lines or gate electrodes}
<administratively transferred to [H10F 39/151](#)>
- D H01L 27/14818 {Optical shielding}
<administratively transferred to [H10F 39/1515](#)>
- D H01L 27/14825 {Linear CCD imagers}
<administratively transferred to [H10F 39/152](#)>
- D H01L 27/14831 {Area CCD imagers}
<administratively transferred to [H10F 39/153](#)>
- D H01L 27/14837 {Frame-interline transfer}
<administratively transferred to [H10F 39/1532](#)>
- D H01L 27/14843 {Interline transfer}
<administratively transferred to [H10F 39/1534](#)>
- D H01L 27/1485 {Frame transfer}
<administratively transferred to [H10F 39/1536](#)>
- D H01L 27/14856 {Time-delay and integration}
<administratively transferred to [H10F 39/1538](#)>
- D H01L 27/14862 {CID imagers}
<administratively transferred to [H10F 39/154](#)>
- D H01L 27/14868 {CCD or CID colour imagers}
<administratively transferred to [H10F 39/156](#)>
- D H01L 27/14875 {Infrared CCD or CID imagers}
<administratively transferred to [H10F 39/157](#)>
- D H01L 27/14881 {of the hybrid type}
<administratively transferred to [H10F 39/1575](#)>
- D H01L 27/14887 {Blooming suppression}
<administratively transferred to [H10F 39/158](#)>
- D H01L 27/14893 {comprising a photoconductive layer deposited on the CCD structure}
<administratively transferred to [H10F 39/159](#)>

Project: RP12457 (H01L)

- D H01L 27/15 including semiconductor components having potential barriers, specially adapted for light emission
<administratively transferred to [H10H 29/10](#)>
- D H01L 27/153 {in a repetitive configuration, e.g. LED bars}
<administratively transferred to [H10H 29/14](#)>

- D H01L 27/156 • • • {two-dimensional-arrays}
 <administratively transferred to [H10H 29/142](#)>

Project: RP12465 (H01L)

- D H01L 28/00 **{Passive two-terminal components without a potential-jump or surface barrier for integrated circuits; Details thereof; Multistep manufacturing processes therefor (testing or measuring during manufacture H01L 22/00; integration methods H01L 21/70; integrated circuits H01L 27/00; two-terminal components with a potential-jump or surface barrier H01L 29/00; resistors in general H01C; inductors in general H01F; capacitors in general H01G)}**
 <administratively transferred to [H10D 1/00](#)>
- D H01L 28/10 • {Inductors}
 <administratively transferred to [H10D 1/20](#)>
- D H01L 28/20 • {Resistors}
 <administratively transferred to [H10D 1/47](#)>
- D H01L 28/22 • • {with an active material comprising carbon, e.g. diamond or diamond-like carbon {DLC}}
 <administratively transferred to [H10D 1/472](#)>
- D H01L 28/24 • • {with an active material comprising a refractory, transition or noble metal, metal compound or metal alloy, e.g. silicides, oxides, nitrides}
 <administratively transferred to [H10D 1/474](#)>
- D H01L 28/26 • • {with an active material comprising an organic conducting material, e.g. conducting polymers}
 <administratively transferred to [H10D 1/476](#)>
- D H01L 28/40 • {Capacitors}
 <administratively transferred to [H10D 1/68](#)>
- D H01L 28/55 • • {with a dielectric comprising a perovskite structure material}
 <administratively transferred to [H10D 1/682](#)>
- D H01L 28/56 • • • {the dielectric comprising two or more layers, e.g. comprising buffer layers, seed layers, gradient layers}
 <administratively transferred to [H10D 1/684](#)>
- D H01L 28/57 • • • {comprising a barrier layer to prevent diffusion of hydrogen or oxygen}
 <administratively transferred to [H10D 1/688](#)>
- D H01L 28/60 • • {Electrodes}
 <administratively transferred to [H10D 1/692](#)>
- D H01L 28/65 • • • {comprising a noble metal or a noble metal oxide, e.g. platinum (Pt), ruthenium (Ru), ruthenium dioxide (RuO₂), iridium (Ir), iridium dioxide (IrO₂)}
 <administratively transferred to [H10D 1/694](#)>
- D H01L 28/75 • • • {comprising two or more layers, e.g. comprising a barrier layer and a metal layer}
 <administratively transferred to [H10D 1/696](#)>
- D H01L 28/82 • • • {with an enlarged surface, e.g. formed by texturisation}
 <administratively transferred to [H10D 1/711](#)>
- D H01L 28/84 • • • • {being a rough surface, e.g. using hemispherical grains}
 <administratively transferred to [H10D 1/712](#)>

- D H01L 28/86 {having horizontal extensions}
<administratively transferred to [H10D 1/714](#)>
- D H01L 28/87 {made by depositing layers, e.g. by depositing alternating conductive and insulating layers}
<administratively transferred to [H10D 1/042](#) and [H10D 1/714](#)>
- D H01L 28/88 {made by patterning layers, e.g. by etching conductive layers}
<administratively transferred to [H10D 1/043](#) and [H10D 1/714](#)>
- D H01L 28/90 {having vertical extensions}
<administratively transferred to [H10D 1/716](#)>
- D H01L 28/91 {made by depositing layers, e.g. by depositing alternating conductive and insulating layers}
<administratively transferred to [H10D 1/042](#) and [H10D 1/716](#)>
- D H01L 28/92 {made by patterning layers, e.g. by etching conductive layers}
<administratively transferred to [H10D 1/043](#) and [H10D 1/716](#)>
- D H01L 29/00 **Semiconductor devices specially adapted for rectifying, amplifying, oscillating or switching and having potential barriers; Capacitors or resistors having potential barriers, e.g. a PN-junction depletion layer or carrier concentration layer; Details of semiconductor bodies or of electrodes thereof {-; Multistep manufacturing processes therefor} (H01L 31/00 - H01L 33/00, H10K 10/00, H10N take precedence; details other than of semiconductor bodies or of electrodes thereof H01L 23/00; devices consisting of a plurality of solid state components formed in or on a common substrate H01L 27/00)**
- NOTE
In this main group, classification is made both in groups H01L 29/02 - H01L 29/51 and in groups H01L 29/66 - H01L 29/94 if both of these sets of groups are relevant.
- <administratively transferred to [H10D 99/00](#)>**
- D H01L 29/02 . Semiconductor bodies {-; Multistep manufacturing processes therefor}
<administratively transferred to [H10D 62/00](#)>
- D H01L 29/04 . . characterised by their crystalline structure, e.g. polycrystalline, cubic or particular orientation of crystalline planes (characterised by physical imperfections H01L 29/30)
<administratively transferred to [H10D 62/40](#)>
- D H01L 29/045 . . . {by their particular orientation of crystalline planes}
<administratively transferred to [H10D 62/405](#)>
- D H01L 29/06 . . characterised by their shape; characterised by the shapes, relative sizes, or dispositions of the semiconductor regions {-; characterised by the concentration or distribution of impurities within semiconductor regions}
<administratively transferred to [H10D 62/10](#)>
- D H01L 29/0603 . . . {characterised by particular constructional design considerations, e.g. for preventing surface leakage, for controlling electric field concentration or for internal isolations regions (isolation regions between components H01L 21/76; design considerations for integrated circuits H01L 27/00; geometrical design considerations for devices H01L 29/0657)}
- <administratively transferred to [H10D 62/10](#)>
- D H01L 29/0607 {for preventing surface leakage or controlling electric field concentration}
<administratively transferred to [H10D 62/102](#)>

- D H01L 29/0611 {for increasing or controlling the breakdown voltage of reverse biased devices (H01L 29/0661 takes precedence)}
<administratively transferred to [H10D 62/103](#)>
- D H01L 29/0615 {by the doping profile or the shape or the arrangement of the PN junction, or with supplementary regions, e.g. junction termination extension [JTE] (LDD or drain offset regions H01L 29/7833)}
<administratively transferred to [H10D 62/105](#)>
- D H01L 29/0619 {with a supplementary region doped oppositely to or in rectifying contact with the semiconductor containing or contacting region, e.g. guard rings with PN or Schottky junction}
<administratively transferred to [H10D 62/106](#)>
- D H01L 29/0623 {Buried supplementary region, e.g. buried guard ring (multi-RESURF H01L 29/0634)}
<administratively transferred to [H10D 62/107](#)>
- D H01L 29/0626 {with a localised breakdown region, e.g. built-in avalanching region (in self-protected thyristors H01L 29/7424)}
<administratively transferred to [H10D 62/108](#)>
- D H01L 29/063 {Reduced surface field [RESURF] pn-junction structures}
<administratively transferred to [H10D 62/109](#)>
- D H01L 29/0634 {Multiple reduced surface field (multi-RESURF) structures, e.g. double RESURF, charge compensation, cool, superjunction (SJ), 3D-RESURF, composite buffer (CB) structures}
<administratively transferred to [H10D 62/111](#)>
- D H01L 29/0638 {for preventing surface leakage due to surface inversion layer, e.g. with channel stopper (channel stoppers in combination with isolation region for integrated circuits H01L 21/762)}
<administratively transferred to [H10D 62/112](#)>
- D H01L 29/0642 {Isolation within the component, i.e. internal isolation}
<administratively transferred to [H10D 62/113](#)>
- D H01L 29/0646 {PN junctions}
<administratively transferred to [H10D 62/114](#)>
- D H01L 29/0649 {Dielectric regions, e.g. SiO₂ regions, air gaps}
<administratively transferred to [H10D 62/115](#)>
- D H01L 29/0653 {adjoining the input or output region of a field-effect device, e.g. the source or drain region}
<administratively transferred to [H10D 62/116](#)>
- D H01L 29/0657 . . . {characterised by the shape of the body}
<administratively transferred to [H10D 62/117](#)>
- D H01L 29/0661 {specially adapted for altering the breakdown voltage by removing semiconductor material at, or in the neighbourhood of, a reverse biased junction, e.g. by bevelling, moat etching, depletion etching}
<administratively transferred to [H10D 62/104](#)>
- D H01L 29/0665 {the shape of the body defining a nanostructure (nanotechnology per se B82B)}
<administratively transferred to [H10D 62/118](#)>

- D H01L 29/0669 {Nanowires or nanotubes (carbon nanotubes as material of solid-state device active part H10K 85/211)}
<administratively transferred to [H10D 62/119](#)>
- D H01L 29/0673 {oriented parallel to a substrate}
<administratively transferred to [H10D 62/121](#)>
- D H01L 29/0676 {oriented perpendicular or at an angle to a substrate}
<administratively transferred to [H10D 62/122](#)>
- D H01L 29/068 {comprising a junction}
<administratively transferred to [H10D 62/123](#)>
- D H01L 29/0684 . . {characterised by the shape, relative sizes or dispositions of the semiconductor regions or junctions between the regions}
<administratively transferred to [H10D 62/124](#)>
- D H01L 29/0688 . . . {characterised by the particular shape of a junction between semiconductor regions}
<administratively transferred to [H10D 62/125](#)>
- D H01L 29/0692 . . . {Surface layout}
<administratively transferred to [H10D 62/126](#)>
- D H01L 29/0696 {of cellular field-effect devices, e.g. multicellular DMOS transistors or IGBTs}
<administratively transferred to [H10D 62/127](#)>
- D H01L 29/08 . . . with semiconductor regions connected to an electrode carrying current to be rectified, amplified or switched and such electrode being part of a semiconductor device which comprises three or more electrodes
<administratively transferred to [H10D 62/13](#)>
- D H01L 29/0804 . . . {Emitter regions of bipolar transistors}
<administratively transferred to [H10D 62/133](#)>
- D H01L 29/0808 {of lateral transistors}
<administratively transferred to [H10D 62/134](#)>
- D H01L 29/0813 {Non-interconnected multi-emitter structures}
<administratively transferred to [H10D 62/135](#)>
- D H01L 29/0817 {of heterojunction bipolar transistors (H01L 29/7375 takes precedence)}
<administratively transferred to [H10D 62/136](#)>
- D H01L 29/0821 . . . {Collector regions of bipolar transistors}
<administratively transferred to [H10D 62/137](#)>
- D H01L 29/0826 {Pedestal collectors}
<administratively transferred to [H10D 62/138](#)>
- D H01L 29/083 {Anode or cathode regions of thyristors or gated bipolar-mode devices}
<administratively transferred to [H10D 62/141](#)>
- D H01L 29/0834 {Anode regions of thyristors or gated bipolar-mode devices, e.g. supplementary regions surrounding anode regions}
<administratively transferred to [H10D 62/142](#)>
- D H01L 29/0839 {Cathode regions of thyristors}
<administratively transferred to [H10D 62/148](#)>
- D H01L 29/0843 {Source or drain regions of field-effect devices}
<administratively transferred to [H10D 62/149](#)>

- D H01L 29/0847 {of field-effect transistors with insulated gate (H01L 29/0653 takes precedence; with a passive supplementary region between source or drain and substrate related to punch-through, capacity or isolation phenomena H01L 29/1079; with LDD or DDD structure H01L 29/7833; for thin film transistors H01L 29/78618)}
<administratively transferred to [H10D 62/151](#)>
- D H01L 29/0852 {of DMOS transistors}
WARNING
Groups H01L 29/0852—H01L 29/0886 are incomplete pending reclassification of documents from group H01L 29/0847 and H01L 29/7801.
Groups H01L 29/0852—H01L 29/0886 and H01L 29/0847; H01L 29/7801 should be considered in order to perform a complete search.
<administratively transferred to [H10D 62/152](#)>
- D H01L 29/0856 {Source regions}
<administratively transferred to [H10D 62/152](#)>
- D H01L 29/086 {Impurity concentration or distribution}
<administratively transferred to [H10D 62/153](#)>
- D H01L 29/0865 {Disposition}
<administratively transferred to [H10D 62/154](#)>
- D H01L 29/0869 {Shape (cell layout H01L 29/0696)}
<administratively transferred to [H10D 62/155](#)>
- D H01L 29/0873 {Drain regions}
<administratively transferred to [H10D 62/156](#)>
- D H01L 29/0878 {Impurity concentration or distribution}
<administratively transferred to [H10D 62/157](#)>
- D H01L 29/0882 {Disposition}
<administratively transferred to [H10D 62/158](#)>
- D H01L 29/0886 {Shape}
<administratively transferred to [H10D 62/159](#)>
- D H01L 29/0891 {of field-effect transistors with Schottky gate}
<administratively transferred to [H10D 62/161](#)>
- D H01L 29/0895 {Tunnel injectors}
<administratively transferred to [H10D 62/165](#)>
- D H01L 29/10 . . . with semiconductor regions connected to an electrode not carrying current to be rectified, amplified or switched and such electrode being part of a semiconductor device which comprises three or more electrodes
<administratively transferred to [H10D 62/17](#)>
- D H01L 29/1004 {Base region of bipolar transistors}
<administratively transferred to [H10D 62/177](#)>
- D H01L 29/1008 {of lateral transistors}
<administratively transferred to [H10D 62/184](#)>
- D H01L 29/1012 {Base regions of thyristors (H01L 29/083 takes precedence)}
<administratively transferred to [H10D 62/192](#)>

- D H01L 29/1016 {Anode base regions of thyristors}
<administratively transferred to [H10D 62/199](#)>
- D H01L 29/102 {Cathode base regions of thyristors}
<administratively transferred to [H10D 62/206](#)>
- D H01L 29/1025 {Channel region of field-effect devices}
<administratively transferred to [H10D 62/213](#)>
- D H01L 29/1029 {of field-effect transistors}
<administratively transferred to [H10D 62/221](#)>
- D H01L 29/1033 {with insulated gate, e.g. characterised by the length, the width, the geometric contour or the doping structure (with channel and gate aligned in the lengthwise direction H01L 29/42376; with buried channel H01L 29/7838)}
<administratively transferred to [H10D 62/235](#)>
- D H01L 29/1037 {and non-planar channel (resulting from the gate-electrode disposition, e.g. within a trench, H01L 29/42356)}
<administratively transferred to [H10D 62/292](#)>
- D H01L 29/1041 {with a non-uniform doping structure in the channel region surface}
<administratively transferred to [H10D 62/299](#)>
- D H01L 29/1045 {the doping structure being parallel to the channel length, e.g. DMOS-like}
<administratively transferred to [H10D 62/307](#)>
- D H01L 29/105 {with vertical doping variation (H01L 29/7827 takes precedence)}
<administratively transferred to [H10D 62/314](#)>
- D H01L 29/1054 {with a variation of the composition, e.g. channel with strained layer for increasing the mobility}
<administratively transferred to [H10D 30/751](#)>
- D H01L 29/1058 {with PN junction gate}
<administratively transferred to [H10D 62/328](#)>
- D H01L 29/1062 {of charge-coupled devices}
<administratively transferred to [H10D 62/335](#)>
- D H01L 29/1066 {Gate region of field-effect devices with PN junction gate}
<administratively transferred to [H10D 62/343](#)>
- D H01L 29/107 {Substrate region of field-effect devices}
<administratively transferred to [H10D 62/351](#)>
- D H01L 29/1075 {of field-effect transistors}
<administratively transferred to [H10D 62/357](#)>
- D H01L 29/1079 {with insulated gate}
<administratively transferred to [H10D 62/364](#)>
- D H01L 29/1083 {with an inactive supplementary region, e.g. for preventing punch-through, improving capacity effect or leakage current}
<administratively transferred to [H10D 62/371](#)>
- D H01L 29/1087 {characterised by the contact structure of the substrate region, e.g. for controlling or preventing bipolar effect}
<administratively transferred to [H10D 62/378](#)>

- D H01L 29/1091 {of charge-coupled devices}
<administratively transferred to [H10D 62/386](#)>
- D H01L 29/1095 {Body region, i.e. base region, of DMOS transistors or IGBTs (cell layout H01L 29/0696)}
<administratively transferred to [H10D 62/393](#)>
- D H01L 29/12 . . characterised by the materials of which they are formed
<administratively transferred to [H10D 62/81](#)>
- D H01L 29/122 . . . {Single quantum well structures (single heterojunctions, couples of materials H01L 29/165, H01L 29/205, H01L 29/225, H01L 29/267)}
<administratively transferred to [H10D 62/812](#)>
- D H01L 29/125 {Quantum wire structures}
<administratively transferred to [H10D 62/813](#)>
- D H01L 29/127 {Quantum box structures}
<administratively transferred to [H10D 62/814](#)>
- D H01L 29/15 . . . Structures with periodic or quasi-periodic potential variation, e.g. multiple quantum wells, superlattices (such structures applied for the control of light G02F 1/017, applied in semiconductor lasers H01S 5/34)
NOTE
Group H01L 29/15 takes precedence over groups H01L 29/16 - H01L 29/26.
<administratively transferred to [H10D 62/815](#)>
- D H01L 29/151 {Compositional structures (H01L 29/157 and H01L 29/158 take precedence)}
<administratively transferred to [H10D 62/8161](#)>
- D H01L 29/152 {with quantum effects only in vertical direction, i.e. layered structures with quantum effects solely resulting from vertical potential variation}
<administratively transferred to [H10D 62/8162](#)>
- D H01L 29/154 {comprising at least one long range structurally disordered material, e.g. one-dimensional vertical amorphous superlattices}
<administratively transferred to [H10D 62/8163](#)>
- D H01L 29/155 {Comprising only semiconductor materials (H01L 29/154 takes precedence)}
<administratively transferred to [H10D 62/8164](#)>
- D H01L 29/157 {Doping structures, e.g. doping superlattices, nipi superlattices (delta doping in general H01L 29/365)}
<administratively transferred to [H10D 62/8171](#)>
- D H01L 29/158 {Structures without potential periodicity in a direction perpendicular to a major surface of the substrate, i.e. vertical direction, e.g. lateral superlattices, lateral surface superlattices [LSS]}
<administratively transferred to [H10D 62/8181](#)>
- D H01L 29/16 . . . including, apart from doping materials or other impurities, only elements of Group IV of the Periodic Table
<administratively transferred to [H10D 62/83](#)>
- D H01L 29/1602 {Diamond}
<administratively transferred to [H10D 62/8303](#)>

- D H01L 29/1604 . . . {Amorphous materials}
<administratively transferred to [H10D 62/402](#) and [H10D 62/83](#)>
- D H01L 29/1606 . . . {Graphene}
<administratively transferred to [H10D 62/882](#)>
- D H01L 29/1608 . . . {Silicon carbide}
<administratively transferred to [H10D 62/8325](#)>
- D H01L 29/161 . . . including two or more of the elements provided for in group H01L 29/16 {, e.g. alloys (H01L 29/1604 takes precedence)}
<administratively transferred to [H10D 62/832](#)>
- D H01L 29/165 . . . in different semiconductor regions {, e.g. heterojunctions}
<administratively transferred to [H10D 62/822](#)>
- D H01L 29/167 . . . further characterised by the doping material {(H01L 29/1604 takes precedence)}
<administratively transferred to [H10D 62/834](#)>
- D H01L 29/18 . . . Selenium or tellurium only, apart from doping materials or other impurities
<administratively transferred to [H10D 62/84](#)>
- D H01L 29/185 . . . {Amorphous materials}
<administratively transferred to [H10D 62/402](#) and [H10D 62/84](#)>
- D H01L 29/20 . . . including, apart from doping materials or other impurities, only $A_{III}B_V$ compounds
<administratively transferred to [H10D 62/85](#)>
- D H01L 29/2003 . . . {Nitride compounds}
<administratively transferred to [H10D 62/8503](#)>
- D H01L 29/2006 . . . {Amorphous materials}
<administratively transferred to [H10D 62/402](#) and [H10D 62/85](#)>
- D H01L 29/201 . . . including two or more compounds {, e.g. alloys (H01L 29/2006 takes precedence)}
<administratively transferred to [H10D 62/852](#)>
- D H01L 29/205 . . . in different semiconductor regions {, e.g. heterojunctions}
<administratively transferred to [H10D 62/824](#)>
- D H01L 29/207 . . . further characterised by the doping material {(H01L 29/2006 takes precedence)}
<administratively transferred to [H10D 62/854](#)>
- D H01L 29/22 . . . including, apart from doping materials or other impurities, only $A_{III}B_{VI}$ compounds
<administratively transferred to [H10D 62/86](#)>
- D H01L 29/2203 . . . {Cd X compounds being one element of the 6th group of the Periodic Table (H01L 29/2206 takes precedence)}
<administratively transferred to [H10D 62/8603](#)>
- D H01L 29/2206 . . . {Amorphous materials}
<administratively transferred to [H10D 62/402](#) and [H10D 62/86](#)>
- D H01L 29/221 . . . including two or more compounds {, e.g. alloys (H01L 29/2206 takes precedence)}
<administratively transferred to [H10D 62/862](#)>

- D H01L 29/225 in different semiconductor regions {, e.g. heterojunctions}
<administratively transferred to [H10D 62/826](#)>
- D H01L 29/227 further characterised by the doping material {(H01L 29/2206 takes precedence)}
<administratively transferred to [H10D 62/864](#)>
- D H01L 29/24 . . . including, apart from doping materials or other impurities, only semiconductor materials not provided for in groups H01L 29/16, H01L 29/18, H01L 29/20, H01L 29/22 (including organic materials H10K 99/00)
<administratively transferred to [H10D 62/80](#)>
- D H01L 29/242 { $A_iB_{v_i}$ or $A_iB_{v_{ii}}$ compounds, e.g. Cu_2O , CuI (H01L 29/247 takes precedence)}
<administratively transferred to [H10D 62/871](#)>
- D H01L 29/245 {Pb compounds, e.g. PbO (H01L 29/247 takes precedence)}
<administratively transferred to [H10D 62/874](#)>
- D H01L 29/247 {Amorphous materials}
<administratively transferred to [H10D 62/402](#) and [H10D 62/80](#)>
- D H01L 29/26 . . . including, apart from doping materials or other impurities, elements provided for in two or more of the groups H01L 29/16, H01L 29/18, H01L 29/20, H01L 29/22, H01L 29/24 {, e.g. alloys}
<administratively transferred to [H10D 62/80](#)>
- D H01L 29/263 {Amorphous materials}
<administratively transferred to [H10D 62/402](#) and [H10D 62/80](#)>
- D H01L 29/267 in different semiconductor regions {, e.g. heterojunctions (H01L 29/263 takes precedence)}
<administratively transferred to [H10D 62/82](#)>
- D H01L 29/30 . . characterised by physical imperfections; having polished or roughened surface
<administratively transferred to [H10D 62/50](#)>
- D H01L 29/32 . . . the imperfections being within the semiconductor body
<administratively transferred to [H10D 62/53](#)>
- D H01L 29/34 . . . the imperfections being on the surface
<administratively transferred to [H10D 62/57](#)>
- D H01L 29/36 . . characterised by the concentration or distribution of impurities {in the bulk material (within semiconductor regions H01L 29/06)}
<administratively transferred to [H10D 62/60](#)>
- D H01L 29/365 . . . {Planar doping, e.g. atomic-plane doping, delta-doping}
<administratively transferred to [H10D 62/605](#)>
- D H01L 29/40 . Electrodes {; Multistep manufacturing processes therefor}
<administratively transferred to [H10D 64/00](#)>
- D H01L 29/401 . . {Multistep manufacturing processes}
<administratively transferred to [H10D 64/01](#)>
- D H01L 29/4011 . . . {for data storage electrodes}
<administratively transferred to [H10D 64/031](#)>

- D H01L 29/40111 . . . {the electrodes comprising a layer which is used for its ferroelectric properties}
<administratively transferred to [H10D 64/033](#)>
- D H01L 29/40114 . . . {the electrodes comprising a conductor-insulator-conductor-insulator-semiconductor structure}
<administratively transferred to [H10D 64/035](#)>
- D H01L 29/40117 . . . {the electrodes comprising a charge-trapping insulator}
<administratively transferred to [H10D 64/037](#)>
- D H01L 29/402 . . {Field plates}
<administratively transferred to [H10D 64/111](#)>
- D H01L 29/404 . . . {Multiple field plate structures}
<administratively transferred to [H10D 64/112](#)>
- D H01L 29/405 . . . {Resistive arrangements, e.g. resistive or semi-insulating field plates}
<administratively transferred to [H10D 64/115](#)>
- D H01L 29/407 . . . {Recessed field plates, e.g. trench field plates, buried field plates}
<administratively transferred to [H10D 64/117](#)>
- D H01L 29/408 . . {with an insulating layer with a particular dielectric or electrostatic property, e.g. with static charges or for controlling trapped charges or moving ions, or with a plate acting on the insulator potential or the insulator charges, e.g. for controlling charges effect or potential distribution in the insulating layer, or with a semi-insulating layer contacting directly the semiconductor surface}
<administratively transferred to [H10D 64/118](#)>
- D H01L 29/41 . . characterised by their shape, relative sizes or dispositions
<administratively transferred to [H10D 64/20](#)>
- D H01L 29/413 . . . {Nanosized electrodes, e.g. nanowire electrodes comprising one or a plurality of nanowires (nanosized carbon materials, e.g. carbon nanotubes, *per se* C01B 32/15; transparent electrodes comprising carbon nano-tubes H10K 30/821, nanotechnology *per se* B82B)}
<administratively transferred to [H10D 64/205](#)>
- D H01L 29/417 . . . carrying the current to be rectified, amplified or switched
<administratively transferred to [H10D 64/23](#)>
- D H01L 29/41708 {Emitter or collector electrodes for bipolar transistors}
<administratively transferred to [H10D 64/231](#)>
- D H01L 29/41716 {Cathode or anode electrodes for thyristors}
<administratively transferred to [H10D 64/233](#)>
- D H01L 29/41725 {Source or drain electrodes for field effect devices (with monocrystalline semiconductor on source/drain region H01L 29/0843)}
<administratively transferred to [H10D 64/251](#)>
- D H01L 29/41733 {for thin film transistors with insulated gate}
<administratively transferred to [H10D 30/6729](#)>
- D H01L 29/41741 {for vertical or pseudo-vertical devices}
- NOTE**
A pseudo-vertical device is a device with the drain and source electrodes on the same main surface and where the main current is vertical at least in a part of its path
<administratively transferred to [H10D 64/252](#)>

- D H01L 29/4175 {for lateral devices where the connection to the source or drain region is done through at least one part of the semiconductor substrate thickness, e.g. with connecting sink or with via-hole}
- NOTE
The sink or via-hole leading to the source or drain region is considered to form part of the source or drain electrode
- <administratively transferred to [H10D 64/254](#)>
- D H01L 29/41758 {for lateral devices with structured layout for source or drain region, i.e. the source or drain region having cellular, interdigitated or ring structure or being curved or angular (H01L 29/41733 – H01L 29/4175 take precedence)}
- NOTE
Interdigitated structure means that at least one of the source or drain region has two or more fingers
- <administratively transferred to [H10D 64/257](#)>
- D H01L 29/41766 {with at least part of the source or drain electrode having contact below the semiconductor surface, e.g. the source or drain electrode formed at least partially in a groove or with inclusions of conductor inside the semiconductor (H01L 29/41733 – H01L 29/41758 take precedence)}
- <administratively transferred to [H10D 64/256](#)>
- D H01L 29/41775 {characterised by the proximity or the relative position of the source or drain electrode and the gate electrode, e.g. the source or drain electrode separated from the gate electrode by side-walls or spreading around or above the gate electrode}
- <administratively transferred to [H10D 64/258](#)>
- D H01L 29/41783 {Raised source or drain electrodes self aligned with the gate}
- <administratively transferred to [H10D 64/259](#)>
- D H01L 29/41791 {for transistors with a horizontal current flow in a vertical sidewall, e.g. FinFET, MuGFET}
- <administratively transferred to [H10D 30/6219](#)>
- D H01L 29/423 . . . not carrying the current to be rectified, amplified or switched
- <administratively transferred to [H10D 64/27](#)>
- D H01L 29/42304 {Base electrodes for bipolar transistors}
- <administratively transferred to [H10D 64/281](#)>
- D H01L 29/42308 {Gate electrodes for thyristors}
- <administratively transferred to [H10D 64/291](#)>
- D H01L 29/42312 {Gate electrodes for field-effect devices}
- <administratively transferred to [H10D 64/311](#)>
- D H01L 29/42316 {for field-effect transistors}
- <administratively transferred to [H10D 64/411](#)>
- D H01L 29/4232 {with insulated gate}
- <administratively transferred to [H10D 64/511](#)>
- D H01L 29/42324 {Gate electrodes for transistors with a floating gate}
- <administratively transferred to [H10D 30/6891](#)>
- D H01L 29/42328 {with at least one additional gate other than the floating gate and the control gate, e.g. program gate, erase gate or select gate}
- <administratively transferred to [H10D 30/6892](#)>

- D H01L 29/42332 {with the floating gate formed by two or more non-connected parts, e.g. multi-particles floating gate}
<administratively transferred to [H10D 30/6893](#)>
- D H01L 29/42336 {with one gate at least partly formed in a trench}
<administratively transferred to [H10D 30/6894](#)>
- D H01L 29/4234 {Gate electrodes for transistors with charge trapping gate insulator}
<administratively transferred to [H10D 30/694](#)>
- D H01L 29/42344 {with at least one additional gate, e.g. program gate, erase gate or select gate}
<administratively transferred to [H10D 30/696](#)>
- D H01L 29/42348 {with trapping site formed by at least two separated sites, e.g. multi-particles trapping site}
<administratively transferred to [H10D 30/697](#)>
- D H01L 29/42352 {with the gate at least partly formed in a trench}
<administratively transferred to [H10D 30/699](#)>
- D H01L 29/42356 {Disposition, e.g. buried gate electrode (H01L 29/42324 and H01L 29/4234 take precedence)}
<administratively transferred to [H10D 64/512](#)>
- D H01L 29/4236 {within a trench, e.g. trench gate electrode, groove gate electrode}
<administratively transferred to [H10D 64/513](#)>
- D H01L 29/42364 {characterised by the insulating layer, e.g. thickness or uniformity (H01L 29/42324 and H01L 29/4234 take precedence)}
<administratively transferred to [H10D 64/514](#)>
- D H01L 29/42368 {the thickness being non-uniform}
<administratively transferred to [H10D 64/516](#)>
- D H01L 29/42372 {characterised by the conducting layer, e.g. the length, the sectional shape or the lay-out (H01L 29/42324 takes precedence)}
<administratively transferred to [H10D 64/517](#)>
- D H01L 29/42376 {characterised by the length or the sectional shape}
<administratively transferred to [H10D 64/518](#)>
- D H01L 29/4238 {characterised by the surface lay-out}
<administratively transferred to [H10D 64/519](#)>
- D H01L 29/42384 {for thin film field effect transistors, e.g. characterised by the thickness or the shape of the insulator or the dimensions, the shape or the lay-out of the conductor}
<administratively transferred to [H10D 30/673](#)>
- D H01L 2029/42388 {characterised by the shape of the insulating material}
<administratively transferred to [H10D 30/6736](#)>
- D H01L 29/42392 {fully surrounding the channel, e.g. gate-all-around}
<administratively transferred to [H10D 30/6735](#)>
- D H01L 29/42396 {for charge coupled devices}
<administratively transferred to [H10D 44/45](#)>
- D H01L 29/43 characterised by the materials of which they are formed
<administratively transferred to [H10D 64/60](#)>

- D H01L 29/432 . . . {Heterojunction-gate for field-effect devices}
<administratively transferred to [H10D 64/602](#)>
- D H01L 29/435 . . . {Resistive materials for field-effect devices, e.g. resistive gate for MOSFET or MESFET}
<administratively transferred to [H10D 64/605](#)>
- D H01L 29/437 . . . {Superconductor materials}
<administratively transferred to [H10D 64/608](#)>
- D H01L 29/45 . . . Ohmic electrodes
<administratively transferred to [H10D 64/62](#)>
- D H01L 29/452 {on-III-BV compounds}
<administratively transferred to [H10D 62/85](#) and [H10D 64/62](#)>
- D H01L 29/454 {on thin film-III-BV compounds}
<administratively transferred to [H10D 30/6737](#) and [H10D 30/675](#)>
- D H01L 29/456 {on-silicon}
<administratively transferred to [H10D 62/83](#) and [H10D 64/62](#)>
- D H01L 29/458 {for thin film-silicon, e.g. source or drain electrode}
<administratively transferred to [H10D 30/6737](#) and [H10D 30/6743](#)>
- D H01L 29/47 . . . Schottky barrier electrodes {(H01L 29/435 takes precedence)}
<administratively transferred to [H10D 64/64](#)>
- D H01L 29/475 {on-III-BV compounds}
<administratively transferred to [H10D 30/6738](#), [H10D 30/675](#), [H10D 62/85](#), and [H10D 64/64](#) simultaneously>
- D H01L 29/49 . . . Metal-insulator-semiconductor electrodes, {e.g. gates of MOSFET (H01L 29/435 takes precedence)}
NOTE
This group covers also devices using any other conductor material in place of metal
<administratively transferred to [H10D 64/66](#)>
- D H01L 29/4908 {for thin film semiconductor, e.g. gate of TFT}
<administratively transferred to [H10D 30/6739](#)>
- D H01L 29/4916 {the conductor material next to the insulator being a silicon layer, e.g. polysilicon doped with boron, phosphorus or nitrogen (H01L 29/4908, H01L 29/4983 take precedence)}
<administratively transferred to [H10D 64/661](#)>
- D H01L 29/4925 {with a multiple layer structure, e.g. several silicon layers with different crystal structure or grain arrangement (with only a vertical doping structure or vertical doping variation H01L 29/4916)}
<administratively transferred to [H10D 64/662](#)>
- D H01L 29/4933 {with a silicide layer contacting the silicon layer, e.g. Polycide gate (with a barrier layer between the silicide and silicon layers H01L 29/4941)}
<administratively transferred to [H10D 64/663](#)>
- D H01L 29/4941 {with a barrier layer between the silicon and the metal or metal silicide upper layer, e.g. Silicide/TiN/Polysilicon}
<administratively transferred to [H10D 64/664](#)>

- D H01L 29/495 . . . {the conductor material next to the insulator being a simple metal, e.g. W, Mo (H01L 29/4908, H01L 29/4983 take precedence)}
<administratively transferred to [H10D 64/665](#)>
- D H01L 29/4958 . . . {with a multiple layer structure}
<administratively transferred to [H10D 64/666](#)>
- D H01L 29/4966 . . . {the conductor material next to the insulator being a composite material, e.g. organic material, TiN, MoSi₂ (H01L 29/4908, H01L 29/4983 take precedence)}
<administratively transferred to [H10D 64/667](#)>
- D H01L 29/4975 . . . {being a silicide layer, e.g. TiSi₂}
<administratively transferred to [H10D 64/668](#)>
- D H01L 29/4983 . . . {with a lateral structure, e.g. a Polysilicon gate with a lateral doping variation or with a lateral composition variation or characterised by the sidewalls being composed of conductive, resistive or dielectric material}
<administratively transferred to [H10D 64/671](#)>
- D H01L 29/4991 . . . {comprising an air gap}
WARNING
Group H01L 29/4991 is incomplete pending reclassification of documents from group H01L 29/4983.
Groups H01L 29/4991 and H01L 29/4983 should be considered in order to perform a complete search.
<administratively transferred to [H10D 64/679](#)>
- D H01L 29/51 . . . Insulating materials associated therewith {(for MIS structures on thin film semiconductor H01L 29/4908)}
<administratively transferred to [H10D 64/68](#)>
- D H01L 29/511 . . . {with a compositional variation, e.g. multilayer structures (H01L 29/516 takes precedence)}
<administratively transferred to [H10D 64/681](#)>
- D H01L 29/512 . . . {the variation being parallel to the channel plane}
<administratively transferred to [H10D 64/683](#)>
- D H01L 29/513 . . . {the variation being perpendicular to the channel plane}
<administratively transferred to [H10D 64/685](#)>
- D H01L 29/515 . . . {with cavities, e.g. containing a gas}
<administratively transferred to [H10D 64/687](#)>
- D H01L 29/516 . . . {with at least one ferroelectric layer}
<administratively transferred to [H10D 64/689](#)>
- D H01L 29/517 . . . {the insulating material comprising a metallic compound, e.g. metal oxide, metal silicate (H01L 29/518 takes precedence)}
<administratively transferred to [H10D 64/691](#)>
- D H01L 29/518 . . . {the insulating material containing nitrogen, e.g. nitride, oxynitride, nitrogen-doped material}
<administratively transferred to [H10D 64/693](#)>
- D H01L 29/66 . Types of semiconductor device {- Multistep manufacturing processes therefor}
<administratively transferred to [H10D 48/30](#)>
- D H01L 29/66007 . {Multistep manufacturing processes}
<administratively transferred to [H10D 48/01](#)>

- D H01L 29/66015 . . . {of devices having a semiconductor body comprising semiconducting carbon, e.g. diamond, diamond-like carbon, graphene}
<administratively transferred to [H10D 48/01](#) and [H10D 62/8303](#)>
- D H01L 29/66022 . . . {the devices being controllable only by variation of the electric current supplied or the electric potential applied, to one or more of the electrodes carrying the current to be rectified, amplified, oscillated or switched, e.g. two-terminal devices}
<administratively transferred to [H10D 48/021](#) and [H10D 62/8303](#)>
- D H01L 29/6603 {Diodes}
<administratively transferred to [H10D 8/051](#) and [H10D 62/8303](#)>
- D H01L 29/66037 . . . {the devices being controllable only by the electric current supplied or the electric potential applied, to an electrode which does not carry the current to be rectified, amplified or switched, e.g. three-terminal devices}
<administratively transferred to [H10D 48/031](#) and [H10D 62/8303](#)>
- D H01L 29/66045 {Field-effect transistors}
<administratively transferred to [H10D 30/01](#) and [H10D 62/8303](#)>
- D H01L 29/66053 . . . {of devices having a semiconductor body comprising crystalline silicon carbide}
<administratively transferred to [H10D 48/01](#) and [H10D 62/8325](#)>
- D H01L 29/6606 . . . {the devices being controllable only by variation of the electric current supplied or the electric potential applied, to one or more of the electrodes carrying the current to be rectified, amplified, oscillated or switched, e.g. two-terminal devices}
<administratively transferred to [H10D 8/051](#) and [H10D 62/8325](#)>
- D H01L 29/66068 . . . {the devices being controllable only by the electric current supplied or the electric potential applied, to an electrode which does not carry the current to be rectified, amplified or switched, e.g. three-terminal devices}
<administratively transferred to [H10D 12/031](#) and [H10D 62/8325](#)>
- D H01L 29/66075 . . . {of devices having semiconductor bodies comprising group 14 or group 13/15 materials (comprising semiconducting carbon H01L 29/66015; comprising crystalline silicon carbide H01L 29/66053)}
<administratively transferred to [H10D 48/01](#)>
- D H01L 29/66083 . . . {the devices being controllable only by variation of the electric current supplied or the electric potential applied, to one or more of the electrodes carrying the current to be rectified, amplified, oscillated or switched, e.g. two-terminal devices}
<administratively transferred to [H10D 48/021](#)>
- D H01L 29/6609 {Diodes}
<administratively transferred to [H10D 8/01](#)>
- D H01L 29/66098 {Breakdown diodes}
<administratively transferred to [H10D 8/021](#)>
- D H01L 29/66106 {Zener diodes}
<administratively transferred to [H10D 8/022](#)>
- D H01L 29/66113 {Avalanche diodes}
<administratively transferred to [H10D 8/024](#)>
- D H01L 29/66121 {Multilayer diodes, e.g. PNP diodes}
<administratively transferred to [H10D 8/041](#)>

D	H01L 29/66128	. . . . . {Planar diodes} <administratively transferred to H10D 8/043 >
D	H01L 29/66136	. . . . . {PN junction diodes} <administratively transferred to H10D 8/045 >
D	H01L 29/66143	. . . . . {Schottky diodes} <administratively transferred to H10D 8/051 >
D	H01L 29/66151	. . . . . {Tunnel diodes (group 13/15 resonant tunneling diodes H01L 29/66219)} <administratively transferred to H10D 8/053 >
D	H01L 29/66159	. . . . . {Transit time diodes, e.g. IMPATT, TRAPATT diodes} <administratively transferred to H10D 8/055 >
D	H01L 29/66166	. . . . . {Resistors with PN junction} <administratively transferred to H10D 1/025 >
D	H01L 29/66174	. . . . . {Capacitors with PN or Schottky junction, e.g. varactors (capacitors with PN junction combined with MOS control H01L 29/66189)} <administratively transferred to H10D 1/045 >
D	H01L 29/66181	. . . . . {Conductor-insulator-semiconductor capacitors, e.g. trench capacitors} <administratively transferred to H10D 1/047 >
D	H01L 29/66189	. . . . . {with PN junction, e.g. hybrid capacitors} <administratively transferred to H10D 1/048 >
D	H01L 29/66196	. . . . . {with an active layer made of a group 13/15 material} <administratively transferred to H10D 48/021 >
D	H01L 29/66204	. . . . . {Diodes} <administratively transferred to H10D 8/043 >
D	H01L 29/66212	. . . . . {Schottky diodes} <administratively transferred to H10D 8/051 >
D	H01L 29/66219	. . . . . {with a heterojunction, e.g. resonant tunneling diodes [RTD]} <administratively transferred to H10D 8/053 >
D	H01L 29/66227	. . . . {the devices being controllable only by the electric current supplied or the electric potential applied, to an electrode which does not carry the current to be rectified, amplified or switched, e.g. three-terminal devices} <administratively transferred to H10D 48/031 >
D	H01L 29/66234	. . . . . {Bipolar junction transistors [BJT]} <administratively transferred to H10D 10/01 >
D	H01L 29/66242	. . . . . {Heterojunction transistors [HBT] (with an active layer made of a group 13/15 material H01L 29/66318)} <administratively transferred to H10D 10/021 >
D	H01L 29/6625	. . . . . {Lateral transistors (H01L 29/66242 and H01L 29/66265 take precedence)} <administratively transferred to H10D 10/061 >
D	H01L 29/66257	. . . . . {Schottky transistors} <administratively transferred to H10D 10/031 >
D	H01L 29/66265	. . . . . {Thin film bipolar transistors (H01L 29/66242 takes precedence)} <administratively transferred to H10D 10/041 >

- D H01L 29/66272 {Silicon vertical transistors (H01L 29/66242, H01L 29/66257 and H01L 29/66265 take precedence)}
<administratively transferred to [H10D 10/051](#)>
- D H01L 29/6628 {Inverse transistors}
<administratively transferred to [H10D 10/052](#)>
- D H01L 29/66287 {with a single crystalline emitter, collector or base including extrinsic, link or graft base formed on the silicon substrate, e.g. by epitaxy, recrystallisation, after insulating device isolation (H01L 29/6628 takes precedence)}
<administratively transferred to [H10D 10/054](#)>
- D H01L 29/66295 {with main current going through the whole silicon substrate, e.g. power bipolar transistor}
<administratively transferred to [H10D 10/056](#)>
- D H01L 29/66303 {with multi-emitter, e.g. interdigitated, multi-cellular or distributed emitter}
<administratively transferred to [H10D 10/058](#)>
- D H01L 29/6631 {with an active layer made of a group 13/15 material}
<administratively transferred to [H10D 10/01](#)>
- D H01L 29/66318 {Heterojunction transistors}
<administratively transferred to [H10D 10/021](#)>
- D H01L 29/66325 {controlled by field-effect, e.g. insulated gate bipolar transistors [IGBT]}
<administratively transferred to [H10D 12/01](#)>
- D H01L 29/66333 {Vertical insulated gate bipolar transistors}
<administratively transferred to [H10D 12/032](#)>
- D H01L 29/6634 {with a recess formed by etching in the source/emitter contact region (H01L 29/66348 takes precedence; etching of semiconductor bodies H01L 21/302)}
<administratively transferred to [H10D 12/035](#)>
- D H01L 29/66348 {with a recessed gate}
<administratively transferred to [H10D 12/038](#)>
- D H01L 29/66356 {Gated diodes, e.g. field-controlled diodes [FCD], static induction thyristors [SITh], field-controlled thyristors [FCTh]}
<administratively transferred to [H10D 12/021](#)>
- D H01L 29/66363 {Thyristors}
<administratively transferred to [H10D 18/01](#)>
- D H01L 29/66371 {structurally associated with another device, e.g. built-in diode (making integrated circuits H01L 21/82)}
<administratively transferred to [H10D 84/0102](#)>
- D H01L 29/66378 {the other device being a controlling field-effect device}
<administratively transferred to [H10D 84/0105](#)>
- D H01L 29/66386 {Bidirectional thyristors}
<administratively transferred to [H10D 18/021](#)>
- D H01L 29/66393 {Lateral or planar thyristors}
<administratively transferred to [H10D 18/031](#)>

- D H01L 29/66401 {with an active layer made of a group 13/15 material}
<administratively transferred to [H10D 18/01](#)>
- D H01L 29/66409 {Unipolar field-effect transistors}
<administratively transferred to [H10D 30/01](#)>
- D H01L 29/66416 {Static induction transistors [SIT] (with an active layer made of a group 13/15 material H01L 29/66454)}
<administratively transferred to [H10D 30/012](#)>
- D H01L 29/66424 {Permeable base transistors [PBT]}
<administratively transferred to [H10D 30/012](#)>
- D H01L 29/66431 {with a heterojunction interface channel or gate, e.g. HFET, HIGFET, SISFET, HJFET, HEMT (with an active layer made of a group 13/15 material H01L 29/66462)}
<administratively transferred to [H10D 30/015](#)>
- D H01L 29/66439 {with a one- or zero-dimensional channel, e.g. quantum wire FET, in-plane gate transistor [IPG], single electron transistor [SET], striped channel transistor, Coulomb blockade transistor (with an active layer made of a group 13/15 material H01L 29/66469)}
<administratively transferred to [H10D 30/014](#)>
- D H01L 29/66446 {with an active layer made of a group 13/15 material, e.g. group 13/15 velocity modulation transistor [VMT], group 13/15 negative resistance FET [NERFET]}
<administratively transferred to [H10D 30/01](#)>
- D H01L 29/66454 {Static induction transistors [SIT], e.g. permeable base transistors [PBT]}
<administratively transferred to [H10D 30/012](#)>
- D H01L 29/66462 {with a heterojunction interface channel or gate, e.g. HFET, HIGFET, SISFET, HJFET, HEMT}
<administratively transferred to [H10D 30/015](#)>
- D H01L 29/66469 {with one- or zero-dimensional channel, e.g. quantum wire field-effect transistors, in-plane gate transistors [IPG], single electron transistors [SET], Coulomb blockade transistors, striped channel transistors}
<administratively transferred to [H10D 30/014](#)>
- D H01L 29/66477 {with an insulated gate, i.e. MISFET}
<administratively transferred to [H10D 30/021](#)>
- D H01L 29/66484 {with multiple gate, at least one gate being an insulated gate (H01L 29/66742 takes precedence)}
<administratively transferred to [H10D 30/023](#)>
- D H01L 29/66492 {with a pocket or a lightly doped drain selectively formed at the side of the gate}
<administratively transferred to [H10D 30/022](#)>
- D H01L 29/665 {using self aligned silicidation, i.e. salicide (formation of conductive layers comprising silicides H01L 21/28518)}
<administratively transferred to [H10D 30/0212](#)>
- D H01L 29/66507 {providing different silicide thicknesses on the gate and on source or drain}
<administratively transferred to [H10D 30/0213](#)>

- D H01L 29/66515 {using self-aligned selective metal deposition simultaneously on the gate and on source or drain}
<administratively transferred to [H10D 30/0215](#)>
- D H01L 29/66522 {with an active layer made of a group 13/15 material (H01L 29/66446 takes precedence)}
<administratively transferred to [H10D 30/021](#)>
- D H01L 29/6653 {using the removal of at least part of spacer, e.g. disposable spacer}
<administratively transferred to [H10D 64/015](#)>
- D H01L 29/66537 {using a self-aligned punch-through stopper or threshold implant under the gate region (H01L 29/66606 takes precedence)}
<administratively transferred to [H10D 30/0217](#)>
- D H01L 29/66545 {using a dummy, i.e. replacement gate in a process wherein at least a part of the final gate is self-aligned to the dummy gate}
<administratively transferred to [H10D 64/017](#)>
- D H01L 29/66553 {using inside spacers, permanent or not}
<administratively transferred to [H10D 64/018](#)>
- D H01L 29/6656 {using multiple spacer layers, e.g. multiple sidewall spacers}
<administratively transferred to [H10D 64/021](#)>
- D H01L 29/66568 {Lateral single gate silicon transistors}
<administratively transferred to [H10D 30/027](#)>
- D H01L 29/66575 {where the source and drain or source and drain extensions are self-aligned to the sides of the gate (H01L 29/66606 takes precedence)}
<administratively transferred to [H10D 30/0223](#)>
- D H01L 29/66583 {with initial gate mask or masking layer complementary to the prospective gate location, e.g. with dummy source and drain contacts}
<administratively transferred to [H10D 30/0225](#)>
- D H01L 29/6659 {with both lightly doped source and drain extensions and source and drain self-aligned to the sides of the gate, e.g. lightly doped drain [LDD] MOSFET, double diffused drain [DDD] MOSFET}
<administratively transferred to [H10D 30/0227](#)>
- D H01L 29/66598 {forming drain [D] and lightly doped drain [LDD] simultaneously, e.g. using implantation through the wings a T-shaped layer, or through a specially shaped layer}
<administratively transferred to [H10D 30/0229](#)>
- D H01L 29/66606 {with final source and drain contacts formation strictly before final or dummy gate formation, e.g. contact first technology (H01L 29/66621 takes precedence)}
<administratively transferred to [H10D 30/0273](#)>
- D H01L 29/66613 {with a gate recessing step, e.g. using local oxidation (making recessed gate LDMOS transistors H01L 29/66704)}
<administratively transferred to [H10D 64/025](#)>
- D H01L 29/66621 {using etching to form a recess at the gate location (etching of semiconductor bodies H01L 21/302)}
<administratively transferred to [H10D 64/027](#)>

- D H01L 29/66628 {recessing the gate by forming single crystalline semiconductor material at the source or drain location}
<administratively transferred to [H10D 30/0275](#)>
- D H01L 29/66636 {with source or drain recessed by etching or first recessed by etching and then refilled}
<administratively transferred to [H10D 62/021](#)>
- D H01L 29/66643 {with source or drain regions formed by a Schottky barrier or a conductor-insulator-semiconductor structure}
<administratively transferred to [H10D 30/0277](#)>
- D H01L 29/66651 {with a single crystalline channel formed on the silicon substrate after insulating device isolation}
<administratively transferred to [H10D 30/0278](#)>
- D H01L 29/66659 {with asymmetry in the channel direction, e.g. lateral high-voltage MISFETs with drain offset region, extended drain MISFETs}
<administratively transferred to [H10D 30/0221](#)>
- D H01L 29/66666 {Vertical transistors (H01L 29/66712, H01L 29/66742 take precedence)}
<administratively transferred to [H10D 30/025](#)>
- D H01L 29/66674 {DMOS transistors, i.e. MISFETs with a channel accommodating body or base region adjoining a drain drift region (making lateral high-voltage MISFETs with channel well and drain offset region H01L 29/66659)}
<administratively transferred to [H10D 30/028](#)>
- D H01L 29/66681 {Lateral DMOS transistors, i.e. LDMOS transistors}
<administratively transferred to [H10D 30/0281](#)>
- D H01L 29/66689 {with a step of forming an insulating sidewall spacer (forming insulating material on a substrate H01L 21/02107)}
<administratively transferred to [H10D 30/0285](#)>
- D H01L 29/66696 {with a step of recessing the source electrode}
<administratively transferred to [H10D 30/0287](#)>
- D H01L 29/66704 {with a step of recessing the gate electrode, e.g. to form a trench gate electrode}
<administratively transferred to [H10D 30/0289](#)>
- D H01L 29/66712 {Vertical DMOS transistors, i.e. VDMOS transistors}
<administratively transferred to [H10D 30/0291](#)>
- D H01L 29/66719 {With a step of forming an insulating sidewall spacer}
<administratively transferred to [H10D 30/0293](#)>
- D H01L 29/66727 {with a step of recessing the source electrode}
<administratively transferred to [H10D 30/0295](#)>
- D H01L 29/66734 {with a step of recessing the gate electrode, e.g. to form a trench gate electrode}
<administratively transferred to [H10D 30/0297](#)>
- D H01L 29/66742 {Thin film unipolar transistors}
<administratively transferred to [H10D 30/031](#)>
- D H01L 29/6675 {Amorphous silicon or polysilicon transistors}
<administratively transferred to [H10D 30/0321](#)>

- D H01L 29/66757 {Lateral single gate single channel transistors with non-inverted structure, i.e. the channel layer is formed before the gate}
<administratively transferred to [H10D 30/0314](#) and [H10D 30/0321](#)>
- D H01L 29/66765 {Lateral single gate single channel transistors with inverted structure, i.e. the channel layer is formed after the gate}
<administratively transferred to [H10D 30/0316](#) and [H10D 30/0321](#)>
- D H01L 29/66772 {Monocrystalline silicon transistors on insulating substrates, e.g. quartz substrates (H01L 29/66666 takes precedence; thin film FinFETs H01L 29/66795)}
<administratively transferred to [H10D 30/0323](#)>
- D H01L 29/6678 {on sapphire substrates, e.g. SOS transistors}
<administratively transferred to [H10D 30/0327](#) and [H10D 30/0323](#)>
- D H01L 29/66787 {with a gate at the side of the channel}
<administratively transferred to [H10D 30/026](#)>
- D H01L 29/66795 {with a horizontal current flow in a vertical sidewall of a semiconductor body, e.g. FinFET, MuGFET}
<administratively transferred to [H10D 30/024](#)>
- D H01L 29/66803 {with a step of doping the vertical sidewall, e.g. using tilted or multi-angled implants}
<administratively transferred to [H10D 30/0241](#)>
- D H01L 29/6681 {using dummy structures having essentially the same shape as the semiconductor body, e.g. to provide stability}
<administratively transferred to [H10D 30/0243](#)>
- D H01L 29/66818 {the channel being thinned after patterning, e.g. sacrificial oxidation on fin}
<administratively transferred to [H10D 30/0245](#)>
- D H01L 29/66825 {with a floating gate (H01L 29/6684 takes precedence)}
<administratively transferred to [H10D 30/0411](#)>
- D H01L 29/66833 {with a charge trapping gate insulator, e.g. MNOS transistors}
<administratively transferred to [H10D 30/0413](#)>
- D H01L 29/6684 {with a ferroelectric gate insulator}
<administratively transferred to [H10D 30/0415](#)>
- D H01L 29/66848 {with a Schottky gate, i.e. MESFET}
<administratively transferred to [H10D 30/061](#) and [H10D 62/83](#)>
- D H01L 29/66856 {with an active layer made of a group 13/15 material (H01L 29/66446 takes precedence)}
<administratively transferred to [H10D 30/061](#)>
- D H01L 29/66863 {Lateral single gate transistors}
<administratively transferred to [H10D 30/0612](#)>
- D H01L 29/66871 {Processes wherein the final gate is made after the formation of the source and drain regions in the active layer, e.g. dummy-gate processes}
<administratively transferred to [H10D 30/0614](#)>

- D H01L 29/66878 {Processes wherein the final gate is made before the formation, e.g. activation anneal, of the source and drain regions in the active layer}
<administratively transferred to [H10D 30/0616](#)>
- D H01L 29/66886 {Lateral transistors with two or more independent gates}
<administratively transferred to [H10D 30/0618](#)>
- D H01L 29/66893 {with a PN junction gate, i.e. JFET}
<administratively transferred to [H10D 30/051](#)>
- D H01L 29/66901 {with a PN homojunction gate}
<administratively transferred to [H10D 30/0512](#)>
- D H01L 29/66909 {Vertical transistors, e.g. tecnetrans}
<administratively transferred to [H10D 30/0515](#)>
- D H01L 29/66916 {with a PN heterojunction gate}
<administratively transferred to [H10D 30/0516](#)>
- D H01L 29/66924 {with an active layer made of a group 13/15 material (H01L 29/66446 takes precedence)}
<administratively transferred to [H10D 30/051](#)>
- D H01L 29/66931 {BJT-like unipolar transistors, e.g. hot electron transistors [HET], metal base transistors [MBT], resonant tunneling transistor [RTT], bulk barrier transistor [BBT], planar doped barrier transistor [PDBT], charge injection transistor [CHINT]}
<administratively transferred to [H10D 48/032](#)>
- D H01L 29/66939 {with an active layer made of a group 13/15 material}
<administratively transferred to [H10D 48/032](#)>
- D H01L 29/66946 {Charge transfer devices}
<administratively transferred to [H10D 44/01](#)>
- D H01L 29/66954 {with an insulated gate}
<administratively transferred to [H10D 44/041](#)>
- D H01L 29/66962 {with a Schottky gate}
<administratively transferred to [H10D 44/061](#)>
- D H01L 29/66969 . . . {of devices having semiconductor bodies not comprising group 14 or group 13/15 materials (comprising selenium or tellurium in uncombined form other than as impurities in semiconductor bodies of other materials, comprising cuprous oxide or cuprous iodide H01L 21/02365)}
<administratively transferred to [H10D 99/00](#)>
- D H01L 29/66977 . . {Quantum effect devices, e.g. using quantum reflection, diffraction or interference effects, i.e. Bragg or Aharonov-Bohm effects}
<administratively transferred to [H10D 48/383](#)>
- D H01L 29/66984 . . {Devices using spin polarized carriers}
<administratively transferred to [H10D 48/385](#)>
- D H01L 29/66992 . . {controllable only by the variation of applied heat (controllable by IR radiation H01L 31/00; measuring quantity of heat G01K 17/00)}
<administratively transferred to [H10D 48/387](#)>

- D H01L 29/68
- • controllable by only the electric current supplied, or only the electric potential applied, to an electrode which does not carry the current to be rectified, amplified or switched
- <administratively transferred to [H10D 48/32](#)>
- D H01L 29/685
- • • {Hi-Lo semiconductor devices, e.g. memory devices}
- <administratively transferred to [H10D 48/366](#)>
- D H01L 29/70
- • • Bipolar devices
- <administratively transferred to [H10D 48/34](#)>
- D H01L 29/705
- • • • {Double base diodes}
- <administratively transferred to [H10D 48/341](#)>
- D H01L 29/72
- • • • Transistor-type devices, i.e. able to continuously respond to applied control signals
- <administratively transferred to [H10D 48/345](#)>
- D H01L 29/73
- • • • • Bipolar junction transistors
- <administratively transferred to [H10D 10/00](#)>
- D H01L 29/7302
- • • • • • {structurally associated with other devices (assemblies of devices H01L 25/00; integrated circuits H01L 27/00; IGBT H01L 29/7393)}
- <administratively transferred to [H10D 84/121](#)>
- D H01L 29/7304
- • • • • • {the device being a resistive element, e.g. ballasting resistor (transistors integrated with resistors H01L 27/075)}
- <administratively transferred to [H10D 84/125](#)>
- D H01L 29/7306
- • • • • • {Point contact transistors}
- <administratively transferred to [H10D 10/211](#)>
- D H01L 29/7308
- • • • • • {Schottky transistors}
- <administratively transferred to [H10D 10/221](#)>
- D H01L 29/7311
- • • • • • {Tunnel transistors}
- <administratively transferred to [H10D 10/231](#)>
- D H01L 29/7313
- • • • • • {Avalanche transistors}
- <administratively transferred to [H10D 10/241](#)>
- D H01L 29/7315
- • • • • • {Transistors with hook collector}
- <administratively transferred to [H10D 10/00](#)>
- D H01L 29/7317
- • • • • • {Bipolar thin film transistors}
- <administratively transferred to [H10D 10/311](#)>
- D H01L 29/732
- • • • • • Vertical transistors
- <administratively transferred to [H10D 10/40](#)>
- D H01L 29/7322
- • • • • • • {having emitter-base and base-collector junctions leaving at the same surface of the body, e.g. planar transistor}
- <administratively transferred to [H10D 10/421](#)>
- D H01L 29/7325
- • • • • • • {having an emitter-base junction leaving at a main surface and a base-collector junction leaving at a peripheral surface of the body, e.g. mesa planar transistor}
- <administratively transferred to [H10D 10/441](#)>
- D H01L 29/7327
- • • • • • • {Inverse vertical transistors}
- <administratively transferred to [H10D 10/461](#)>

- D H01L 29/735 Lateral transistors
<administratively transferred to [H10D 10/60](#)>
- D H01L 29/737 Hetero-junction transistors
<administratively transferred to [H10D 10/80](#)>
- D H01L 29/7371 {Vertical transistors}
<administratively transferred to [H10D 10/821](#)>
- D H01L 29/7373 {having a two-dimensional base, e.g. modulation-doped base, inversion layer base, delta-doped base}
<administratively transferred to [H10D 10/841](#)>
- D H01L 29/7375 {having an emitter comprising one or more non-monocrystalline elements of group IV, e.g. amorphous silicon, alloys comprising group IV elements}
<administratively transferred to [H10D 10/861](#)>
- D H01L 29/7376 {Resonant tunnelling transistors}
<administratively transferred to [H10D 10/881](#)>
- D H01L 29/7378 {comprising lattice mismatched active layers, e.g. SiGe strained layer transistors}
<administratively transferred to [H10D 10/891](#)>
- D H01L 29/739 controlled by field-effect, {e.g. bipolar static induction transistors [BSIT] (unijunction transistors H01L 29/705)}
<administratively transferred to [H10D 12/00](#)>
- D H01L 29/7391 {Gated diode structures}
<administratively transferred to [H10D 12/211](#)>
- D H01L 29/7392 {with PN junction gate, e.g. field controlled thyristors (FCTh), static induction thyristors (SITh)}
<administratively transferred to [H10D 12/212](#)>
- D H01L 29/7393 {Insulated gate bipolar mode transistors, i.e. IGBT; IGT; COMFET}
<administratively transferred to [H10D 12/411](#)>
- D H01L 29/7394 {on an insulating layer or substrate, e.g. thin film device or device isolated from the bulk substrate (H01L 29/7398 takes precedence)}
<administratively transferred to [H10D 12/421](#)>
- D H01L 29/7395 {Vertical transistors, e.g. vertical IGBT}
- NOTE
The transistor is called vertical if the emitter and the collector are not on the same main surface or, if they are on the same main surface, at least a part of the main current has a component substantially not parallel to the main surface
<administratively transferred to [H10D 12/441](#)>
- D H01L 29/7396 {with a non planar surface, e.g. with a non planar gate or with a trench or recess or pillar in the surface of the emitter, base or collector region for improving current density or short circuiting the emitter and base regions (H01L 29/7398 takes precedence)}
<administratively transferred to [H10D 12/461](#)>
- D H01L 29/7397 {and a gate structure lying on a slanted or vertical surface or formed in a groove, e.g. trench gate IGBT}
<administratively transferred to [H10D 12/481](#)>

D	H01L 29/7398	. . . . . {with both emitter and collector contacts in the same substrate side} <administratively transferred to H10D 12/491 >
D	H01L 29/74	. . . . Thyristor-type devices, e.g. having four-zone regenerative action {(two-terminal thyristors H01L 29/87)} <administratively transferred to H10D 18/00 >
D	H01L 29/7404	. . . . {structurally associated with at least one other device (assemblies H01L 25/00; integrated circuits H01L 27/00)} <administratively transferred to H10D 84/131 >
D	H01L 29/7408	. . . . . {the device being a capacitor or a resistor} <administratively transferred to H10D 84/133 >
D	H01L 29/7412	. . . . . {the device being a diode} <administratively transferred to H10D 84/135 >
D	H01L 29/7416	. . . . . {the device being an antiparallel diode, e.g. RCT (shorted anode structures enabling reverse conduction H01L 29/0834)} <administratively transferred to H10D 84/136 >
D	H01L 29/742	. . . . . {the device being a field-effect transistor (for turn-on or turn-off by field effect H01L 29/745, H01L 29/749)} <administratively transferred to H10D 84/138 >
D	H01L 29/7424	. . . . {having a built-in localised breakdown/breakover region, e.g. self-protected against destructive spontaneous, e.g. voltage breakover, firing} <administratively transferred to H10D 18/211 >
D	H01L 29/7428	. . . . {having an amplifying gate structure, e.g. cascade (Darlington) configuration} <administratively transferred to H10D 18/221 >
D	H01L 29/7432	. . . . {Asymmetrical thyristors (with a particular shorted anode structure H01L 29/0834)} <administratively transferred to H10D 18/241 >
D	H01L 29/7436	. . . . {Lateral thyristors} <administratively transferred to H10D 18/251 >
D	H01L 29/744	. . . . . Gate-turn-off devices <administratively transferred to H10D 18/60 >
D	H01L 29/745	. . . . . with turn-off by field effect <administratively transferred to H10D 18/65 >
D	H01L 29/7455	. . . . . {produced by an insulated gate structure} <administratively transferred to H10D 18/655 >
D	H01L 29/747	. . . . . Bidirectional devices, e.g. triacs <administratively transferred to H10D 18/80 >
D	H01L 29/749	. . . . . with turn-on by field effect <administratively transferred to H10D 18/40 >
D	H01L 29/76	. . . . Unipolar devices {, e.g. field-effect transistors} <administratively transferred to H10D 48/36 >
D	H01L 29/7606	. . . . {Transistor-like structures, e.g. hot electron transistor [HET]; metal base transistor [MBT]} <administratively transferred to H10D 48/362 >

- D H01L 29/7613 {Single electron transistors; Coulomb blockade devices (H01L 29/7888 takes precedence)}
<administratively transferred to [H10D 30/402](#)>
- D H01L 29/762 Charge transfer devices
<administratively transferred to [H10D 44/00](#)>
- D H01L 29/765 Charge-coupled devices {(peripheral circuits for CCD storage devices G11C 19/285)}
<administratively transferred to [H10D 44/40](#)>
- D H01L 29/768 with field effect produced by an insulated gate
<administratively transferred to [H10D 44/45](#)>
- D H01L 29/76808 {Input structures}
<administratively transferred to [H10D 44/452](#)>
- D H01L 29/76816 {Output structures}
<administratively transferred to [H10D 44/454](#)>
- D H01L 29/76825 {Structures for regeneration, refreshing, leakage compensation or the like}
<administratively transferred to [H10D 44/456](#)>
- D H01L 29/76833 {Buried channel CCD}
<administratively transferred to [H10D 44/462](#)>
- D H01L 29/76841 {Two-Phase CCD}
<administratively transferred to [H10D 44/464](#)>
- D H01L 29/7685 {Three-Phase CCD}
<administratively transferred to [H10D 44/466](#)>
- D H01L 29/76858 {Four-Phase CCD}
<administratively transferred to [H10D 44/468](#)>
- D H01L 29/76866 {Surface Channel CCD}
<administratively transferred to [H10D 44/472](#)>
- D H01L 29/76875 {Two-Phase CCD}
<administratively transferred to [H10D 44/474](#)>
- D H01L 29/76883 {Three-Phase CCD}
<administratively transferred to [H10D 44/476](#)>
- D H01L 29/76891 {Four-Phase CCD}
<administratively transferred to [H10D 44/478](#)>
- D H01L 29/772 Field effect transistors
<administratively transferred to [H10D 30/00](#)>
- D H01L 29/7722 {using static field induced regions, e.g. SIT, PBT}
<administratively transferred to [H10D 30/202](#)>
- D H01L 29/7725 {with delta-doped channel (H01L 29/778 takes precedence)}
<administratively transferred to [H10D 62/228](#)>
- D H01L 29/7727 {Velocity modulation transistors, i.e. VMT}
<administratively transferred to [H10D 30/204](#)>
- D H01L 29/775 with one dimensional charge carrier gas channel, e.g. quantum wire FET
<administratively transferred to [H10D 30/43](#)>

- D H01L 29/778 with two-dimensional charge carrier gas channel, e.g. HEMT {; with two-dimensional charge-carrier layer formed at a heterojunction interface (H01L 29/803 takes precedence)}
<administratively transferred to [H10D 30/47](#)>
- D H01L 29/7781 {with inverted single heterostructure, i.e. with active layer formed on top of wide bandgap layer, e.g. IHEMT}
<administratively transferred to [H10D 30/472](#)>
- D H01L 29/7782 {with confinement of carriers by at least two heterojunctions, e.g. DHHEMT, quantum well HEMT, DHMODFET}
<administratively transferred to [H10D 30/473](#)>
- D H01L 29/7783 {using III-V semiconductor material}
<administratively transferred to [H10D 30/4732](#)>
- D H01L 29/7784 {with delta or planar doped donor layer (H01L 29/7785 takes precedence)}
<administratively transferred to [H10D 30/4735](#)>
- D H01L 29/7785 {with more than one donor layer}
<administratively transferred to [H10D 30/4738](#)>
- D H01L 29/7786 {with direct single heterostructure, i.e. with wide bandgap layer formed on top of active layer, e.g. direct single heterostructure MIS-like HEMT}
<administratively transferred to [H10D 30/475](#)>
- D H01L 29/7787 {with wide bandgap charge-carrier supplying layer, e.g. direct single heterostructure MODFET}
<administratively transferred to [H10D 30/4755](#)>
- D H01L 29/7788 {Vertical transistors}
<administratively transferred to [H10D 30/477](#)>
- D H01L 29/7789 {the two-dimensional charge carrier gas being at least partially not parallel to a main surface of the semiconductor body}
<administratively transferred to [H10D 30/478](#)>
- D H01L 29/78 with field effect produced by an insulated gate {(H01L 29/7725, H01L 29/775, H01L 29/778 take precedence)}
<administratively transferred to [H10D 30/60](#)>
- D H01L 29/7801 {DMOS transistors, i.e. MISFETs with a channel accommodating body or base region adjoining a drain drift region (lateral high-voltage MISFETs with channel well and drain offset region H01L 29/7835)}
<administratively transferred to [H10D 30/64](#)>
- D H01L 29/7802 {Vertical DMOS transistors, i.e. VDMOS transistors}
<administratively transferred to [H10D 30/66](#)>
- D H01L 29/7803 {structurally associated with at least one other device (assemblies H01L 25/00; integrated circuits H01L 27/00)}
- WARNING**
Groups H01L 29/7803—H01L 29/7808 are incomplete pending reclassification of documents from group H01L 29/7802.
Groups H01L 29/7803—H01L 29/7808 and H01L 29/7802 should be considered in order to perform a complete search.
<administratively transferred to [H10D 84/141](#)>

- D H01L 29/7804 {the other device being a pn-junction diode}
<administratively transferred to [H10D 84/143](#)>
- D H01L 29/7805 {in antiparallel, e.g. freewheel diode}
<administratively transferred to [H10D 84/144](#)>
- D H01L 29/7806 {the other device being a Schottky barrier diode}
<administratively transferred to [H10D 84/146](#)>
- D H01L 29/7808 {the other device being a breakdown diode, e.g. Zener diode}
<administratively transferred to [H10D 84/148](#)>
- D H01L 29/7809 {having both source and drain contacts on the same surface, i.e. Up-Drain VDMOS transistors}
<administratively transferred to [H10D 30/663](#)>
- D H01L 29/781 {Inverted VDMOS transistors, i.e. Source-Down VDMOS transistors}
<administratively transferred to [H10D 30/664](#)>
- D H01L 29/7811 {with an edge termination structure (guard regions per se H01L 29/0619; field plates per se H01L 29/402)}
WARNING
Group H01L 29/7811 is incomplete pending reclassification of documents from group H01L 29/7802.
Groups H01L 29/7811 and H01L 29/7802 should be considered in order to perform a complete search.
<administratively transferred to [H10D 30/665](#)>
- D H01L 29/7812 {with a substrate comprising an insulating layer, e.g. SOI-VDMOS transistors}
<administratively transferred to [H10D 30/667](#)>
- D H01L 29/7813 {with trench gate electrode, e.g. UMOS transistors (trench gate electrodes per se H01L 29/4236)}
<administratively transferred to [H10D 30/668](#)>
- D H01L 29/7815 {with voltage or current sensing structure, e.g. emulator section, overcurrent sensing cell}
WARNING
Group H01L 29/7815 is incomplete pending reclassification of documents from group H01L 29/7802.
Groups H01L 29/7815 and H01L 29/7802 should be considered in order to perform a complete search.
<administratively transferred to [H10D 30/669](#)>
- D H01L 29/7816 {Lateral DMOS transistors, i.e. LDMOS transistors}
<administratively transferred to [H10D 30/65](#)>
- D H01L 29/7817 {structurally associated with at least one other device (assemblies H01L 25/00; integrated circuits H01L 27/00)}
<administratively transferred to [H10D 84/151](#)>
- D H01L 29/7818 {the other device being a pn-junction diode}
<administratively transferred to [H10D 84/153](#)>
- D H01L 29/7819 {in antiparallel, e.g. freewheel diode}
<administratively transferred to [H10D 84/154](#)>

- D H01L 29/782 {the other device being a Schottky barrier diode}
<administratively transferred to [H10D 84/156](#)>
- D H01L 29/7821 {the other device being a breakdown diode, e.g. Zener diode}
<administratively transferred to [H10D 84/158](#)>
- D H01L 29/7823 {with an edge termination structure (guard regions per se H01L 29/0619; field plates per se H01L 29/402)}
<administratively transferred to [H10D 30/655](#)>
- D H01L 29/7824 {with a substrate comprising an insulating layer, e.g. SOI-LDMOS transistors}
<administratively transferred to [H10D 30/657](#)>
- D H01L 29/7825 {with trench gate electrode (trench gate electrodes per se H01L 29/4236)}
<administratively transferred to [H10D 30/658](#)>
- D H01L 29/7826 {with voltage or current sensing structure, e.g. emulator section, overcurrent sensing cell}
<administratively transferred to [H10D 30/659](#)>
- D H01L 29/7827 {Vertical transistors (H01L 29/7802, H01L 29/78642 take precedence)}
<administratively transferred to [H10D 30/63](#)>
- D H01L 29/7828 {without inversion channel, e.g. vertical ACCUFETs, normally-on vertical MISFETs}
<administratively transferred to [H10D 30/635](#)>
- D H01L 29/783 {comprising a gate to body connection, i.e. bulk dynamic threshold voltage MOSFET (for thin film transistors H01L 29/78612; H01L 29/78696)}
<administratively transferred to [H10D 30/721](#)>
- D H01L 29/7831 {with multiple gate structure (FinFETs or MuGFETs H01L 29/7855; thin film transistors H01L 29/78645)}
<administratively transferred to [H10D 30/611](#)>
- D H01L 29/7832 {the structure comprising a MOS gate and at least one non-MOS gate, e.g. JFET or MESFET gate}
<administratively transferred to [H10D 30/615](#)>
- D H01L 29/7833 {with lightly doped drain or source extension, e.g. LDD MOSFET's; DDD MOSFET's (for thin film transistors H01L 29/78618)}
<administratively transferred to [H10D 30/601](#)>
- D H01L 29/7834 {with a non-planar structure, e.g. the gate or the source or the drain being non-planar}
NOTE
Field oxide sunken in the substrate and not filling a groove is not an element characterising a non-planar structure
<administratively transferred to [H10D 30/608](#)>
- D H01L 29/7835 {with asymmetrical source and drain regions, e.g. lateral high-voltage MISFETs with drain offset region, extended drain MISFETs}
<administratively transferred to [H10D 30/603](#)>
- D H01L 29/7836 {with a significant overlap between the lightly doped extension and the gate electrode (H01L 29/7834, H01L 29/7835 take precedence)}
<administratively transferred to [H10D 30/605](#)>

- D H01L 29/7838 {without inversion channel, e.g. buried channel lateral MISFETs, normally-on lateral MISFETs, depletion-mode lateral MISFETs}
<administratively transferred to [H10D 30/637](#)>
- D H01L 29/7839 {with Schottky drain or source contact}
<administratively transferred to [H10D 64/647](#)>
- D H01L 29/78391 {the gate comprising a layer which is used for its ferroelectric properties}
<administratively transferred to [H10D 30/701](#)>
- D H01L 29/7841 {with floating body, e.g. programmable transistors}
<administratively transferred to [H10D 30/711](#)>
- D H01L 29/7842 {means for exerting mechanical stress on the crystal lattice of the channel region, e.g. using a flexible substrate (variation of the composition of the channel H01L 29/1054)}
<administratively transferred to [H10D 30/791](#)>
- D H01L 29/7843 {the means being an applied insulating layer}
<administratively transferred to [H10D 30/792](#)>
- D H01L 29/7845 {the means being a conductive material, e.g. silicided S/D or Gate}
<administratively transferred to [H10D 30/794](#)>
- D H01L 29/7846 {the means being located in the lateral device isolation region, e.g. STI}
<administratively transferred to [H10D 30/795](#)>
- D H01L 29/7847 {using a memorization technique, e.g. re-crystallization under strain, bonding on a substrate having a thermal expansion coefficient different from the one of the region}
<administratively transferred to [H10D 30/796](#)>
- D H01L 29/7848 {the means being located in the source/drain region, e.g. SiGe source and drain}
<administratively transferred to [H10D 30/797](#)>
- D H01L 29/7849 {the means being provided under the channel}
<administratively transferred to [H10D 30/798](#)>
- D H01L 29/785 {having a channel with a horizontal current flow in a vertical sidewall of a semiconductor body, e.g. FinFET, MuGFET}
<administratively transferred to [H10D 30/62](#)>
- D H01L 29/7851 {with the body tied to the substrate}
<administratively transferred to [H10D 30/6211](#)>
- D H01L 29/7853 {the body having a non-rectangular cross-section}
<administratively transferred to [H10D 30/6212](#)>
- D H01L 29/7854 {with rounded corners}
<administratively transferred to [H10D 30/6213](#)>
- D H01L 29/7855 {with at least two independent gates}
<administratively transferred to [H10D 30/6215](#)>
- D H01L 29/7856 {with an non-uniform gate, e.g. varying doping structure, shape or composition on different sides of the fin, or different gate insulator thickness or composition on opposing fin sides (H01L 29/7855 takes precedence)}
<administratively transferred to [H10D 30/6217](#)>

- D H01L 2029/7857 {of the accumulation type}
<administratively transferred to [H10D 30/6218](#)>
- D H01L 2029/7858 {having contacts specially adapted to the FinFET geometry, e.g. wrap-around contacts}
<administratively transferred to [H10D 30/6219](#)>
- D H01L 29/786 Thin film transistors, {i.e. transistors with a channel being at least partly a thin film (transistors having only the source or the drain region on an insulator layer H01L 29/0653; thin film FinFETs H01L 29/785)}
- NOTE
In groups H01L 29/78651 – H01L 29/78696, the materials specified for the transistors are the material of the channel region
<administratively transferred to [H10D 30/67](#)>
- D H01L 29/78603 {characterised by the insulating substrate or support (H01L 29/78657 takes precedence)}
<administratively transferred to [H10D 30/6758](#)>
- D H01L 29/78606 {with supplementary region or layer in the thin film or in the insulated bulk substrate supporting it for controlling or increasing the safety of the device (H01L 29/78642, H01L 29/78645 take precedence)}
<administratively transferred to [H10D 30/6704](#)>
- D H01L 29/78609 {for preventing leakage current (H01L 29/78618 takes precedence)}
<administratively transferred to [H10D 30/6706](#)>
- D H01L 29/78612 {for preventing the kink- or the snapback effect, e.g. discharging the minority carriers of the channel region for preventing bipolar effect}
<administratively transferred to [H10D 30/6708](#)>
- D H01L 29/78615 {with a body contact}
<administratively transferred to [H10D 30/6711](#)>
- D H01L 29/78618 {characterised by the drain or the source properties, e.g. the doping structure, the composition, the sectional shape or the contact structure (silicide contacts, electrodes in general H01L 29/458)}
<administratively transferred to [H10D 30/6713](#)>
- D H01L 29/78621 {with LDD structure or an extension or an offset region or characterised by the doping profile}
<administratively transferred to [H10D 30/6715](#)>
- D H01L 29/78624 {the source and the drain regions being asymmetrical}
<administratively transferred to [H10D 30/6717](#)>
- D H01L 29/78627 {with a significant overlap between the lightly doped drain and the gate electrode, e.g. GOLDD}
<administratively transferred to [H10D 30/6719](#)>
- D H01L 2029/7863 {with an LDD consisting of more than one lightly doped zone or having a non-homogeneous dopant distribution, e.g. graded LDD}
<administratively transferred to [H10D 30/6721](#)>
- D H01L 29/78633 {with a light shield}
<administratively transferred to [H10D 30/6723](#)>

- D H01L 29/78636 {with supplementary region or layer for improving the flatness of the device}
<administratively transferred to [H10D 30/6725](#)>
- D H01L 29/78639 {with a drain or source connected to a bulk conducting substrate}
<administratively transferred to [H10D 30/6727](#)>
- D H01L 29/78642 {Vertical transistors}
<administratively transferred to [H10D 30/6728](#)>
- D H01L 29/78645 {with multiple gate}
<administratively transferred to [H10D 30/6733](#)>
- D H01L 29/78648 {arranged on opposing sides of the channel}
<administratively transferred to [H10D 30/6734](#)>
- D H01L 29/78651 {Silicon transistors (H01L 29/78606 – H01L 29/78645 take precedence)}
<administratively transferred to [H10D 30/6743](#)>
- D H01L 29/78654 {Monocrystalline silicon transistors}
<administratively transferred to [H10D 30/6744](#)>
- D H01L 29/78657 {SOS transistors}
<administratively transferred to [H10D 30/6759](#)>
- D H01L 29/7866 {Non-monocrystalline silicon transistors}
<administratively transferred to [H10D 30/6743](#)>
- D H01L 29/78663 {Amorphous silicon transistors}
<administratively transferred to [H10D 30/6746](#)>
- D H01L 29/78666 {with normal type structure, e.g. with top gate}
<administratively transferred to [H10D 30/6731](#) and [H10D 30/6746](#)>
- D H01L 29/78669 {with inverted type structure, e.g. with bottom gate}
<administratively transferred to [H10D 30/6732](#) and [H10D 30/6746](#)>
- D H01L 29/78672 {Polycrystalline or microcrystalline silicon transistor}
<administratively transferred to [H10D 30/6745](#)>
- D H01L 29/78675 {with normal type structure, e.g. with top gate}
<administratively transferred to [H10D 30/6731](#) and [H10D 30/6745](#)>
- D H01L 29/78678 {with inverted type structure, e.g. with bottom gate}
<administratively transferred to [H10D 30/6732](#) and [H10D 30/6745](#)>
- D H01L 29/78681 {having a semiconductor body comprising $A_{III}B_V$ or $A_{III}B_{VI}$ or $A_{IV}B_{VI}$ semiconductor materials, or Se or Te}
<administratively transferred to [H10D 30/675](#)>
- D H01L 29/78684 {having a semiconductor body comprising semiconductor materials of Group IV not being silicon, or alloys including an element of the group IV, e.g. Ge, SiN alloys, SiC alloys (H01L 29/7869 takes precedence)}
<administratively transferred to [H10D 30/6741](#)>
- D H01L 29/78687 {with a multilayer structure or superlattice structure}
<administratively transferred to [H10D 30/6748](#)>

- D H01L 29/7869 {having a semiconductor body comprising an oxide semiconductor material, e.g. zinc oxide, copper aluminium oxide, cadmium stannate}
<administratively transferred to [H10D 30/6755](#)>
- D H01L 29/78693 {the semiconducting oxide being amorphous}
<administratively transferred to [H10D 30/6756](#)>
- D H01L 29/78696 {characterised by the structure of the channel, e.g. multichannel, transverse or longitudinal shape, length or width, doping structure, or the overlap or alignment between the channel and the gate, the source or the drain, or the contacting structure of the channel (H01L 29/78612 takes precedence; transistors having a drain offset region or a lightly doped drain [LDD] H01L 29/78621)}
<administratively transferred to [H10D 30/6757](#)>
- D H01L 29/788 with floating gate {(H01L 29/78391 takes precedence)}
<administratively transferred to [H10D 30/68](#)>
- D H01L 29/7881 {Programmable transistors with only two possible levels of programming (H01L 29/7888 takes precedence)}
<administratively transferred to [H10D 30/681](#)>
- D H01L 29/7882 {charging by injection of carriers through a conductive insulator, e.g. Poole-Frankel conduction}
<administratively transferred to [H10D 30/682](#)>
- D H01L 29/7883 {charging by tunnelling of carriers, e.g. Fowler-Nordheim tunnelling}
<administratively transferred to [H10D 30/683](#)>
- D H01L 29/7884 {charging by hot carrier injection}
<administratively transferred to [H10D 30/684](#)>
- D H01L 29/7885 {Hot carrier injection from the channel}
<administratively transferred to [H10D 30/685](#)>
- D H01L 29/7886 {Hot carrier produced by avalanche breakdown of a PN junction, e.g. FAMOS}
<administratively transferred to [H10D 30/686](#)>
- D H01L 29/7887 {Programmable transistors with more than two possible different levels of programming}
<administratively transferred to [H10D 30/687](#)>
- D H01L 29/7888 {Transistors programmable by two single electrons}
<administratively transferred to [H10D 30/688](#)>
- D H01L 29/7889 {Vertical transistors, i.e. transistors having source and drain not in the same horizontal plane}
<administratively transferred to [H10D 30/689](#)>
- D H01L 29/792 with charge trapping gate insulator, e.g. MNOS-memory transistors
<administratively transferred to [H10D 30/69](#)>
- D H01L 29/7923 {Programmable transistors with more than two possible different levels of programming}
<administratively transferred to [H10D 30/691](#)>
- D H01L 29/7926 {Vertical transistors, i.e. transistors having source and drain not in the same horizontal plane}
<administratively transferred to [H10D 30/693](#)>

- D H01L 29/80 with field-effect produced by a PN or other rectifying junction gate {, i.e. potential-jump barrier}
<administratively transferred to [H10D 30/80](#)>
- D H01L 29/802 {with heterojunction gate, e.g. transistors with semiconductor layer acting as gate insulating layer, MIS-like transistors (H01L 29/806 takes precedence; with one dimensional electron gas H01L 29/775; with dimensional electron gas H01L 29/778)}
<administratively transferred to [H10D 30/801](#)>
- D H01L 29/803 {Programmable transistors, e.g. with charge-trapping quantum well}
<administratively transferred to [H10D 30/803](#)>
- D H01L 29/806 {with Schottky drain or source contact}
<administratively transferred to [H10D 64/649](#)>
- D H01L 29/808 with a PN junction gate {, e.g. PN homojunction gate (H01L 29/7725, H01L 29/775, H01L 29/778, H01L 29/806 take precedence)}
<administratively transferred to [H10D 30/83](#)>
- D H01L 29/8083 {Vertical transistors (SIT H01L 29/7722)}
<administratively transferred to [H10D 30/831](#)>
- D H01L 29/8086 {Thin film JFET's}
<administratively transferred to [H10D 30/832](#)>
- D H01L 29/812 with a Schottky gate {(H01L 29/7725, H01L 29/775, H01L 29/778, H01L 29/806 take precedence; with Schottky contact on top of heterojunction gate H01L 29/802)}
<administratively transferred to [H10D 30/87](#)>
- D H01L 29/8122 {Vertical transistors (SIT, PBT H01L 29/7722)}
<administratively transferred to [H10D 30/871](#)>
- D H01L 29/8124 {with multiple gate}
<administratively transferred to [H10D 30/873](#)>
- D H01L 29/8126 {Thin film MESFET's}
<administratively transferred to [H10D 30/875](#)>
- D H01L 29/8128 {with recessed gate}
<administratively transferred to [H10D 30/877](#)>
- D H01L 29/82 controllable by variation of the magnetic field applied to the device
<administratively transferred to [H10D 48/40](#)>
- D H01L 29/84 controllable by variation of applied mechanical force, e.g. of pressure
<administratively transferred to [H10D 48/50](#)>
- D H01L 29/86 controllable only by variation of the electric current supplied, or only the electric potential applied, to one or more of the electrodes carrying the current to be rectified, amplified, oscillated or switched
<administratively transferred to [H10D 1/40](#)>
- D H01L 29/8605 Resistors with PN junctions
<administratively transferred to [H10D 1/43](#)>
- D H01L 29/861 Diodes
<administratively transferred to [H10D 8/00](#)>
- D H01L 29/8611 {Planar PN junction diodes}
<administratively transferred to [H10D 8/411](#)>

- D H01L 29/8613 {Mesa PN junction diodes}
<administratively transferred to [H10D 8/422](#)>
- D H01L 29/8615 {Hi-lo semiconductor devices, e.g. memory devices}
<administratively transferred to [H10D 48/381](#)>
- D H01L 29/8616 {Charge trapping diodes}
<administratively transferred to [H10D 8/812](#)>
- D H01L 29/8618 {Diodes with bulk potential barrier, e.g. Camel diodes, Planar Doped Barrier diodes, Graded bandgap diodes}
<administratively transferred to [H10D 8/825](#)>
- D H01L 29/862 Point contact diodes
<administratively transferred to [H10D 8/30](#)>
- D H01L 29/864 Transit-time diodes, e.g. IMPATT, TRAPATT diodes
<administratively transferred to [H10D 8/40](#)>
- D H01L 29/866 Zener diodes
<administratively transferred to [H10D 8/25](#)>
- D H01L 29/868 PIN diodes
<administratively transferred to [H10D 8/50](#)>
- D H01L 29/87 Thyristor diodes, e.g. Shockley diodes, break-over diodes
<administratively transferred to [H10D 8/80](#)>
- D H01L 29/872 Schottky diodes
<administratively transferred to [H10D 8/60](#)>
- D H01L 29/8725 {of the trench MOS barrier type [TMBS]}
<administratively transferred to [H10D 8/605](#)>
- D H01L 29/88 Tunnel-effect diodes
<administratively transferred to [H10D 8/70](#)>
- D H01L 29/882 {Resonant tunneling diodes, i.e. RTD, RTBD}
<administratively transferred to [H10D 8/755](#)>
- D H01L 29/885 Esaki diodes
<administratively transferred to [H10D 8/75](#)>
- D H01L 29/92 . . . Capacitors having potential barriers
<administratively transferred to [H10D 1/62](#)>
- D H01L 29/93 Variable capacitance diodes, e.g. varactors
<administratively transferred to [H10D 1/64](#)>
- D H01L 29/94 Metal-insulator-semiconductors, e.g. MOS
<administratively transferred to [H10D 1/66](#)>
- D H01L 29/945 {Trench capacitors}
<administratively transferred to [H10D 1/665](#)>

Project: RP12333 (H01L)

- D H01L 31/00** **Semiconductor devices sensitive to infrared radiation, light, electromagnetic radiation of shorter wavelength or corpuscular radiation and specially adapted either for the conversion of the energy of such radiation into electrical energy or for the control of electrical energy by such radiation; Processes or apparatus specially adapted for the manufacture or treatment thereof or of parts thereof; Details thereof (H10K 30/00 takes precedence; devices consisting of a plurality of solid state components formed in, or on, a common substrate, other than combinations of radiation-sensitive components with one or more electric light sources, H01L 27/00)**
<administratively transferred to [H10F 99/00](#)>
- D H01L 31/02** **. Details**
<administratively transferred to [H10F 77/00](#)>
- D H01L 31/02002** **. {Arrangements for conducting electric current to or from the device in operations}**
<administratively transferred to [H10F 77/93](#)>
- D H01L 31/02005** **. . {for device characterised by at least one potential jump barrier or surface barrier}**
<administratively transferred to [H10F 77/933](#)>
- D H01L 31/02008** **. . . {for solar cells or solar cell modules}**
<administratively transferred to [H10F 77/935](#)>
- D H01L 31/0201** **. . . . {comprising specially adapted module bus-bar structures}**
<administratively transferred to [H10F 77/937](#)>
- D H01L 31/02013** **. . . . {comprising output lead wires elements}**
<administratively transferred to [H10F 77/939](#)>
- D H01L 31/02016** **. {Circuit arrangements of general character for the devices}**
<administratively transferred to [H10F 77/95](#)>
- D H01L 31/02019** **. . {for devices characterised by at least one potential jump barrier or surface barrier}**
<administratively transferred to [H10F 77/953](#)>
- D H01L 31/02021** **. . . {for solar cells (electrical connection means, e.g. junction boxes, specially adapted for structural association with photovoltaic modules H02S 40/34)}**
<administratively transferred to [H10F 77/955](#)>
- D H01L 31/02024** **. . . {Position sensitive and lateral effect photodetectors; Quadrant photodiodes}**
<administratively transferred to [H10F 77/957](#)>
- D H01L 31/02027** **. . . {for devices working in avalanche mode}**
<administratively transferred to [H10F 77/959](#)>
- D H01L 31/0203** **. . Containers; Encapsulations (, e.g. encapsulation of photodiodes){for photovoltaic devices H01L 31/048; for organic photosensitive devices H10K 30/80}**
<administratively transferred to [H10F 77/50](#)>
- D H01L 31/0216** **. . Coatings (H01L 31/041 takes precedence)**
<administratively transferred to [H10F 77/30](#)>

- D H01L 31/02161 . . . {for devices characterised by at least one potential jump barrier or surface barrier}
<administratively transferred to [H10F 77/306](#)>
- D H01L 31/02162 . . . {for filtering or shielding light, e.g. multicolour filters for photodetectors}
<administratively transferred to [H10F 77/331](#)>
- D H01L 31/02164 . . . {for shielding light, e.g. light blocking layers, cold shields for infrared detectors}
<administratively transferred to [H10F 77/334](#)>
- D H01L 31/02165 . . . {using interference filters, e.g. multilayer dielectric filters (interference filters G02B 5/28)}
<administratively transferred to [H10F 77/337](#)>
- D H01L 31/02167 . . . {for solar cells}
<administratively transferred to [H10F 77/311](#)>
- D H01L 31/02168 . . . {the coatings being antireflective or having enhancing optical properties for the solar cells}
<administratively transferred to [H10F 77/315](#)>
- D H01L 31/0224 . . Electrodes
<administratively transferred to [H10F 77/20](#)>
- D H01L 31/022408 . . . {for devices characterised by at least one potential jump barrier or surface barrier}
<administratively transferred to [H10F 77/206](#)>
- D H01L 31/022416 . . . {comprising ring electrodes}
<administratively transferred to [H10F 77/241](#)>
- D H01L 31/022425 . . . {for solar cells}
<administratively transferred to [H10F 77/211](#)>
- D H01L 31/022433 . . . {Particular geometry of the grid contacts}
<administratively transferred to [H10F 77/215](#)>
- D H01L 31/022441 . . . {Electrode arrangements specially adapted for back-contact solar cells}
<administratively transferred to [H10F 77/219](#)>
- D H01L 31/02245 . . . {for metallisation wrap-through [MWT] type solar cells}
<administratively transferred to [H10F 77/223](#)>
- D H01L 31/022458 . . . {for emitter wrap-through [EWT] type solar cells, e.g. interdigitated emitter-base back-contacts}
<administratively transferred to [H10F 77/227](#)>
- D H01L 31/022466 . . . {made of transparent conductive layers, e.g. TCO, ITO layers}
<administratively transferred to [H10F 77/244](#)>
- D H01L 31/022475 . . . {composed of indium tin oxide [ITO]}
<administratively transferred to [H10F 77/247](#)>
- D H01L 31/022483 . . . {composed of zinc oxide [ZnO]}
<administratively transferred to [H10F 77/251](#)>
- D H01L 31/022491 . . . {composed of a thin transparent metal layer, e.g. gold}
<administratively transferred to [H10F 77/254](#)>

- D H01L 31/0232
- • Optical elements or arrangements associated with the device (H01L 31/0236 takes precedence; for photovoltaic cells H01L 31/054; for photovoltaic modules H02S 40/20)
- <administratively transferred to [H10F 77/40](#)>
- D H01L 31/02322
- • • {comprising luminescent members, e.g. fluorescent sheets upon the device}
- <administratively transferred to [H10F 77/496](#)>
- D H01L 31/02325
- • • {the optical elements not being integrated nor being directly associated with the device}
- <administratively transferred to [H10F 77/407](#)>
- D H01L 31/02327
- • • {the optical elements being integrated or being directly associated to the device, e.g. back reflectors (optical coatings H01L 31/0216)}
- <administratively transferred to [H10F 77/413](#)>
- D H01L 31/0236
- • Special surface textures
- <administratively transferred to [H10F 77/70](#)>
- D H01L 31/02363
- • • {of the semiconductor body itself, e.g. textured active layers}
- <administratively transferred to [H10F 77/703](#)>
- D H01L 31/02366
- • • {of the substrate or of a layer on the substrate, e.g. textured ITO/glass substrate or superstrate, textured polymer layer on glass substrate}
- <administratively transferred to [H10F 77/707](#)>
- D H01L 31/024
- • Arrangements for cooling, heating, ventilating or temperature compensation (for photovoltaic devices H01L 31/052)
- <administratively transferred to [H10F 77/60](#)>
- D H01L 31/0248
- characterised by their semiconductor bodies
- <administratively transferred to [H10F 77/10](#)>
- D H01L 31/0256
- • characterised by the material
- <administratively transferred to [H10F 77/12](#)>
- D H01L 31/0264
- • • Inorganic materials
- <administratively transferred to [H10F 77/12](#)>
- D H01L 31/0272
- • • • Selenium or tellurium
- <administratively transferred to [H10F 77/121](#)>
- D H01L 31/02725
- • • • • {characterised by the doping material}
- <administratively transferred to [H10F 77/1215](#)>
- D H01L 31/028
- • • • including, apart from doping material or other impurities, only elements of Group IV of the Periodic Table
- <administratively transferred to [H10F 77/122](#)>
- D H01L 31/0284
- • • • • {comprising porous silicon as part of the active layer(s) (porous silicon as antireflective layer for photodiodes H01L 31/0216; for solar cells H01L 31/02168)}
- <administratively transferred to [H10F 77/1228](#)>
- D H01L 31/0288
- • • • • characterised by the doping material
- <administratively transferred to [H10F 77/1223](#)>
- D H01L 31/0296
- • • • including, apart from doping material or other impurities, only $A_{II}B_{VI}$ compounds, e.g. CdS, ZnS, HgCdTe
- <administratively transferred to [H10F 77/123](#)>
- D H01L 31/02963
- • • • • {characterised by the doping material}
- <administratively transferred to [H10F 77/1233](#)>

- D H01L 31/02966 {including ternary compounds, e.g. HgCdTe}
<administratively transferred to [H10F 77/1237](#)>
- D H01L 31/0304 including, apart from doping materials or other impurities, only $A_{III}B_V$ compounds
<administratively transferred to [H10F 77/124](#)>
- D H01L 31/03042 {characterised by the doping material}
<administratively transferred to [H10F 77/1243](#)>
- D H01L 31/03044 {comprising a nitride compounds, e.g. GaN}
<administratively transferred to [H10F 77/1246](#)>
- D H01L 31/03046 {including ternary or quaternary compounds, e.g. GaAlAs, InGaAs, InGaAsP}
<administratively transferred to [H10F 77/1248](#)>
- D H01L 31/03048 {comprising a nitride compounds, e.g. InGaN}
<administratively transferred to [H10F 77/12485](#)>
- D H01L 31/0312 including, apart from doping materials or other impurities, only $A_{IV}B_{IV}$ compounds, e.g. SiC
<administratively transferred to [H10F 77/1226](#)>
- D H01L 31/03125 {characterised by the doping material}
<administratively transferred to [H10F 77/1227](#)>
- D H01L 31/032 including, apart from doping materials or other impurities, only compounds not provided for in groups H01L 31/0272 - H01L 31/0312
<administratively transferred to [H10F 77/12](#)>
- D H01L 31/0321 {characterised by the doping material (H01L 31/0323, H01L 31/0325 take precedence)}
<administratively transferred to [H10F 77/12](#)>
- D H01L 31/0322 {comprising only $A_I B_{III} C_{VI}$ chalcopyrite compounds, e.g. Cu In Se₂, Cu Ga Se₂, Cu In Ga Se₂}
<administratively transferred to [H10F 77/126](#)>
- D H01L 31/0323 {characterised by the doping material}
<administratively transferred to [H10F 77/1265](#)>
- D H01L 31/0324 {comprising only $A_{IV}B_{VI}$ or $A_{II}B_{IV}C_{VI}$ chalcogenide compounds, e.g. Pb Sn Te}
<administratively transferred to [H10F 77/127](#)>
- D H01L 31/0325 {characterised by the doping material}
<administratively transferred to [H10F 77/1275](#)>
- D H01L 31/0326 {comprising $A_I B_{II} C_{IV} D_{VI}$ kesterite compounds, e.g. Cu₂ZnSnSe₄, Cu₂ZnSnS₄}
<administratively transferred to [H10F 77/128](#)>
- D H01L 31/0327 {characterised by the doping material}
<administratively transferred to [H10F 77/1285](#)>
- D H01L 31/0328 including, apart from doping materials or other impurities, semiconductor materials provided for in two or more of groups H01L 31/0272 - H01L 31/032
<administratively transferred to [H10F 77/12](#)>

- D H01L 31/0336 in different semiconductor regions, e.g. $\text{Cu}_2\text{X}/\text{CdX}$ hetero- junctions, X being an element of Group VI of the Periodic Table
<administratively transferred to [H10F 10/16](#)>
- D H01L 31/03365 {comprising only $\text{Cu}_2\text{X} / \text{CdX}$ heterojunctions, X being an element of Group VI of the Periodic Table}
<administratively transferred to [H10F 10/169](#)>
- D H01L 2031/0344 . . . {Organic materials}
- D H01L 31/0352 . . characterised by their shape or by the shapes, relative sizes or disposition of the semiconductor regions
<administratively transferred to [H10F 77/14](#)>
- D H01L 31/035209 . . . {comprising a quantum structures}
<administratively transferred to [H10F 77/143](#)>
- D H01L 31/035218 {the quantum structure being quantum dots}
<administratively transferred to [H10F 77/1433](#)>
- D H01L 31/035227 {the quantum structure being quantum wires, or nanorods (carbon nanotubes H10K 85/211)}
<administratively transferred to [H10F 77/1437](#)>
- D H01L 31/035236 . . . {Superlattices; Multiple quantum well structures}
<administratively transferred to [H10F 77/146](#)>
- D H01L 31/035245 {characterised by amorphous semiconductor layers}
<administratively transferred to [H10F 77/1462](#)>
- D H01L 31/035254 {including, apart from doping materials or other impurities, only elements of Group IV of the Periodic Table, e.g. Si-SiGe superlattices}
<administratively transferred to [H10F 77/1465](#)>
- D H01L 31/035263 {Doping superlattices, e.g. nipi superlattices}
<administratively transferred to [H10F 77/1468](#)>
- D H01L 31/035272 . . . {characterised by at least one potential jump barrier or surface barrier}
<administratively transferred to [H10F 77/14](#)>
- D H01L 31/035281 {Shape of the body}
<administratively transferred to [H10F 77/147](#)>
- D H01L 31/03529 {Shape of the potential jump barrier or surface barrier}
<administratively transferred to [H10F 77/148](#)>
- D H01L 31/036 . . characterised by their crystalline structure or particular orientation of the crystalline planes
<administratively transferred to [H10F 77/16](#)>
- D H01L 31/0368 . . . including polycrystalline semiconductors (H01L 31/0392 takes precedence)
<administratively transferred to [H10F 77/164](#)>
- D H01L 31/03682 {including only elements of Group IV of the Periodic Table}
<administratively transferred to [H10F 77/1642](#)>
- D H01L 31/03685 {including microcrystalline silicon, uc-Si}
<administratively transferred to [H10F 77/1645](#)>
- D H01L 31/03687 {including microcrystalline $\text{A}_{\text{IV}}\text{B}_{\text{IV}}$ alloys, e.g. uc-SiGe, uc-SiC}
<administratively transferred to [H10F 77/1648](#)>

- D H01L 31/0376 . . . including amorphous semiconductors (H01L 31/0392 takes precedence)
<administratively transferred to [H10F 77/166](#)>
- D H01L 31/03762 . . . {including only elements of Group IV of the Periodic Table}
<administratively transferred to [H10F 77/1662](#)>
- D H01L 31/03765 . . . {including $A_{IV}B_{IV}$ compounds or alloys, e.g. SiGe, SiC}
<administratively transferred to [H10F 77/1665](#)>
- D H01L 31/03767 . . . {presenting light-induced characteristic variations, e.g. Staebler-Wronski effect}
<administratively transferred to [H10F 77/1668](#)>
- D H01L 31/0384 . . . including other non-monocrystalline materials, e.g. semiconductor particles embedded in an insulating material (H01L 31/0392 takes precedence)
<administratively transferred to [H10F 77/162](#)>
- D H01L 31/03845 . . . {comprising semiconductor nanoparticles embedded in a semiconductor matrix (in insulating matrix H01L 31/0384)}
<administratively transferred to [H10F 77/1625](#)>
- D H01L 31/0392 . . . including thin films deposited on metallic or insulating substrates {; characterised by specific substrate materials or substrate features or by the presence of intermediate layers, e.g. barrier layers, on the substrate (textured substrates H01L 31/02366)}
<administratively transferred to [H10F 77/169](#)>
- D H01L 31/03921 . . . {including only elements of Group IV of the Periodic Table}
<administratively transferred to [H10F 77/1692](#)>
- D H01L 31/03923 . . . {including $A_I B_{III} C_{VI}$ compound materials, e.g. CIS, CIGS}
<administratively transferred to [H10F 77/1694](#)>
- D H01L 31/03925 . . . {including $A_{II} B_{VI}$ compound materials, e.g. CdTe, CdS}
<administratively transferred to [H10F 77/1696](#)>
- D H01L 31/03926 . . . {comprising a flexible substrate}
<administratively transferred to [H10F 77/1698](#)>
- D H01L 31/03928 . . . {including $A_I B_{III} C_{VI}$ compound, e.g. CIS, CIGS deposited on metal or polymer foils}
<administratively transferred to [H10F 77/1699](#)>
- D H01L 31/04 . . . adapted as photovoltaic [PV] conversion devices (testing thereof during manufacture {H01L 22/00}; testing thereof after manufacture H02S 50/10)
<administratively transferred to [H10F 10/00](#)>
- D H01L 31/041 . . . Provisions for preventing damage caused by corpuscular radiation, e.g. for space applications
<administratively transferred to [H10F 77/80](#)>
- D H01L 31/042 . . . PV modules or arrays of single PV cells (supporting structures for PV modules H02S 20/00)
<administratively transferred to [H10F 19/00](#)>
- D H01L 31/043 . . . Mechanically stacked PV cells
<administratively transferred to [H10F 19/40](#)>
- D H01L 31/044 . . . including bypass diodes (bypass diodes in the junction box H02S 40/34)
<administratively transferred to [H10F 19/70](#)>

- D H01L 31/0443 . . . comprising bypass diodes integrated or directly associated with the devices, e.g. bypass diodes integrated or formed in or on the same substrate as the photovoltaic cells
<administratively transferred to [H10F 19/75](#)>
- D H01L 31/0445 . . including thin film solar cells, e.g. single thin film a-Si, CIS or CdTe solar cells
<administratively transferred to [H10F 19/30](#)>
- D H01L 31/046 . . . PV modules composed of a plurality of thin film solar cells deposited on the same substrate
<administratively transferred to [H10F 19/31](#)>
- D H01L 31/0463 . . . characterised by special patterning methods to connect the PV cells in a module, e.g. laser cutting of the conductive or active layers
<administratively transferred to [H10F 19/33](#)>
- D H01L 31/0465 . . . comprising particular structures for the electrical interconnection of adjacent PV cells in the module (H01L 31/0463 takes precedence)
<administratively transferred to [H10F 19/35](#)>
- D H01L 31/0468 . . . comprising specific means for obtaining partial light transmission through the module, e.g. partially transparent thin film solar modules for windows
<administratively transferred to [H10F 19/37](#)>
- D H01L 31/047 . . PV cell arrays including PV cells having multiple vertical junctions or multiple V-groove junctions formed in a semiconductor substrate
<administratively transferred to [H10F 19/10](#)>
- D H01L 31/0475 . . PV cell arrays made by cells in a planar, e.g. repetitive, configuration on a single semiconductor substrate; PV cell microarrays (PV modules composed of a plurality of thin film solar cells deposited on the same substrate H01L 31/046)
<administratively transferred to [H10F 19/20](#)>
- D H01L 31/048 . . Encapsulation of modules
<administratively transferred to [H10F 19/80](#)>
- D H01L 31/0481 . . {characterised by the composition of the encapsulation material}
<administratively transferred to [H10F 19/804](#)>
- D H01L 31/0488 . . {Double glass encapsulation, e.g. photovoltaic cells arranged between front and rear glass sheets}
<administratively transferred to [H10F 19/807](#)>
- D H01L 31/049 . . Protective back sheets
<administratively transferred to [H10F 19/85](#)>
- D H01L 31/05 . . Electrical interconnection means between PV cells inside the PV module, e.g. series connection of PV cells (electrodes H01L 31/0224; electrical interconnection of thin film solar cells formed on a common substrate H01L 31/046; particular structures for electrical interconnecting of adjacent thin film solar cells in the module H01L 31/0465; electrical interconnection means specially adapted for electrically connecting two or more PV modules H02S 40/36)
<administratively transferred to [H10F 19/90](#)>
- D H01L 31/0504 . . {specially adapted for series or parallel connection of solar cells in a module}
<administratively transferred to [H10F 19/902](#)>

- D H01L 31/0508 {the interconnection means having a particular shape}
<administratively transferred to [H10F 19/904](#)>
- D H01L 31/0512 {made of a particular material or composition of materials}
<administratively transferred to [H10F 19/906](#)>
- D H01L 31/0516 {specially adapted for interconnection of back-contact solar cells}
<administratively transferred to [H10F 19/908](#)>
- D H01L 31/052 {Cooling means directly associated or integrated with the PV cell, e.g. integrated Peltier elements for active cooling or heat sinks directly associated with the PV cells (cooling means in combination with the PV module H02S 40/42)}
<administratively transferred to [H10F 77/63](#)>
- D H01L 31/0521 . . . {using a gaseous or a liquid coolant, e.g. air flow ventilation, water circulation}
<administratively transferred to [H10F 77/68](#)>
- D H01L 31/0525 . . . including means to utilise heat energy directly associated with the PV cell, e.g. integrated Seebeck elements
<administratively transferred to [H10F 77/67](#)>
- D H01L 31/053 . . . Energy storage means directly associated or integrated with the PV cell, e.g. a capacitor integrated with a PV cell (energy storage means associated with the PV module H02S 40/38)
<administratively transferred to [H10F 77/90](#)>
- D H01L 31/054 . . . Optical elements directly associated or integrated with the PV cell, e.g. light-reflecting means or light-concentrating means
<administratively transferred to [H10F 77/42](#)>
- D H01L 31/0543 . . . {comprising light concentrating means of the refractive type, e.g. lenses}
<administratively transferred to [H10F 77/484](#)>
- D H01L 31/0547 . . . {comprising light concentrating means of the reflecting type, e.g. parabolic mirrors, concentrators using total internal reflection}
<administratively transferred to [H10F 77/488](#)>
- D H01L 31/0549 . . . {comprising spectrum splitting means, e.g. dichroic mirrors}
<administratively transferred to [H10F 77/492](#)>
- D H01L 31/055 . . . where light is absorbed and re-emitted at a different wavelength by the optical element directly associated or integrated with the PV cell, e.g. by using luminescent material, fluorescent concentrators or up-conversion arrangements
<administratively transferred to [H10F 77/45](#)>
- D H01L 31/056 . . . the light-reflecting means being of the back surface reflector [BSR] type
<administratively transferred to [H10F 77/48](#)>
- D H01L 31/06 . . . characterised by potential barriers
<administratively transferred to [H10F 10/10](#)>
- D H01L 31/061 . . . the potential barriers being of the point-contact type (H01L 31/07 takes precedence)
<administratively transferred to [H10F 10/11](#)>
- D H01L 31/062 . . . the potential barriers being only of the metal-insulator-semiconductor type
<administratively transferred to [H10F 10/12](#)>

- D H01L 31/065 . . . the potential barriers being only of the graded gap type
<administratively transferred to [H10F 10/13](#)>
- D H01L 31/068 . . . the potential barriers being only of the PN homojunction type, e.g. bulk silicon PN homojunction solar cells or thin film polycrystalline silicon PN homojunction solar cells
<administratively transferred to [H10F 10/14](#)>
- D H01L 31/0682 . . . {back-junction, i.e. rearside emitter, solar cells, e.g. interdigitated base-emitter regions back-junction cells}
<administratively transferred to [H10F 10/146](#)>
- D H01L 31/0684 . . . {double emitter cells, e.g. bifacial solar cells}
<administratively transferred to [H10F 10/148](#)>
- D H01L 31/0687 . . . Multiple junction or tandem solar cells
<administratively transferred to [H10F 10/142](#)>
- D H01L 31/06875 . . . {inverted grown metamorphic [IMM] multiple junction solar cells, e.g. III-V compounds inverted metamorphic multi-junction cells}
<administratively transferred to [H10F 10/1425](#)>
- D H01L 31/0693 . . . the devices including, apart from doping material or other impurities, only $A_{III}B_V$ compounds, e.g. GaAs or InP solar cells
<administratively transferred to [H10F 10/144](#)>
- D H01L 31/07 . . . the potential barriers being only of the Schottky type
<administratively transferred to [H10F 10/18](#)>
- D H01L 31/072 . . . the potential barriers being only of the PN heterojunction type
<administratively transferred to [H10F 10/16](#)>
- D H01L 31/0725 . . . Multiple junction or tandem solar cells
<administratively transferred to [H10F 10/161](#)>
- D H01L 31/073 . . . comprising only $A_{II}B_{VI}$ compound semiconductors, e.g. CdS/CdTe solar cells
<administratively transferred to [H10F 10/162](#)>
- D H01L 31/0735 . . . comprising only $A_{III}B_V$ compound semiconductors, e.g. GaAs/AlGaAs or InP/GaInAs solar cells
<administratively transferred to [H10F 10/163](#)>
- D H01L 31/074 . . . comprising a heterojunction with an element of Group IV of the Periodic Table, e.g. ITO/Si, GaAs/Si or CdTe/Si solar cells
<administratively transferred to [H10F 10/164](#)>
- D H01L 31/0745 . . . comprising a $A_{IV}B_{IV}$ heterojunction, e.g. Si/Ge, SiGe/Si or Si/SiC solar cells
<administratively transferred to [H10F 10/165](#)>
- D H01L 31/0747 . . . comprising a heterojunction of crystalline and amorphous materials, e.g. heterojunction with intrinsic thin layer
<administratively transferred to [H10F 10/166](#)>
- D H01L 31/0749 . . . including a $A_{I-III}B_{III-VI}$ compound, e.g. CdS/CuInSe₂ [CIS] heterojunction solar cells
<administratively transferred to [H10F 10/167](#)>
- D H01L 31/075 . . . the potential barriers being only of the PIN type, e.g. amorphous silicon PIN solar cells
<administratively transferred to [H10F 10/17](#)>

- D H01L 31/076 Multiple junction or tandem solar cells
<administratively transferred to [H10F 10/172](#)>
- D H01L 31/077 the devices comprising monocrystalline or polycrystalline materials
<administratively transferred to [H10F 10/174](#)>
- D H01L 31/078 . . . including different types of potential barriers provided for in two or more of groups H01L 31/062 - H01L 31/075
<administratively transferred to [H10F 10/19](#)>
- D H01L 31/08 . in which radiation controls flow of current through the device, e.g. photoresistors
<administratively transferred to [H10F 30/00](#)>
- D H01L 31/085 . {the device being sensitive to very short wavelength, e.g. X-ray, Gamma-rays}
<administratively transferred to [H10F 30/301](#)>
- D H01L 31/09 . . Devices sensitive to infrared, visible or ultraviolet radiation (H01L 31/101 takes precedence)
<administratively transferred to [H10F 30/10](#)>
- D H01L 31/095 . . . {comprising amorphous semiconductors}
<administratively transferred to [H10F 30/15](#)>
- D H01L 31/10 . . characterised by potential barriers, e.g. phototransistors
<administratively transferred to [H10F 30/20](#)>
- D H01L 31/101 . . . Devices sensitive to infrared, visible or ultraviolet radiation
<administratively transferred to [H10F 30/21](#)>
- D H01L 31/1013 {devices sensitive to two or more wavelengths, e.g. multi-spectrum radiation detection devices}
<administratively transferred to [H10F 30/288](#)>
- D H01L 31/1016 {comprising transparent or semitransparent devices}
<administratively transferred to [H10F 30/289](#)>
- D H01L 31/102 characterised by only one potential barrier
<administratively transferred to [H10F 30/22](#)>
- D H01L 31/1025 {the potential barrier being of the point contact type}
<administratively transferred to [H10F 30/2205](#)>
- D H01L 31/103 the potential barrier being of the PN homojunction type
<administratively transferred to [H10F 30/221](#)>
- D H01L 31/1032 {the devices comprising active layers formed only by $A_{II}B_{VI}$ compounds, e.g. HgCdTe IR photodiodes}
<administratively transferred to [H10F 30/2212](#)>
- D H01L 31/1035 {the devices comprising active layers formed only by $A_{III}B_{V}$ compounds}
<administratively transferred to [H10F 30/2215](#)>
- D H01L 31/1037 {the devices comprising active layers formed only by $A_{IV}B_{VI}$ compounds}
<administratively transferred to [H10F 30/2218](#)>
- D H01L 31/105 the potential barrier being of the PIN type
<administratively transferred to [H10F 30/223](#)>

- D H01L 31/1055 {the devices comprising amorphous materials of Group IV of the Periodic Table}
<administratively transferred to [H10F 30/2235](#)>
- D H01L 31/107 the potential barrier working in avalanche mode, e.g. avalanche photodiodes
<administratively transferred to [H10F 30/225](#)>
- D H01L 31/1075 {in which the active layers, e.g. absorption or multiplication layers, form an heterostructure, e.g. SAM structure}
<administratively transferred to [H10F 30/2255](#)>
- D H01L 31/108 the potential barrier being of the Schottky type
<administratively transferred to [H10F 30/227](#)>
- D H01L 31/1085 {the devices being of the Metal-Semiconductor-Metal [MSM] Schottky barrier type}
<administratively transferred to [H10F 30/2275](#)>
- D H01L 31/109 the potential barrier being of the PN heterojunction type
<administratively transferred to [H10F 30/222](#)>
- D H01L 31/11 characterised by two potential barriers, e.g. bipolar phototransistors
<administratively transferred to [H10F 30/24](#)>
- D H01L 31/1105 {the device being a bipolar phototransistor}
<administratively transferred to [H10F 30/245](#)>
- D H01L 31/111 characterised by at least three potential barriers, e.g. photothyristors
<administratively transferred to [H10F 30/26](#)>
- D H01L 31/1113 {the device being a photothyristor}
<administratively transferred to [H10F 30/263](#)>
- D H01L 31/1116 {of the static induction type}
<administratively transferred to [H10F 30/2635](#)>
- D H01L 31/112 characterised by field-effect operation, e.g. junction field-effect phototransistor
<administratively transferred to [H10F 30/28](#)>
- D H01L 31/1121 {Devices with Schottky gate}
<administratively transferred to [H10F 30/283](#)>
- D H01L 31/1122 {the device being a CCD device}
<administratively transferred to [H10F 30/2837](#)>
- D H01L 31/1123 {the device being a photo-MESFET}
<administratively transferred to [H10F 30/2843](#)>
- D H01L 31/1124 {Devices with PN-homojunction gate}
<administratively transferred to [H10F 30/285](#)>
- D H01L 31/1125 {the device being a CCD device}
<administratively transferred to [H10F 30/2857](#)>
- D H01L 31/1126 {the device being a field-effect phototransistor}
<administratively transferred to [H10F 30/2863](#)>
- D H01L 31/1127 {Devices with PN heterojunction gate}
<administratively transferred to [H10F 30/287](#)>

- D H01L 31/1128 {the device being a CCD device}
<administratively transferred to [H10F 30/2873](#)>
- D H01L 31/1129 {the device being a field-effect phototransistor}
<administratively transferred to [H10F 30/2877](#)>
- D H01L 31/113 being of the conductor-insulator-semiconductor type, e.g. metal-insulator-semiconductor field-effect transistor
<administratively transferred to [H10F 30/2823](#)>
- D H01L 31/1133 {the device being a conductor-insulator-semiconductor diode or a CCD device}
<administratively transferred to [H10F 30/2823](#)>
- D H01L 31/1136 {the device being a metal-insulator-semiconductor field-effect transistor}
<administratively transferred to [H10F 30/282](#)>
- D H01L 31/115 Devices sensitive to very short wavelength, e.g. X-rays, gamma-rays or corpuscular radiation
<administratively transferred to [H10F 30/29](#)>
- D H01L 31/117 of the bulk effect radiation detector type, e.g. Ge-Li compensated PIN gamma-ray detectors
<administratively transferred to [H10F 30/292](#)>
- D H01L 31/1175 {Li-compensated PIN gamma-ray detectors}
<administratively transferred to [H10F 30/2925](#)>
- D H01L 31/118 of the surface barrier or shallow PN junction detector type, e.g. surface barrier alpha-particle detectors
<administratively transferred to [H10F 30/295](#)>
- D H01L 31/1185 {of the shallow PN junction detector type}
<administratively transferred to [H10F 30/2955](#)>
- D H01L 31/119 characterised by field-effect operation, e.g. MIS type detectors
<administratively transferred to [H10F 30/298](#)>
- D H01L 31/12 structurally associated with, e.g. formed in or on a common substrate with, one or more electric light sources, e.g. electroluminescent light sources, and electrically or optically coupled thereto (semiconductor devices with at least one potential barrier or surface barrier adapted for light emission H01L 33/00; amplifiers using electroluminescent element and photocell H03F 17/00; electroluminescent light sources per se H05B 33/00)
<administratively transferred to [H10F 55/00](#)>
- D H01L 31/125 {Composite devices with photosensitive elements and electroluminescent elements within one single body}
<administratively transferred to [H10F 55/18](#)>
- D H01L 31/14 the light source or sources being controlled by the semiconductor device sensitive to radiation, e.g. image converters, image amplifiers or image storage devices
<administratively transferred to [H10F 55/10](#)>
- D H01L 31/141 {the semiconductor device sensitive to radiation being without a potential-jump barrier or surface barrier}
<administratively transferred to [H10F 55/16](#)>

- D H01L 31/143 . . . {the light source being a semiconductor device with at least one potential-jump barrier or surface barrier, e.g. light emitting diode}
<administratively transferred to [H10F 55/165](#)>
- D H01L 31/145 . . . {the semiconductor device sensitive to radiation being characterised by at least one potential-jump barrier or surface barrier}
<administratively transferred to [H10F 55/17](#)>
- D H01L 31/147 . . . the light sources and the devices sensitive to radiation all being semiconductor devices characterised by potential barriers
<administratively transferred to [H10F 55/15](#)>
- D H01L 31/153 formed in, or on, a common substrate
<administratively transferred to [H10F 55/155](#)>
- D H01L 31/16 . . the semiconductor device sensitive to radiation being controlled by the light source or sources
<administratively transferred to [H10F 55/20](#)>
- D H01L 31/161 . . . {Semiconductor device sensitive to radiation without a potential-jump or surface barrier, e.g. photoresistors}
<administratively transferred to [H10F 55/205](#)>
- D H01L 31/162 {the light source being a semiconductor device with at least one potential-jump barrier or surface barrier, e.g. a light emitting diode}
<administratively transferred to [H10F 55/207](#)>
- D H01L 31/164 {Optical potentiometers}
<administratively transferred to [H10F 55/208](#)>
- D H01L 31/165 . . . {the semiconductor sensitive to radiation being characterised by at least one potential-jump or surface barrier}
<administratively transferred to [H10F 55/26](#)>
- D H01L 31/167 . . . the light sources and the devices sensitive to radiation all being semiconductor devices characterised by potential barriers
<administratively transferred to [H10F 55/25](#)>
- D H01L 31/173 formed in, or on, a common substrate
<administratively transferred to [H10F 55/255](#)>
- D H01L 31/18 . Processes or apparatus specially adapted for the manufacture or treatment of these devices or of parts thereof
<administratively transferred to [H10F 71/00](#)>
- D H01L 31/1804 . . {comprising only elements of Group IV of the Periodic Table}
<administratively transferred to [H10F 71/121](#)>
- D H01L 31/1808 . . . {including only Ge}
<administratively transferred to [H10F 71/1212](#)>
- D H01L 31/1812 . . . {including only $A_{IV}B_{IV}$ alloys, e.g. SiGe}
<administratively transferred to [H10F 71/1215](#)>
- D H01L 31/1816 {Special manufacturing methods for microcrystalline layers, e.g. uc-SiGe, uc-SiC}
<administratively transferred to [H10F 71/1218](#)>
- D H01L 31/182 . . . {Special manufacturing methods for polycrystalline Si, e.g. Si ribbon, poly Si ingots, thin films of polycrystalline Si}
<administratively transferred to [H10F 71/1221](#)>

- D H01L 31/1824 . . . {Special manufacturing methods for microcrystalline Si, uc-Si}
<administratively transferred to [H10F 71/1224](#)>
- D H01L 31/1828 . . {the active layers comprising only $A_{III}B_{VI}$ compounds, e.g. CdS, ZnS, CdTe}
<administratively transferred to [H10F 71/125](#)>
- D H01L 31/1832 . . . {comprising ternary compounds, e.g. Hg-Cd-Te}
<administratively transferred to [H10F 71/1253](#)>
- D H01L 31/1836 . . . {comprising a growth-substrate not being an $A_{III}B_{VI}$ compound}
<administratively transferred to [H10F 71/1257](#)>
- D H01L 31/184 . . {the active layers comprising only $A_{III}B_V$ compounds, e.g. GaAs, InP}
<administratively transferred to [H10F 71/127](#)>
- D H01L 31/1844 . . . {comprising ternary or quaternary compounds, e.g. Ga-Al-As, In-Ga-As-P}
<administratively transferred to [H10F 71/1272](#)>
- D H01L 31/1848 {comprising nitride compounds, e.g. InGaN, InGaAlN}
<administratively transferred to [H10F 71/1274](#)>
- D H01L 31/1852 . . . {comprising a growth-substrate not being an $A_{III}B_V$ compound}
<administratively transferred to [H10F 71/1276](#)>
- D H01L 31/1856 . . . {comprising nitride compounds, e.g. GaN}
<administratively transferred to [H10F 71/1278](#)>
- D H01L 31/186 . . {Particular post-treatment for the devices, e.g. annealing, impurity gettering, short-circuit elimination, recrystallisation}
<administratively transferred to [H10F 71/00](#)>
- D H01L 31/1864 . . . {Annealing}
<administratively transferred to [H10F 71/128](#)>
- D H01L 31/1868 . . . {Passivation}
<administratively transferred to [H10F 71/129](#)>
- D H01L 31/1872 . . . {Recrystallisation}
<administratively transferred to [H10F 71/131](#)>
- D H01L 31/1876 . . {Particular processes or apparatus for batch-treatment of the devices}
<administratively transferred to [H10F 71/137](#)>
- D H01L 31/188 . . . {Apparatus specially adapted for automatic interconnection of solar cells in a module}
<administratively transferred to [H10F 71/1375](#)>
- D H01L 31/1884 . . {Manufacture of transparent electrodes, e.g. TCO, ITO}
<administratively transferred to [H10F 71/138](#)>
- D H01L 31/1888 . . . {methods for etching transparent electrodes}
<administratively transferred to [H10F 71/1385](#)>
- D H01L 31/1892 . . {methods involving the use of temporary, removable substrates}
<administratively transferred to [H10F 71/139](#)>
- D H01L 31/1896 . . . {for thin-film semiconductors}
<administratively transferred to [H10F 71/1395](#)>
- D H01L 31/20 . . such devices or parts thereof comprising amorphous semiconductor materials
<administratively transferred to [H10F 71/10](#)>

- D H01L 31/202
 - • • {including only elements of Group IV of the Periodic Table}
 - <administratively transferred to [H10F 71/103](#)>
- D H01L 31/204
 - • • {including $A_{IV}B_{IV}$ alloys, e.g. SiGe, SiC}
 - <administratively transferred to [H10F 71/1035](#)>
- D H01L 31/206
 - • • {Particular processes or apparatus for continuous treatment of the devices, e.g. roll-to-roll processes, multi-chamber deposition}
 - <administratively transferred to [H10F 71/107](#)>
- D H01L 31/208
 - • • {Particular post-treatment of the devices, e.g. annealing, short-circuit elimination}
 - <administratively transferred to [H10F 71/10](#)>

Project: RP12457 (H01L)

- D H01L 33/00** **Semiconductor devices having potential barriers specially adapted for light emission; Processes or apparatus specially adapted for the manufacture or treatment thereof or of parts thereof; Details thereof (H10K 50/00 takes precedence; devices consisting of a plurality of semiconductor components formed in or on a common substrate and including semiconductor components having potential barriers, specially adapted for light emission H01L 27/15; semiconductor lasers H01S 5/00)**

NOTES

1. This group covers light-emitting diodes [LED] or superluminescent diodes [SLD], which emit visible light, infrared [IR] light or ultraviolet [UV] light.

2. In this group, the first place priority rule is applied, i.e. at each hierarchical level, in the absence of an indication to the contrary, classification is made in the first appropriate place.

<administratively transferred to [H10H 20/80](#)>

- D H01L 33/0004
 - {Devices characterised by their operation}
 - <administratively transferred to [H10H 20/00](#)>
- D H01L 33/0008
 - • {having p-n or hi-lo junctions}
 - <administratively transferred to [H10H 20/81](#)>
- D H01L 33/0012
 - • • {p-i-n devices}
 - <administratively transferred to [H10H 20/81](#)>
- D H01L 33/0016
 - • • {having at least two p-n junctions}
 - <administratively transferred to [H10H 20/813](#)>
- D H01L 33/002
 - • {having heterojunctions or graded gap}
 - <administratively transferred to [H10H 20/811](#)>
- D H01L 33/0025
 - • • {comprising only $A_{III}B_{IV}$ compounds}
 - <administratively transferred to [H10H 20/811](#) and [H10H 20/824](#)>
- D H01L 33/0029
 - • • {comprising only $A_{II}B_{VI}$ compounds}
 - <administratively transferred to [H10H 20/811](#) and [H10H 20/823](#)>
- D H01L 33/0033
 - • {having Schottky barriers}
 - <administratively transferred to [H10H 20/052](#)>
- D H01L 33/0037
 - • {having a MIS barrier layer}
 - <administratively transferred to [H10H 20/052](#)>
- D H01L 33/0041
 - • {characterised by field-effect operation}
 - <administratively transferred to [H10H 20/062](#)>

- D H01L 33/0045
 - • {the devices being superluminescent diodes}
 - <administratively transferred to [H10H 20/042](#)>
- D H01L 33/005
 - {Processes}
 - <administratively transferred to [H10H 20/01](#)>
- D H01L 33/0054
 - • {for devices with an active region comprising only group IV elements}
 - <administratively transferred to [H10H 20/014](#)>
- D H01L 33/0058
 - • • {comprising amorphous semiconductors}
 - <administratively transferred to [H10H 20/0145](#)>
- D H01L 33/0062
 - • {for devices with an active region comprising only III-V compounds}
 - <administratively transferred to [H10H 20/013](#)>
- D H01L 33/0066
 - • • {with a substrate not being a III-V compound}
 - <administratively transferred to [H10H 20/0133](#)>
- D H01L 33/007
 - • • • {comprising nitride compounds}
 - <administratively transferred to [H10H 20/01335](#)>
- D H01L 33/0075
 - • • {comprising nitride compounds}
 - <administratively transferred to [H10H 20/0137](#)>
- D H01L 33/0083
 - • {for devices with an active region comprising only II-VI compounds}
 - <administratively transferred to [H10H 20/012](#)>
- D H01L 33/0087
 - • • {with a substrate not being a II-VI compound}
 - <administratively transferred to [H10H 20/0125](#)>
- D H01L 33/0091
 - • {for devices with an active region comprising only IV-VI compounds}
 - <administratively transferred to [H10H 20/011](#)>
- D H01L 33/0093
 - • {Wafer bonding; Removal of the growth substrate}
 - <administratively transferred to [H10H 20/018](#)>
- D H01L 33/0095
 - • {Post-treatment of devices, e.g. annealing, recrystallisation or short-circuit elimination}
 - <administratively transferred to [H10H 20/01](#)>
- D H01L 33/02
 - characterised by the semiconductor bodies
 - <administratively transferred to [H10H 20/81](#)>
- D H01L 33/025
 - • {Physical imperfections, e.g. particular concentration or distribution of impurities}
 - <administratively transferred to [H10H 20/8215](#)>
- D H01L 33/04
 - • with a quantum effect structure or superlattice, e.g. tunnel junction
 - <administratively transferred to [H10H 20/811](#)>
- D H01L 33/06
 - • • within the light emitting region, e.g. quantum confinement structure or tunnel barrier
 - <administratively transferred to [H10H 20/812](#)>
- D H01L 33/08
 - • with a plurality of light emitting regions, e.g. laterally discontinuous light emitting layer or photoluminescent region integrated within the semiconductor body (H01L 27/15 takes precedence)
 - <administratively transferred to [H10H 20/813](#)>
- D H01L 33/10
 - • with a light reflecting structure, e.g. semiconductor Bragg reflector
 - <administratively transferred to [H10H 20/814](#)>

- D H01L 33/105
 - • • {with a resonant cavity structure}
 - <administratively transferred to [H10H 20/8142](#)>
- D H01L 33/12
 - • with a stress relaxation structure, e.g. buffer layer
 - <administratively transferred to [H10H 20/815](#)>
- D H01L 33/14
 - • with a carrier transport control structure, e.g. highly-doped semiconductor layer or current-blocking structure
 - <administratively transferred to [H10H 20/816](#)>
- D H01L 33/145
 - • • {with a current-blocking structure}
 - <administratively transferred to [H10H 20/8162](#)>
- D H01L 33/16
 - • with a particular crystal structure or orientation, e.g. polycrystalline, amorphous or porous
 - <administratively transferred to [H10H 20/817](#)>
- D H01L 33/18
 - • • within the light emitting region
 - NOTE
 - When classifying in this group, classification is also made in group H01L 33/26 or one of its subgroups in order to identify the chemical composition of the light emitting region
 - <administratively transferred to [H10H 20/818](#)>
- D H01L 33/20
 - • with a particular shape, e.g. curved or truncated substrate
 - <administratively transferred to [H10H 20/819](#)>
- D H01L 33/22
 - • • Roughened surfaces, e.g. at the interface between epitaxial layers
 - <administratively transferred to [H10H 20/82](#)>
- D H01L 33/24
 - • • of the light emitting region, e.g. non-planar junction
 - <administratively transferred to [H10H 20/821](#)>
- D H01L 33/26
 - • Materials of the light emitting region
 - <administratively transferred to [H10H 20/822](#)>
- D H01L 33/28
 - • • containing only elements of Group II and Group VI of the Periodic Table
 - <administratively transferred to [H10H 20/823](#)>
- D H01L 33/285
 - • • • {characterised by the doping materials}
 - <administratively transferred to [H10H 20/8232](#)>
- D H01L 33/30
 - • • containing only elements of Group III and Group V of the Periodic Table
 - <administratively transferred to [H10H 20/824](#)>
- D H01L 33/305
 - • • • {characterised by the doping materials}
 - <administratively transferred to [H10H 20/8242](#)>
- D H01L 33/32
 - • • • containing nitrogen
 - <administratively transferred to [H10H 20/825](#)>
- D H01L 33/325
 - • • • • {characterised by the doping materials}
 - <administratively transferred to [H10H 20/8252](#)>
- D H01L 33/34
 - • • containing only elements of Group IV of the Periodic Table
 - <administratively transferred to [H10H 20/826](#)>
- D H01L 33/343
 - • • • {characterised by the doping materials}
 - <administratively transferred to [H10H 20/8262](#)>
- D H01L 33/346
 - • • • {containing porous silicon}
 - <administratively transferred to [H10H 20/8264](#)>

- D H01L 33/36
 - characterised by the electrodes
 - <administratively transferred to [H10H 20/83](#)>
- D H01L 33/38
 - • with a particular shape
 - <administratively transferred to [H10H 20/831](#)>
- D H01L 33/382
 - • • {the electrode extending partially in or entirely through the semiconductor body}
 - <administratively transferred to [H10H 20/8312](#)>
- D H01L 33/385
 - • • {the electrode extending at least partially onto a side surface of the semiconductor body}
 - <administratively transferred to [H10H 20/8314](#)>
- D H01L 33/387
 - • • {with a plurality of electrode regions in direct contact with the semiconductor body and being electrically interconnected by another electrode layer}
 - <administratively transferred to [H10H 20/8316](#)>
- D H01L 33/40
 - • Materials therefor
 - <administratively transferred to [H10H 20/832](#)>
- D H01L 33/405
 - • • {Reflective materials}
 - <administratively transferred to [H10H 20/835](#)>
- D H01L 33/42
 - • • Transparent materials
 - <administratively transferred to [H10H 20/833](#)>
- D H01L 33/44
 - characterised by the coatings, e.g. passivation layer or anti-reflective coating
 - <administratively transferred to [H10H 20/84](#)>
- D H01L 33/46
 - • Reflective coating, e.g. dielectric Bragg reflector
 - <administratively transferred to [H10H 20/841](#)>
- D H01L 33/465
 - • • {with a resonant cavity structure}
 - <administratively transferred to [H10H 20/862](#)>
- D H01L 33/48
 - characterised by the semiconductor body packages

NOTE
 This group covers elements in intimate contact with the semiconductor body or integrated with the package

<administratively transferred to [H10H 20/85](#)>
- D H01L 33/483
 - • {Containers}
 - <administratively transferred to [H10H 20/8506](#)>
- D H01L 33/486
 - • • {adapted for surface mounting}
 - <administratively transferred to [H10H 20/8506](#)>
- D H01L 33/50
 - • Wavelength conversion elements
 - <administratively transferred to [H10H 20/851](#)>
- D H01L 33/501
 - • • {characterised by the materials, e.g. binder}
 - <administratively transferred to [H10H 20/8511](#)>
- D H01L 33/502
 - • • • {Wavelength conversion materials}
 - <administratively transferred to [H10H 20/8512](#)>
- D H01L 33/504
 - • • • • {Elements with two or more wavelength conversion materials}
 - <administratively transferred to [H10H 20/8513](#)>
- D H01L 33/505
 - • • {characterised by the shape, e.g. plate or foil}
 - <administratively transferred to [H10H 20/8514](#)>

- D H01L 33/507
- • {the elements being in intimate contact with parts other than the semiconductor body or integrated with parts other than the semiconductor body}
 - <administratively transferred to [H10H 20/8515](#)>
- D H01L 33/508
- • {having a non-uniform spatial arrangement or non-uniform concentration; e.g. patterned wavelength conversion layer, wavelength conversion layer with a concentration gradient of the wavelength conversion material}
 - <administratively transferred to [H10H 20/8516](#)>
- D H01L 33/52
- • Encapsulations
 - <administratively transferred to [H10H 20/852](#)>
- D H01L 33/54
- • having a particular shape
 - <administratively transferred to [H10H 20/853](#)>
- D H01L 33/56
- • Materials, e.g. epoxy or silicone resin
 - <administratively transferred to [H10H 20/854](#)>
- D H01L 33/58
- • Optical field-shaping elements
 - <administratively transferred to [H10H 20/855](#)>
- D H01L 33/60
- • Reflective elements
 - <administratively transferred to [H10H 20/856](#)>
- D H01L 33/62
- • Arrangements for conducting electric current to or from the semiconductor body; e.g. lead-frames, wire-bonds or solder balls
 - <administratively transferred to [H10H 20/857](#)>
- D H01L 33/64
- • Heat extraction or cooling elements
 - <administratively transferred to [H10H 20/858](#)>
- D H01L 33/641
- • {characterized by the materials}
 - <administratively transferred to [H10H 20/8581](#)>
- D H01L 33/642
- • {characterized by the shape}
 - <administratively transferred to [H10H 20/8582](#)>
- D H01L 33/644
- • {in intimate contact or integrated with parts of the device other than the semiconductor body}
 - <administratively transferred to [H10H 20/8583](#)>
- D H01L 33/645
- • {the elements being electrically controlled; e.g. Peltier elements}
 - <administratively transferred to [H10H 20/8584](#)>
- D H01L 33/647
- • {the elements conducting electric current to or from the semiconductor body}
 - <administratively transferred to [H10H 20/8585](#)>
- D H01L 33/648
- • {the elements comprising fluids; e.g. heat-pipes}
 - <administratively transferred to [H10H 20/8586](#)>
- U H01L 2225/00
- Details relating to assemblies covered by the group [H01L 25/00](#) but not provided for in its subgroups**
- M H01L 2225/03
- All the devices being of a type provided for in the same **subgroup of groups** *main group of the H01L 27/00 - same subclass H01L 33/648 and of class H10K 99/00* *H10, e.g. assemblies of rectifier diodes*

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- U H01L 2225/04
- • the devices not having separate containers

- M H01L 2225/065 . . . *All the devices being of a type provided for in **the same main** group **H01L 27/00** of the same subclass of class **H10***
- U H01L 2225/10 . . the devices having separate containers
- M H01L 2225/1005 . . . the devices being *of a type provided for in group **integrated devices of H01L 27/00** class **H10***
- D H01L 2229/00 **Indexing scheme for semiconductor devices adapted for rectifying, amplifying, oscillating or switching, or capacitors or resistors with at least one potential-jump barrier or surface barrier, for details of semiconductor bodies or of electrodes thereof, or for multistep manufacturing processes therefor**
 <administratively transferred to [H10D 99/00](#)>

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- D H01L 2933/00 **Details relating to devices covered by the group H01L 33/00 but not provided for in its subgroups**
 <administratively transferred to [H10H 20/80](#)>
- D H01L 2933/0008 . Processes
 <administratively transferred to [H10H 20/01](#)>
- D H01L 2933/0016 . . relating to electrodes
 <administratively transferred to [H10H 20/032](#)>
- D H01L 2933/0025 . . relating to coatings
 <administratively transferred to [H10H 20/034](#)>
- D H01L 2933/0033 . . relating to semiconductor body packages
 <administratively transferred to [H10H 20/036](#)>
- D H01L 2933/0041 . . . relating to wavelength-conversion elements
 <administratively transferred to [H10H 20/0361](#)>
- D H01L 2933/005 . . . relating to encapsulations
 <administratively transferred to [H10H 20/0362](#)>
- D H01L 2933/0058 . . . relating to optical field-shaping elements
 <administratively transferred to [H10H 20/0363](#)>
- D H01L 2933/0066 . . . relating to arrangements for conducting electric current to or from the semiconductor body
 <administratively transferred to [H10H 20/0364](#)>
- D H01L 2933/0075 . . . relating to heat extraction or cooling elements
 <administratively transferred to [H10H 20/0365](#)>
- D H01L 2933/0083 . Periodic patterns for optical field-shaping in or on the semiconductor body or semiconductor body package, e.g. photonic bandgap structures
 <administratively transferred to [H10H 20/872](#)>
- D H01L 2933/0091 . Scattering means in or on the semiconductor body or semiconductor body package (H01L 33/22 takes precedence)
 <administratively transferred to [H10H 20/882](#)>

Project: Unknown (H01M)

- U H01M 8/00 **Fuel cells; Manufacture thereof**

NOTE

In this group, the following expression is used with the meaning indicated:

- "Fuel cell" means an electrochemical generator wherein the reactants are supplied from outside.

- U H01M 8/10
 - Fuel cells with solid electrolytes
- U H01M 8/1016
 - • characterised by the electrolyte material ([H01M 8/12](#) takes precedence)
- U H01M 8/1018
 - • • Polymeric electrolyte materials
- U H01M 8/1069
 - • • • characterised by the manufacturing processes
- M H01M 8/1072
 - • • • • by chemical reactions, e.g. [insitu in situ](#) polymerisation or [insitu in situ](#) crosslinking

Project: RP12333 (H01M)

H01M 14/00

Electrochemical current or voltage generators not provided for in groups [H01M 6/00](#) - [H01M 12/00](#); Manufacture thereof

NOTE

This group does not cover solar cells, photocells, photoelectrochemical cells or photovoltaic cells, which are covered by the following groups:

- semiconductor devices sensitive to light and adapted for the conversion of the energy of such radiation into electrical energy are covered by group [H01L 31/00](#)[H10F 10/00](#);
- solid-state devices using organic materials as active part specially adapted for sensing light and adapted for the conversion of the energy of such radiation into electrical energy are covered by group [H10K 30/00](#);
- electrolytic light-sensitive devices, e.g. dye-sensitised solar cells, are covered by group [H01G 9/20](#);
- photovoltaic modules structurally associated with energy storage means, e.g. batteries, are covered by group [H02S 40/38](#).

- M H01M 14/005
 - {Photoelectrochemical storage cells (light sensitive devices [H01G 9/20](#), semiconductors sensitive to light [H01L 31/00](#)[H10F](#))}

Project: RP12457 (H01S)

M H01S 5/00

Semiconductor lasers ([superluminescent diodes H01L 33/00](#)[superluminescent diodes H10H 20/00](#))

NOTE

Attention is drawn to Note (3) after the title of section [C](#), which Note indicates to which version of the Periodic Table of chemical elements the CPC refers. In this group, the system used is the 8 group system indicated by Roman numerals in the Periodic Table thereunder.

Project: Unknown (H02H)

U H02H 1/00

Details of emergency protective circuit arrangements

M H02H 1/04

- Arrangements for preventing response to transient abnormal conditions, e.g. to lightning {or to short duration over voltage or oscillations; Damping the influence of [deDC](#) component by short circuits in [acAC](#) networks}

U H02H 3/00

Emergency protective circuit arrangements for automatic disconnection directly responsive to an undesired change from normal electric working condition with or without subsequent reconnection (specially adapted for specific types of electric machines or apparatus or for sectionalised protection of cable or line systems [H02H 7/00](#); systems for change-over to standby supply [H02J 9/00](#)); integrated protection (for motors [H02H 7/0822](#))

- U H02H 3/08
 - responsive to excess current (responsive to abnormal temperature caused by excess current [H02H 5/04](#))
- M H02H 3/087
 - • for ~~de~~DC applications
- U H02H 3/16
 - responsive to fault current to earth, frame or mass (with balanced or differential arrangement [H02H 3/26](#) {; monitoring earth connection [H02H 5/105](#)})
- M H02H 3/162
 - • {for ~~ae~~AC systems}
- U H02H 3/20
 - responsive to excess voltage
- M H02H 3/202
 - • {for ~~de~~DC systems}
- U H02H 3/26
 - responsive to difference between voltages or between currents; responsive to phase angle between voltages or between currents
- U H02H 3/32
 - • involving comparison of the voltage or current values at corresponding points in different conductors of a single system, e.g. of currents in go and return conductors
- U H02H 3/33
 - • • using summation current transformers ([H02H 3/347](#) takes precedence)
- M H02H 3/332
 - • • {with means responsive to ~~de~~DC component in the fault current}

Project: MP12266 (H02H)

- M H02H 3/334
 - • • {with means to produce an artificial ~~unbalance~~~~imbalance~~ for other protection or monitoring reasons or remote control ([H02H 3/338](#) takes precedence)}

Project: Unknown (H02H)

- M H02H 3/50
 - responsive to the appearance of abnormal wave forms, e.g. ~~ae in de~~AC in DC installations
- U H02H 7/00
 - Emergency protective circuit arrangements specially adapted for specific types of electric machines or apparatus or for sectionalised protection of cable or line systems, and effecting automatic switching in the event of an undesired change from normal working conditions**
- U H02H 7/08
 - for dynamo-electric motors
- M H02H 7/0811
 - • {for ~~de~~DC motors ([H02H 7/0833](#) takes precedence)}
- U H02H 7/10
 - for converters; for rectifiers {(forming part of the control circuit of the converter, see the relevant group in [H02M](#))}
- U H02H 7/12
 - • for static converters or rectifiers {(for discharge lamp power supplies using static converters [H05B 41/2851](#), [H05B 41/2921](#), [H05B 41/2981](#))}
- M H02H 7/122
 - • • for inverters, i.e. ~~de~~/~~ae~~DC/AC converters
- M H02H 7/20
 - for electronic equipment (for converters [H02H 7/10](#); for electric measuring instruments [G01R 1/36](#); ~~for dc voltage or current semiconductor regulators~~ [G05F 1/569](#); ~~for DC voltage or current semiconductor regulators~~ [G05F 1/569](#); for amplifiers [H03F 1/52](#); for electronic switching circuits [H03K 17/08](#))
- U H02H 7/26
 - Sectionalised protection of cable or line systems, e.g. for disconnecting a section on which a short-circuit, earth fault, or arc discharge has occurred (locating faults in cables [G01R 31/08](#))
- M H02H 7/268
 - • {for ~~de~~DC systems}

Project: RP12465 (H02H)

- U H02H 9/00
 - Emergency protective circuit arrangements for limiting excess current or voltage without disconnection**
- U H02H 9/04
 - responsive to excess voltage (lightning arrestors [H01C 7/12](#), [H01C 8/04](#), [H01G 9/18](#), [H01T](#))
- U H02H 9/045
 - • {adapted to a particular application and not provided for elsewhere}

- M H02H 9/046 • • • {responsive to excess voltage appearing at terminals of integrated circuits
(~~protection by specific structural integration design H01L 27/0248~~)}

Project: Unknown (H02J)**H02J****CIRCUIT ARRANGEMENTS OR SYSTEMS FOR SUPPLYING OR DISTRIBUTING ELECTRIC POWER; SYSTEMS FOR STORING ELECTRIC ENERGY**NOTES

1. This subclass covers:

- ~~ac or de~~ **AC or DC** mains or distribution networks;
- circuit arrangements for battery supplies, including charging or control thereof, or coordinated supply from two or more sources of any kind;
- circuit arrangements or systems for wireless supply or distribution of electric power.

2. This subclass does not cover:

- control of a single motor, generator or dynamo-electric converter, of the types covered by subclass [H01F](#) or [H02K](#), which is covered by subclass [H02P](#);
- control of a single motor or generator, of the types covered by subclass [H02N](#), which is covered by that subclass.

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

- M H02J 1/00 Circuit arrangements for ~~de mains or de~~ **DC mains or DC** distribution networks**
- M H02J 1/10 • Parallel operation of ~~de~~ **DC** sources
- M H02J 1/12 • • Parallel operation of ~~de~~ **DC** generators with converters, e.g. with mercury-arc rectifier
- M H02J 3/00 Circuit arrangements for ~~ac mains or ac~~ **AC mains or AC** distribution networks**
- M H02J 3/02 • using a single network for simultaneous distribution of power at different frequencies; using a single network for simultaneous distribution of ~~ac~~ **AC** power and of ~~de~~ **DC** power
- M H02J 3/12 • for adjusting voltage in ~~ac~~ **AC** networks by changing a characteristic of the network load
- M H02J 3/36 • Arrangements for transfer of electric power between ~~ac~~ **AC** networks via a high-tension ~~de~~ **DC** link
- M H02J 4/00 Circuit arrangements for mains or distribution networks not specified as ~~ac or de~~ **AC or DC****
- M H02J 5/00 Circuit arrangements for transfer of electric power between ~~ac networks and de~~ **AC networks and DC** networks ([H02J 3/36](#) takes precedence)**
- U H02J 7/00 Circuit arrangements for charging or depolarising batteries or for supplying loads from batteries**
- M H02J 7/02 • for charging batteries from ~~ac~~ **AC** mains by converters
- M H02J 7/34 • Parallel operation in networks using both storage and other ~~de~~ **DC** sources, e.g. providing buffering ([H02J 7/14](#) takes precedence)

Project: RP12335 (H02K)

C H02K 15/00

Methods**Processes** or apparatus specially adapted for manufacturing, assembling, maintaining or repairing of dynamo-electric machines

WARNING

Group H02K 15/00 is impacted by reclassification into groups [H02K 15/40](#), [H02K 15/50](#), [H02K 15/60](#), [H02K 15/70](#), [H02K 15/80](#), [H02K 15/90](#) and [H02K 15/95](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- D H02K 15/0006
 - {Disassembling, repairing or modifying dynamo-electric machines (repairing of cooling fluid boxes H02K 15/0093)}
 - <administratively transferred to [H02K 15/50](#)>
- D H02K 15/0012
 - {Manufacturing cage rotors}
 - <administratively transferred to [H02K 15/023](#)>
- D H02K 15/0018
 - {Applying slot closure means in the core; Manufacture of slot closure means}
 - <administratively transferred to [H02K 15/13](#)>
- D H02K 15/0025
 - {Shaping or compacting conductors or winding heads after the installation of the winding in the core or machine (methods or apparatus for simultaneously twisting a plurality of hairpins prior to mounting H02K 15/0428); Applying fastening means on winding heads}
 - <administratively transferred to [H02K 15/20](#)>
- D H02K 15/0031
 - • {Shaping or compacting conductors in slots or around salient poles (H02K 15/005 takes precedence)}
 - <administratively transferred to [H02K 15/22](#)>
- D H02K 15/0037
 - • {Shaping or compacting winding heads (H02K 15/005, H02K 15/0087 and H02K 15/0428 take precedence)}
 - <administratively transferred to [H02K 15/24](#)>
- D H02K 15/0043
 - • • {Applying fastening means on winding headS (fastening by applying resin, glue, varnish and similar means H02K 15/12)}
 - <administratively transferred to [H02K 15/26](#)>
- D H02K 15/005
 - • {by means of electrodynamic forces}
 - <administratively transferred to [H02K 15/28](#)>
- D H02K 15/0056
 - {Manufacturing winding connections}
 - <administratively transferred to [H02K 15/30](#)>
- D H02K 15/0062
 - • {Manufacturing the terminal arrangement per se; Connecting the terminals to an external circuit}
 - <administratively transferred to [H02K 15/32](#)>
- D H02K 15/0068
 - • {Connecting winding sections; Forming leads; Connecting leads to terminals}
 - <administratively transferred to [H02K 15/33](#)>
- D H02K 15/0081
 - • • {for form-wound windings}
 - <administratively transferred to [H02K 15/35](#)>
- D H02K 15/0087
 - • • • {characterised by the method or apparatus for simultaneously twisting a plurality of hairpins open ends after insertion into the machine (for simultaneously twisting a plurality of hairpins prior to mounting into the machine H02K 15/0428)}
 - <administratively transferred to [H02K 15/36](#)>

- | | | |
|---|--------------|--|
| D | H02K 15/0093 | <ul style="list-style-type: none"> • • • {Manufacturing or repairing cooling fluid boxes, i.e. terminals of fluid cooled windings ensuring both electrical and fluid connection} <p><administratively transferred to H02K 15/38></p> |
| C | H02K 15/02 | <ul style="list-style-type: none"> • of stator or rotor bodies <p><u>WARNING</u></p> <p>Group H02K 15/02 is impacted by reclassification into groups H02K 15/021, H02K 15/025, H02K 15/026, H02K 15/027, H02K 15/0273, H02K 15/0275, H02K 15/0278 and H02K 15/028.</p> <p>All groups listed in this Warning should be considered in order to perform a complete search.</p> |
| N | H02K 15/021 | <ul style="list-style-type: none"> • • Magnetic cores <p><u>WARNING</u></p> <p>Groups H02K 15/021 and H02K 15/025 are incomplete pending reclassification of documents from group H02K 15/02.</p> <p>Groups H02K 15/02, H02K 15/021 and H02K 15/025 should be considered in order to perform a complete search.</p> |
| C | H02K 15/022 | <ul style="list-style-type: none"> • • {with salient poles or claw-shaped poles} <p><u>WARNING</u></p> <p>Group H02K 15/022 is impacted by reclassification into groups H02K 15/0225, H02K 15/026 and H02K 15/028.</p> <p>All groups listed in this Warning should be considered in order to perform a complete search.</p> |
| N | H02K 15/0225 | <ul style="list-style-type: none"> • • • with claw-shaped poles <p><u>WARNING</u></p> <p>Group H02K 15/0225 is incomplete pending reclassification of documents from group H02K 15/022.</p> <p>Groups H02K 15/022 and H02K 15/0225 should be considered in order to perform a complete search.</p> |
| N | H02K 15/023 | <ul style="list-style-type: none"> • • • Cage rotors |
| D | H02K 15/024 | <ul style="list-style-type: none"> • • {with slots} <p><administratively transferred to H02K 15/021></p> |
| N | H02K 15/025 | <ul style="list-style-type: none"> • • • characterised by skewed structures in cores |
| T | H02K 15/026 | <ul style="list-style-type: none"> • • • {Wound cores} <p><u>WARNING</u></p> <p>Group H02K 15/026 is incomplete pending reclassification of documents from groups H02K 15/02 and H02K 15/022.</p> <p>Groups H02K 15/02, H02K 15/022 and H02K 15/026 should be considered in order to perform a complete search.</p> |
| N | H02K 15/027 | <ul style="list-style-type: none"> • • • Punching the cores <p><u>WARNING</u></p> <p>Groups H02K 15/027 is incomplete pending reclassification of documents from group H02K 15/02.</p> <p>Groups H02K 15/02 and H02K 15/027 should be considered in order to perform a complete search.</p> |

- N H02K 15/0273
- • • Laminating the cores
- WARNING
Group [H02K 15/0273](#) is incomplete pending reclassification of documents from group [H02K 15/02](#).
Groups [H02K 15/02](#) and [H02K 15/0273](#) should be considered in order to perform a complete search.
- N H02K 15/0275
- • • Annealing the cores
- WARNING
Group [H02K 15/0275](#) is incomplete pending reclassification of documents from group [H02K 15/02](#).
Groups [H02K 15/02](#) and [H02K 15/0275](#) should be considered in order to perform a complete search.
- N H02K 15/0278
- • • Welding the cores
- WARNING
Group [H02K 15/0278](#) is incomplete pending reclassification of documents from group [H02K 15/02](#).
Groups [H02K 15/02](#) and [H02K 15/0278](#) should be considered in order to perform a complete search.
- T H02K 15/028
- • • ~~{for fastening to casing or support, respectively to shaft or hub}~~Fastening stator or rotor bodies to casings, supports, shafts or hubs
- WARNING
Group [H02K 15/028](#) is incomplete pending reclassification of documents from groups [H02K 15/02](#) and [H02K 15/022](#).
Groups [H02K 15/02](#), [H02K 15/022](#) and [H02K 15/028](#) should be considered in order to perform a complete search.
- C H02K 15/03
- • having permanent magnets
- WARNING
Group [H02K 15/03](#) is impacted by reclassification into groups [H02K 15/035](#) and [H02K 15/038](#).
Groups [H02K 15/03](#), [H02K 15/035](#) and [H02K 15/038](#) should be considered in order to perform a complete search.
- N H02K 15/035
- • • on the rotor
- WARNING
Group [H02K 15/035](#) is incomplete pending reclassification of documents from group [H02K 15/03](#).
Groups [H02K 15/03](#) and [H02K 15/035](#) should be considered in order to perform a complete search.
- N H02K 15/038
- • • Polarising or magnetising the permanent magnets
- WARNING
Group [H02K 15/038](#) is incomplete pending reclassification of documents from group [H02K 15/03](#).
Groups [H02K 15/03](#) and [H02K 15/038](#) should be considered in order to perform a complete search.
- C H02K 15/04
- of windings; prior to *their* mounting into *the* machines (insulating windings [H02K 15/10](#), [H02K 15/12](#))
- WARNING
Group [H02K 15/04](#) is impacted by reclassification into groups [H02K 15/043](#), [H02K 15/044](#), [H02K 15/046](#), [H02K 15/047](#) and [H02K 15/048](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- | | | |
|---|--------------|---|
| M | H02K 15/0407 | <ul style="list-style-type: none"> • {Windings manufactured Manufacturing of windings by etching, printing or stamping the complete coil coils |
| M | H02K 15/0414 | <ul style="list-style-type: none"> • {Windings the windings consisting of separate elements, e.g. bars, hairpins, segments, half coils segments or half coils |
| M | H02K 15/0421 | <ul style="list-style-type: none"> • • {and consisting of single conductors, e.g. hairpins} |
| M | H02K 15/0428 | <ul style="list-style-type: none"> • • • {characterised by the method Processes or apparatus for simultaneously twisting a plurality of two or more hairpins {for simultaneously twisting a plurality of hairpins open ends after insertion into the machine H02K 15/0087} |
| Q | H02K 15/043 | <ul style="list-style-type: none"> • • winding flat conductive wires or sheets <p><u>WARNING</u>
Group H02K 15/043 is incomplete pending reclassification of documents from group H02K 15/04.
Group H02K 15/043 is also impacted by reclassification into groups H02K 15/0431, H02K 15/0432, H02K 15/0433, H02K 15/0434, H02K 15/044, H02K 15/046 and H02K 15/047.
All groups listed in this Warning should be considered in order to perform a complete search.</p> |
| Q | H02K 15/0431 | <ul style="list-style-type: none"> • • • {Concentrated windings} <p><u>WARNING</u>
Group H02K 15/0431 is incomplete pending reclassification of documents from groups H02K 15/043 and H02K 15/0432.
Group H02K 15/0431 is also impacted by reclassification into groups H02K 15/0432, H02K 15/046 and H02K 15/047.
All groups listed in this Warning should be considered in order to perform a complete search.</p> |
| Q | H02K 15/0432 | <ul style="list-style-type: none"> • • • {Distributed windings} <p><u>WARNING</u>
Group H02K 15/0432 is incomplete pending reclassification of documents from groups H02K 15/043 and H02K 15/0431.
Group H02K 15/0432 is also impacted by reclassification into groups H02K 15/0431, H02K 15/046 and H02K 15/047.
All groups listed in this Warning should be considered in order to perform a complete search.</p> |
| Q | H02K 15/0433 | <ul style="list-style-type: none"> • • • • {of the wave winding type} <p><u>WARNING</u>
Group H02K 15/0433 is incomplete pending reclassification of documents from group H02K 15/043.
Group H02K 15/0433 is also impacted by reclassification into group H02K 15/048.
Groups H02K 15/0433, H02K 15/043 and H02K 15/048 should be considered in order to perform a complete search.</p> |
| N | H02K 15/0434 | <ul style="list-style-type: none"> • • • • {manufactured by shaping an annular winding} <p><u>WARNING</u>
Group H02K 15/0434 is incomplete pending reclassification of documents from groups H02K 15/043 and H02K 15/0485.</p> |

Groups [H02K 15/043](#), [H02K 15/0485](#) and [H02K 15/0434](#) should be considered in order to perform a complete search.

- | | | |
|---|--------------|--|
| D | H02K 15/0435 | <ul style="list-style-type: none"> • • {Wound windings} <li style="padding-left: 20px;"><administratively transferred to H02K 15/043> |
| N | H02K 15/044 | <ul style="list-style-type: none"> • • winding non-flat conductive wires, e.g. cables or cords <p><u>WARNING</u>
Group H02K 15/044 is incomplete pending reclassification of documents from groups H02K 15/04 and H02K 15/043.
Groups H02K 15/04, H02K 15/043 and H02K 15/044 should be considered in order to perform a complete search.</p> |
| D | H02K 15/0442 | <ul style="list-style-type: none"> • • {Loop windings (manufacturing of windings consisting of overlapped loops H02K 15/0464)} <li style="padding-left: 20px;"><administratively transferred to H02K 15/0431> |
| D | H02K 15/045 | <ul style="list-style-type: none"> • • • {Form wound coils} <li style="padding-left: 20px;"><administratively transferred to H02K 15/0431> |
| N | H02K 15/046 | <ul style="list-style-type: none"> • • Concentrated windings <p><u>WARNING</u>
Group H02K 15/046 is incomplete pending reclassification of documents from groups H02K 15/04, H02K 15/043, H02K 15/0431 and H02K 15/0432.
All groups listed in this Warning should be considered in order to perform a complete search.</p> |
| D | H02K 15/0464 | <ul style="list-style-type: none"> • • {Lap windings (when on diagonally wound hollow coils H02K 15/0492)} <li style="padding-left: 20px;"><administratively transferred to H02K 15/0432> |
| N | H02K 15/047 | <ul style="list-style-type: none"> • • Distributed windings <p><u>WARNING</u>
Group H02K 15/047 is incomplete pending reclassification of documents from groups H02K 15/04, H02K 15/043, H02K 15/0431 and H02K 15/0432.
All groups listed in this Warning should be considered in order to perform a complete search.</p> |
| D | H02K 15/0471 | <ul style="list-style-type: none"> • • • {manufactured by flattening a spiral winding} <li style="padding-left: 20px;"><administratively transferred to H02K 15/0432> |
| D | H02K 15/0478 | <ul style="list-style-type: none"> • • {Wave windings, undulated windings (when on diagonally wound hollow coils H02K 15/0492)} <li style="padding-left: 20px;"><administratively transferred to H02K 15/0433> |
| N | H02K 15/048 | <ul style="list-style-type: none"> • • • of the wave winding type <p><u>WARNING</u>
Group H02K 15/048 is incomplete pending reclassification of documents from groups H02K 15/04 and H02K 15/0433.
Groups H02K 15/04, H02K 15/0433 and H02K 15/048 should be considered in order to perform a complete search.</p> |
| C | H02K 15/0485 | <ul style="list-style-type: none"> • • • {manufactured by shaping an annular winding} <p><u>WARNING</u>
Group H02K 15/0485 is impacted by reclassification into group H02K 15/0434.
Groups H02K 15/0485 and H02K 15/0434 should be considered in order to perform a complete search.</p> |

- D H02K 15/0492
- • • {Diagonally wound hollow coils}
 - <administratively transferred to [H02K 15/043](#)>
- M H02K 15/06
- Embedding prefabricated windings in *the* machines
- M H02K 15/061
- • {Air-gap windings}
- M H02K 15/062
- • {Windings in slots; ~~salient pole windings~~ *Salient pole windings*}
- F H02K 15/063
(Frozen)
- • • {Windings for large electric machines, e.g. bar windings (windings consisting of cables [H02K 15/065](#))}
- WARNING**
*Group [H02K 15/063](#) is no longer used for the classification of documents as of January 1, 2025.
 The content of this group is being reclassified into groups [H02K 15/0643](#), [H02K 15/0646](#), [H02K 15/065](#), [H02K 15/066](#), [H02K 15/067](#) and [H02K 15/068](#).
 All groups listed in this Warning should be considered in order to perform a complete search.*
- C H02K 15/064
- • • {Windings consisting of separate segments; ~~e.g. hairpin windings~~ *(H02K 15/063 takes precedence)*}
- WARNING**
*Group [H02K 15/064](#) is impacted by reclassification into groups [H02K 15/0643](#) and [H02K 15/0646](#).
 Groups [H02K 15/064](#), [H02K 15/0643](#) and [H02K 15/0646](#) should be considered in order to perform a complete search.*
- N H02K 15/0643
- • • • Hairpin windings
- WARNING**
*Group [H02K 15/0643](#) is incomplete pending reclassification of documents from group [H02K 15/064](#).
 Groups [H02K 15/064](#) and [H02K 15/0643](#) should be considered in order to perform a complete search.*
- N H02K 15/0646
- • • • Bar windings consisting of pre-assembled multiple conductors, e.g. Roebel bars
- WARNING**
*Group [H02K 15/0646](#) is incomplete pending reclassification of documents from groups [H02K 15/063](#) and [H02K 15/064](#).
 Groups [H02K 15/063](#), [H02K 15/064](#) and [H02K 15/0646](#) should be considered in order to perform a complete search.*
- M H02K 15/065
- • • {Windings consisting of complete sections, e.g. coils; ~~waves or waves~~ *(windings for large electric machines other than those consisting of cables [H02K 15/063](#))*}
- WARNING**
*Groups [H02K 15/065](#), [H02K 15/066](#), [H02K 15/067](#) and [H02K 15/068](#) are incomplete pending reclassification of documents from group [H02K 15/063](#).
 All groups listed in this Warning should be considered in order to perform a complete search.*
- M H02K 15/066
- • • • {inserted perpendicularly to the axis of the slots or inter-polar channels}
- M H02K 15/067
- • • • {inserted in parallel to the axis of the slots or inter-polar channels}
- M H02K 15/068
- • • • {~~Strippers~~ *Strippers; Embedding windings by strippers*}
- U H02K 15/08
- Forming windings by laying conductors into or around core parts
- U H02K 15/085
- • by laying conductors into slotted stators

- U H02K 15/09
 - by laying conductors into slotted rotors
- U H02K 15/095
 - by laying conductors around salient poles
- C H02K 15/10
 - Applying solid insulation to windings, stators or rotors, *e.g. applying insulating tapes*

WARNING

Group [H02K 15/10](#) is incomplete pending reclassification of documents from group [H02K 15/105](#).

Group [H02K 15/10](#) is also impacted by reclassification into groups [H02K 15/104](#), [H02K 15/106](#) and [H02K 15/108](#).

All groups listed in this Warning should be considered in order to perform a complete search.
- N H02K 15/104
 - Insulating between conductors

WARNING

Group [H02K 15/104](#) is incomplete pending reclassification of documents from groups [H02K 15/10](#) and [H02K 15/105](#).

Groups [H02K 15/10](#), [H02K 15/105](#) and [H02K 15/104](#) should be considered in order to perform a complete search.
- F H02K 15/105
(Frozen)
 - {to the windings}

WARNING

Group [H02K 15/105](#) is no longer used for the classification of documents as of January 1, 2025.

The content of this group is being reclassified into groups [H02K 15/10](#), [H02K 15/104](#), [H02K 15/106](#) and [H02K 15/108](#).

All groups listed in this Warning should be considered in order to perform a complete search.
- N H02K 15/106
 - Insulating between conductors and cores

WARNING

Group [H02K 15/106](#) is incomplete pending reclassification of documents from groups [H02K 15/10](#) and [H02K 15/105](#).

All groups listed in this Warning should be considered in order to perform a complete search.
- N H02K 15/108
 - with slot liners

WARNING

Group [H02K 15/108](#) is incomplete pending reclassification of documents from groups [H02K 15/10](#) and [H02K 15/105](#).

All groups listed in this Warning should be considered in order to perform a complete search.
- C H02K 15/12
 - Impregnating, *moulding insulation*, heating or drying of windings, stators, rotors or machines

WARNING

Group [H02K 15/12](#) is impacted by reclassification into groups [H02K 15/121](#), [H02K 15/122](#) and [H02K 15/123](#).

All groups listed in this Warning should be considered in order to perform a complete search.
- N H02K 15/121
 - of cores

WARNING

Group [H02K 15/121](#) is incomplete pending reclassification of documents from group [H02K 15/12](#).

Groups [H02K 15/12](#) and [H02K 15/121](#) should be considered in order to perform a complete search.

N H02K 15/122

- of windings

WARNING

Group [H02K 15/122](#) is incomplete pending reclassification of documents from group [H02K 15/12](#).

Groups [H02K 15/12](#) and [H02K 15/122](#) should be considered in order to perform a complete search.

N H02K 15/123

- of casings or enclosures

WARNING

Group [H02K 15/123](#) is incomplete pending reclassification of documents from group [H02K 15/12](#).

Groups [H02K 15/12](#) and [H02K 15/123](#) should be considered in order to perform a complete search.

M H02K 15/125

- {Heating or drying of machines in operational state, e.g. standstill heating}

N H02K 15/13

- Applying slot closure means in the cores; Manufacture of slot closure means

C H02K 15/14

- Casings; Enclosures; Supports

WARNING

Group [H02K 15/14](#) is impacted by reclassification into groups [H02K 15/142](#), [H02K 15/144](#), [H02K 15/146](#) and [H02K 15/148](#).

All groups listed in this Warning should be considered in order to perform a complete search.

N H02K 15/142

- by moulding

WARNING

Group [H02K 15/142](#) is incomplete pending reclassification of documents from group [H02K 15/14](#).

Groups [H02K 15/14](#) and [H02K 15/142](#) should be considered in order to perform a complete search.

N H02K 15/144

- of shafts, bearings or supports therefor

WARNING

Group [H02K 15/144](#) is incomplete pending reclassification of documents from group [H02K 15/14](#).

Groups [H02K 15/14](#) and [H02K 15/144](#) should be considered in order to perform a complete search.

N H02K 15/146

- of brush holders

WARNING

Group [H02K 15/146](#) is incomplete pending reclassification of documents from group [H02K 15/14](#).

Groups [H02K 15/14](#) and [H02K 15/146](#) should be considered in order to perform a complete search.

N H02K 15/148

- Insulating casings or enclosures ([H02K 15/123](#) takes precedence)

WARNING

Group [H02K 15/148](#) is incomplete pending reclassification of documents from group [H02K 15/14](#).

Groups [H02K 15/14](#) and [H02K 15/148](#) should be considered in order to perform a complete search.

M H02K 15/16

- CenteringCentring rotors within the statorstators; Balancing-rotors

- M H02K 15/165
- • ~~{Balancing the rotor}~~ *Balancing the rotors*
- N H02K 15/20
- Shaping or compacting conductors or winding heads after the installation of the winding in the cores or machines; Applying fastening means on winding heads
- N H02K 15/22
- • Shaping or compacting conductors in slots or around salient poles ([H02K 15/28](#) takes precedence)
- N H02K 15/24
- • Shaping or compacting winding heads ([H02K 15/0428](#), [H02K 15/28](#), [H02K 15/36](#) take precedence)
- N H02K 15/26
- • • Applying fastening means on winding heads
- N H02K 15/28
- • using electrodynamic forces
- Q H02K 15/30
- Manufacture of winding connections
- WARNING
Group [H02K 15/30](#) is impacted by reclassification into group [H02K 15/34](#). Groups [H02K 15/30](#) and [H02K 15/34](#) should be considered in order to perform a complete search.
- N H02K 15/32
- • Manufacture of terminal arrangements; Connecting the terminals to external circuits
- Q H02K 15/33
- • Connecting winding sections; Forming leads; Connecting leads to terminals
- WARNING
Group [H02K 15/33](#) is impacted by reclassification into group [H02K 15/34](#). Groups [H02K 15/33](#) and [H02K 15/34](#) should be considered in order to perform a complete search.
- N H02K 15/34
- • • Connecting the neutral point
- WARNING
Group [H02K 15/34](#) is incomplete pending reclassification of documents from groups [H02K 15/30](#) and [H02K 15/33](#). Groups [H02K 15/30](#), [H02K 15/33](#) and [H02K 15/34](#) should be considered in order to perform a complete search.
- N H02K 15/35
- • • Form-wound windings
- N H02K 15/36
- • • Processes or apparatus for simultaneously twisting two or more open ends of hairpins after their insertion into the machine (for simultaneously twisting two or more hairpins prior to mounting into the machine [H02K 15/0428](#))
- N H02K 15/38
- • • Manufacturing or repairing cooling fluid boxes, e.g. ensuring both electrical and fluid connection of terminals of fluid cooled windings
- N H02K 15/40
- Assembling dynamo-electric machines ([H02K 15/16](#) takes precedence)
- WARNING
Group [H02K 15/40](#) is incomplete pending reclassification of documents from group [H02K 15/00](#). Groups [H02K 15/00](#) and [H02K 15/40](#) should be considered in order to perform a complete search.
- N H02K 15/50
- Disassembling, repairing or modifying dynamo-electric machines (repairing of cooling fluid boxes [H02K 15/38](#))
- WARNING
Group [H02K 15/50](#) is incomplete pending reclassification of documents from group [H02K 15/00](#). Groups [H02K 15/00](#) and [H02K 15/50](#) should be considered in order to perform a complete search.

- N H02K 15/60
- Hoisting or moving dynamo-electric machines
- WARNING
Group [H02K 15/60](#) is incomplete pending reclassification of documents from group [H02K 15/00](#).
Groups [H02K 15/00](#) and [H02K 15/60](#) should be considered in order to perform a complete search.
- N H02K 15/70
- Cleaning dynamo-electric machines
- WARNING
Group [H02K 15/70](#) is incomplete pending reclassification of documents from group [H02K 15/00](#).
Groups [H02K 15/00](#) and [H02K 15/70](#) should be considered in order to perform a complete search.
- N H02K 15/80
- Manufacturing lines specially adapted for dynamo-electrical machines, e.g. feeding or unloading
- WARNING
Group [H02K 15/80](#) is incomplete pending reclassification of documents from group [H02K 15/00](#).
Groups [H02K 15/00](#) and [H02K 15/80](#) should be considered in order to perform a complete search.
- N H02K 15/90
- Positioning or clamping dynamo-electric machines, e.g. jigs
- WARNING
Group [H02K 15/90](#) is incomplete pending reclassification of documents from group [H02K 15/00](#).
Groups [H02K 15/00](#) and [H02K 15/90](#) should be considered in order to perform a complete search.
- N H02K 15/95
- Installation of current collectors, e.g. commutators, slip-rings or brushes
- WARNING
Group [H02K 15/95](#) is incomplete pending reclassification of documents from group [H02K 15/00](#).
Groups [H02K 15/00](#) and [H02K 15/95](#) should be considered in order to perform a complete search.

Project: RP11793-F (H02K)

- U H02K 17/00 **Asynchronous induction motors; Asynchronous induction generators**
- U H02K 17/02 • Asynchronous induction motors
- M H02K 17/16 • • having rotors with internally short-circuited windings, e.g. cage rotors
- WARNING
Groups H02K-17/16, H02K-17/168, H02K-17/18 and H02K-17/20 are incomplete pending reclassification of documents from group H02K-17/165. All groups listed in this Warning should be considered in order to perform a complete search.
- D H02K 17/165
—(Frozen)
- • {characterised by the squirrel-cage or other short-circuited windings}
- WARNING
Group H02K 17/165 is no longer used for the classification of documents as of May 1, 2023.
The content of this group is being reclassified into groups H02K 17/16, H02K 17/168, H02K 17/18 and H02K 17/20.

All groups listed in this Warning should be considered in order to perform a complete search.

Project: Unknown (H02M)

U	H02M 1/00	Details of apparatus for conversion
M	H02M 1/10	<ul style="list-style-type: none"> • Arrangements incorporating converting means for enabling loads to be operated at will from different kinds of power supplies, e.g. from ae or de AC or DC
M	H02M 1/12	<ul style="list-style-type: none"> • Arrangements for reducing harmonics from ae AC input or output
M	H02M 1/14	<ul style="list-style-type: none"> • Arrangements for reducing ripples from de DC input or output
M	H02M 3/00	Conversion of de DC power input into de DC power output
M	H02M 3/02	<ul style="list-style-type: none"> • without intermediate conversion into ae AC
M	H02M 3/22	<ul style="list-style-type: none"> • with intermediate conversion into ae AC
U	H02M 3/24	<ul style="list-style-type: none"> • • by static converters
M	H02M 3/26	<ul style="list-style-type: none"> • • • using discharge tubes without control electrode or semiconductor devices without control electrode to produce the intermediate ae AC
M	H02M 3/28	<ul style="list-style-type: none"> • • • using discharge tubes with control electrode or semiconductor devices with control electrode to produce the intermediate ae AC
M	H02M 3/285	<ul style="list-style-type: none"> • • • {Single converters with a plurality of output stages connected in parallel (parallel operation of a plurality of converters in de distribution networks H02J 1/10 parallel operation of a plurality of converters in DC distribution networks H02J 1/10)}
M	H02M 5/00	Conversion of ae AC power input into ae AC power output, e.g. for change of voltage, for change of frequency, for change of number of phases
M	H02M 5/02	<ul style="list-style-type: none"> • without intermediate conversion into de DC
M	H02M 5/40	<ul style="list-style-type: none"> • with intermediate conversion into de DC
U	H02M 5/42	<ul style="list-style-type: none"> • • by static converters
M	H02M 5/44	<ul style="list-style-type: none"> • • • using discharge tubes or semiconductor devices to convert the intermediate de into ae DC into AC
M	H02M 7/00	Conversion of ae AC power input into de DC power output; Conversion of de DC power input into ae AC power output
M	H02M 7/02	<ul style="list-style-type: none"> • Conversion of ae AC power input into de DC power output without possibility of reversal
M	H02M 7/42	<ul style="list-style-type: none"> • Conversion of de DC power input into ae AC power output without possibility of reversal

Project: Unknown (H02P)

U	H02P 1/00	Arrangements for starting electric motors or dynamo-electric converters (starting of synchronous motors with electronic commutators H02P 6/20, H02P 6/22; starting dynamo-electric motors rotating step by step H02P 8/04; vector control H02P 21/00)
		NOTE
		{Group H02P 1/029 takes precedence over groups H02P 1/26 - H02P 1/54 .}
U	H02P 1/16	<ul style="list-style-type: none"> • for starting dynamo-electric motors or dynamo-electric converters
M	H02P 1/18	<ul style="list-style-type: none"> • • for starting an individual de DC motor

M	H02P 1/24	<ul style="list-style-type: none"> • for starting an individual aeAC commutator motor (starting of ae/de commutator motors H02P 1/18 <i>starting of AC/DC commutator motors H02P 1/18</i>)
U	H02P 3/00	Arrangements for stopping or slowing electric motors, generators, or dynamo-electric converters (stopping of synchronous motors with electronic commutators H02P 6/24; stopping dynamo-electric motors rotating step by step H02P 8/24; vector control H02P 21/00)
U	H02P 3/06	<ul style="list-style-type: none"> • for stopping or slowing an individual dynamo-electric motor or dynamo-electric converter
M	H02P 3/08	<ul style="list-style-type: none"> • for stopping or slowing a deDC motor
M	H02P 3/18	<ul style="list-style-type: none"> • for stopping or slowing an aeAC motor
M	H02P 3/24	<ul style="list-style-type: none"> • by applying deDC to the motor
U	H02P 5/00	Arrangements specially adapted for regulating or controlling the speed or torque of two or more electric motors (H02P 6/04, H02P 8/40 take precedence)
M	H02P 5/60	<ul style="list-style-type: none"> • controlling combinations of de and aeDC and AC dynamo-electric motors (H02P 5/46 takes precedence)
M	H02P 5/68	<ul style="list-style-type: none"> • controlling two or more deDC dynamo-electric motors (H02P 5/46, H02P 5/60 take precedence)
M	H02P 5/74	<ul style="list-style-type: none"> • controlling two or more aeAC dynamo-electric motors (H02P 5/46, H02P 5/60 take precedence)
U	H02P 7/00	Arrangements for regulating or controlling the speed or torque of electric DC motors
M	H02P 7/06	<ul style="list-style-type: none"> • for regulating or controlling an individual deDC dynamo-electric motor by varying field or armature current
U	H02P 11/00	Arrangements for controlling dynamo-electric converters
M	H02P 11/04	<ul style="list-style-type: none"> • for controlling dynamo-electric converters having a deDC output
M	H02P 11/06	<ul style="list-style-type: none"> • for controlling dynamo-electric converters having an aeAC output
U	H02P 23/00	Arrangements or methods for the control of AC motors characterised by a control method other than vector control
		<u>NOTE</u> When classifying in this group, subject matter also relating to groups H02P 21/00 , H02P 25/00 or H02P 27/00 is further classified in those groups whenever appropriate.
M	H02P 23/10	<ul style="list-style-type: none"> • Controlling by adding a deDC current
U	H02P 25/00	Arrangements or methods for the control of AC motors characterised by the kind of AC motor or by structural details
		<u>NOTE</u> When classifying in this group, subject matter also relating to groups H02P 21/00 , H02P 23/00 or H02P 27/00 is further classified in those groups whenever appropriate.
U	H02P 25/16	<ul style="list-style-type: none"> • characterised by the circuit arrangement or by the kind of wiring
M	H02P 25/30	<ul style="list-style-type: none"> • the motor being controlled by a control effected upon an aeAC generator supplying it

- U H02P 27/00** Arrangements or methods for the control of AC motors characterised by the kind of supply voltage (of two or more motors [H02P 5/00](#); of synchronous motors with electronic commutators [H02P 6/00](#); of DC motors [H02P 7/00](#); of stepping motors [H02P 8/00](#))
- NOTE**
When classifying in this group, subject matter also relating to groups [H02P 21/00](#), [H02P 23/00](#) or [H02P 25/00](#) is further classified in those groups whenever appropriate
- U H02P 27/04** • using variable-frequency supply voltage, e.g. inverter or converter supply voltage
- M H02P 27/06** • • using ~~de-to-ac~~[DC to AC](#) converters or inverters ([H02P 27/05](#) takes precedence)
- M H02P 27/16** • • using ~~ac-to-ac~~[AC to AC](#) converters without intermediate conversion to ~~de~~[DC](#) ([H02P 27/05](#) takes precedence)

Project: RP12333 (H02S)

- M H02S** **GENERATION OF ELECTRIC POWER BY CONVERSION OF INFRARED RADIATION, VISIBLE LIGHT OR ULTRAVIOLET LIGHT, e.g. USING PHOTOVOLTAIC [PV] MODULES** (obtaining electrical energy from radioactive sources [G21H 1/12](#); ~~light sensitive inorganic semiconductor devices~~ [H01L 31/00](#); ~~light sensitive inorganic semiconductor devices~~ [H10F](#); light sensitive organic semiconductor devices [H10K 30/00](#); thermoelectric devices [H10N 10/00](#); pyroelectric devices [H10N 15/00](#))
- U H02S 10/00** **PV power plants; Combinations of PV energy systems with other systems for the generation of electric power**
- M H02S 10/30** • Thermophotovoltaic systems (~~photovoltaic cells specially adapted for conversion or sensing of infrared [IR] radiation~~ [H01L 31/00](#); ~~photovoltaic cells specially adapted for conversion or sensing of infrared [IR] radiation~~ [H10F 10/00](#); thermoelectric devices [H10N 10/00](#))
- M H02S 30/00** **Structural details of PV modules other than those related to light conversion (semiconductor device aspects of modules of electrolytic light sensitive devices [H01G 9/20](#), of inorganic PV modules ~~[H01L 31/00](#)~~[H10F 10/00](#), [H10F 19/00](#), of organic PV modules [H10K 30/00](#))**
- U H02S 40/00** **Components or accessories in combination with PV modules, not provided for in groups [H02S 10/00](#) - [H02S 30/00](#)**
- U H02S 40/20** • Optical components
- M H02S 40/22** • • Light-reflecting or light-concentrating means (~~directly associated with the PV cell or integrated with the PV cell~~ [H01L 31/054](#)~~directly associated with the PV cell or integrated with the PV cell~~ [H10F 77/42](#))
- U H02S 40/30** • Electrical components
- U H02S 40/34** • • comprising specially adapted electrical connection means to be structurally associated with the PV module, e.g. junction boxes
- M H02S 40/345** • • {with cooling means associated with the electrical connection means, e.g. cooling means associated with or applied to the junction box (~~cooling means for PV cells~~ [H01L 31/052](#), ~~for PV modules~~ [H02S 40/42](#)~~cooling means for PV cells~~ [H10F 77/63](#), ~~for PV modules~~ [H02S 40/42](#))}
- U H02S 40/40** • Thermal components ([H02S 10/30](#) takes precedence)
- M H02S 40/42** • • Cooling means (~~cooling means directly associated or integrated with the PV cell~~ [H01L 31/052](#))

- M H02S 40/44
- Means to utilise heat energy, e.g. hybrid systems producing warm water and electricity at the same time (~~directly associated with the PV cell or integrated with the PV cell H01L 31/0525~~ *directly associated with the PV cell or integrated with the PV cell H10F 77/67*)

Project: Unknown (H03B)

- M H03B 28/00
- Generation of oscillations by methods not covered by groups [H03B 5/00](#) - [H03B 27/00](#), including modification of the waveform to produce sinusoidal oscillations (analogue function generators for performing computing operations [G06G 7/26](#); ~~use of transformers for conversion of waveform in ac-ac converters H02M 5/18~~; *use of transformers for conversion of waveform in AC-AC converters H02M 5/18*)

Project: Unknown (H03D)

- M H03D
- DEMODULATION OR TRANSFERENCE OF MODULATION FROM ONE CARRIER TO ANOTHER (masers, lasers [H01S](#); circuits capable of acting both as modulator and demodulator [H03C](#); details applicable to both modulators and frequency-changers [H03C](#); demodulating pulses [H03K 9/00](#); transforming types of pulse modulation [H03K 11/00](#); coding, decoding or code conversion, in general [H03M](#); repeater stations [H04B 7/14](#); ~~demodulators adapted for ac systems of digital information transmission H04L 27/00~~; *demodulators adapted for AC systems of digital information transmission H04L 27/00*; synchronous demodulators adapted for colour television [H04N 9/66](#))

NOTE

This subclass covers only:

- demodulation or transference of signals modulated on a sinusoidal carrier or on electromagnetic waves;
- comparing phase or frequency of two mutually-independent oscillations.

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

- U H03D 1/00
- Demodulation of amplitude-modulated oscillations ([H03D 5/00](#), [H03D 9/00](#), [H03D 11/00](#) take precedence)**
- U H03D 1/08
- by means of non-linear two-pole elements ([H03D 1/22](#), [H03D 1/26](#), [H03D 1/28](#) take precedence)
- U H03D 1/10
- of diodes
- M H03D 1/12
- with provision for equalising ~~ac and de~~ *AC and DC* loads

Project: Unknown (H03F)

- U H03F 3/00
- Amplifiers with only discharge tubes or only semiconductor devices as amplifying elements**

NOTE

Groups [H03F 3/20](#) - [H03F 3/72](#) take precedence over groups [H03F 3/02](#) - [H03F 3/189](#).

{This Note corresponds to IPC Note (1) relating to [H03F 3/02](#) - [H03F 3/189](#).}

- M H03F 3/42
- Amplifiers with two or more amplifying elements having their ~~de~~ *DC* paths in series with the load, the control electrode of each element being excited by at least part of the input signal, e.g. so-called totem-pole amplifiers

Project: MP12364 (H03H)

M H03H IMPEDANCE NETWORKS, e.g. RESONANT CIRCUITS; RESONATORS
~~(measuring, testing G01R; arrangements for producing a reverberation or echo sound G10K 15/08; impedance networks or resonators consisting of distributed impedances, e.g. of the waveguide type, H01P; control of amplification, e.g. bandwidth control of amplifiers, H03G; tuning resonant circuits, e.g. tuning coupled resonant circuits, H03J; networks for modifying the frequency characteristics of communication systems H04B waveguides, resonators, lines or other devices of the waveguide type H01P)~~

NOTES

1. This subclass covers:
 - networks comprising lumped impedance elements;
 - networks comprising distributed impedance elements together with lumped impedance elements;
 - networks comprising electromechanical or electro-acoustic elements;
 - networks simulating reactances and comprising discharge tubes or semiconductor devices;
 - constructions of electromechanical resonators.
2. In this subclass, the following expression is used with the meaning indicated: "passive elements" means resistors, capacitors, inductors, mutual inductors or diodes.
3. Attention is drawn to the Notes following the titles of class [B81](#) and subclass [B81B](#) relating to "microstructural devices" and "microstructural systems".
4. In this subclass, main groups with a higher number take precedence.

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

U H03H 1/00 **Constructional details of impedance networks whose electrical mode of operation is not specified or applicable to more than one type of network (constructional details of electromechanical transducers [H03H 9/00](#))**

M H03H 1/02 • ~~of~~ RC networks, e.g. ~~integrated networks~~ *filters*

M H03H 7/00 **Multiple-port networks comprising only passive electrical elements as network components** ~~(receiver input circuits H04B 1/18; networks simulating a length of communication cable H04B 3/40)~~

U H03H 7/01 • Frequency selective two-port networks

M H03H 7/12 • • Bandpass or bandstop filters with adjustable bandwidth and fixed centre frequency ([H03H 7/09](#) takes precedence; ~~automatic control of bandwidth in amplifiers H03G 5/16~~)

M H03H 7/13 • • using electro-~~optic~~ *optical* elements

M H03H 7/46 • Networks for connecting several sources or loads, working on different frequencies or frequency bands, to a common load or source ~~(for use in multiplex transmission systems H04J 1/00)~~

M H03H 9/00 **Networks comprising electromechanical or electro-acoustic devices** *elements*; Electromechanical resonators (~~making single crystals C30B; selection of materials thereof H01L; electromechanical transducers H04R; electro-acoustic transducers such as loudspeakers, microphones or gramophone pick-ups H04R~~; piezoelectric, electrostrictive or magnetostrictive devices ~~per se with mechanical input or output, e.g. actuators or sensors, [H10N 30/00](#), [H10N 35/00](#)~~)

Project: MP12266 (H03H)

- M H03H 9/0023 • {~~Balance-unbalance~~*Networks for transforming balanced signals into unbalanced signals and or balance-balance networks vice versa, e.g. baluns, or networks having balanced input and output*}

Project: MP12364 (H03H)

- U H03H 9/02 • Details
- M H03H 9/05 • • Holders *or supports*; ~~Supports~~

Project: Unknown (H03H)

- U H03H 9/10 • • • Mounting in enclosures {(constructional combinations of enclosure with electromechanical and other electronic elements [H03H 9/0538](#))}
- U H03H 9/1064 • • • • {for surface acoustic wave [SAW] devices}
- M H03H 9/1085 • • • • • {the enclosure being defined by a non-uniform sealing mass covering the non-active sides of the ~~BAW~~*SAW* device}

Project: MP12364 (H03H)

- U H03H 9/125 • • Driving means, e.g. electrodes, coils
- M H03H 9/13 • • • for networks consisting of piezoelectric or electrostrictive materials (~~H03H 9/145 takes precedence~~*for networks using surface acoustic waves H03H 9/145*)
- U H03H 9/46 • Filters (multiple-port electromechanical filters [H03H 9/70](#))
- M H03H 9/54 • • comprising resonators of piezoelectric or electrostrictive material (~~H03H 9/64 takes precedence~~*comprising resonators using surface acoustic waves H03H 9/64*)
- U H03H 11/00 Networks using active elements**
- U H03H 11/02 • Multiple-port networks
- U H03H 11/04 • • Frequency selective two-port networks
- M H03H 11/14 • • • using electro-~~optic~~*optical* devices
- M H03H 11/26 • • Time-delay networks (~~analogue shift registers G11C 27/04~~)
- M H03H 11/34 • • Networks for connecting several sources or loads working on different frequencies or frequency bands, to a common load or source (~~for use in multiplex transmission systems H04J 1/00~~)
- U H03H 11/40 • • Impedance converters
- M H03H 11/44 • • • Negative impedance converters ([H03H 11/42](#) takes precedence; ~~used in frequency-selective networks H03H 11/10~~)

Project: MP12266 (H03J)

- U H03J 1/00 Details of adjusting, driving, indicating, or mechanical control arrangements for resonant circuits in general**
- NOTE**
Groups [H03J 1/14](#), [H03J 1/16](#) take precedence over groups [H03J 1/08](#) - [H03J 1/12](#).
{This Note corresponds to IPC Note (1) relating to [H03J 1/08](#) - [H03J 1/12](#).}
- U H03J 1/18 • Control by auxiliary power
- M H03J 1/187 • • {~~the auxiliary power balancing automatically a Wheatstone bridge or the like~~*automatic balancing of auxiliary power* that has been unbalanced by ~~the controlling device~~*a controlling device, e.g. a Wheatstone bridge*}

Project: MP12467 (H03K)

U	H03K 3/00	Circuits for generating electric pulses; Monostable, bistable or multistable circuits (H03K 4/00 takes precedence; for digital function generators in computers G06F 1/02)
U	H03K 3/02	• Generators characterised by the type of circuit or by the means used for producing pulses (H03K 3/64 - H03K 3/84 take precedence)
U	H03K 3/023	• • by the use of differential amplifiers or comparators, with internal or external positive feedback
U	H03K 3/0233	• • • Bistable circuits
M	H03K 3/02332	• • • • {of the master-slave <i>primary-secondary</i> type}
U	H03K 3/027	• • by the use of logic circuits, with internal or external positive feedback
U	H03K 3/037	• • • Bistable circuits
M	H03K 3/0372	• • • • {of the master-slave <i>primary-secondary</i> type}
U	H03K 3/26	• • by the use, as active elements, of bipolar transistors with internal or external positive feedback (H03K 3/023 , H03K 3/027 take precedence)
U	H03K 3/28	• • • using means other than a transformer for feedback
U	H03K 3/281	• • • • using at least two transistors so coupled that the input of one is derived from the output of another, e.g. multivibrator
U	H03K 3/286	• • • • • bistable
M	H03K 3/289	• • • • • of the master-slave <i>primary-secondary</i> type
U	H03K 3/353	• • by the use, as active elements, of field-effect transistors with internal or external positive feedback (H03K 3/023 , H03K 3/027 take precedence)
U	H03K 3/356	• • • Bistable circuits
M	H03K 3/3562	• • • • of the master-slave <i>primary-secondary</i> type

Project: Unknown (H03K)

U	H03K 5/00	Manipulating of pulses not covered by one of the other main groups of this subclass (circuits with regenerative action H03K 3/00, H03K 4/00; by the use of non-linear magnetic or dielectric devices H03K 3/45)
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NOTE

In this group, the input signals are of the pulse type.

U	H03K 2005/00013	• {Delay, i.e. output pulse is delayed after input pulse and pulse length of output pulse is dependent on pulse length of input pulse}
U	H03K 2005/00019	• • {Variable delay}
U	H03K 2005/00026	• • • {controlled by an analog electrical signal, e.g. obtained after conversion by a D/A converter}
M	H03K 2005/00032	• • • • { De <i>DC</i> control of switching transistors}
M	H03K 2005/00045	• • • • { De <i>DC</i> voltage control of a capacitor or of the coupling of a capacitor as a load}
M	H03K 5/003	• Changing the DC level (reinsertion of dc component of a television signal H04N 5/16 <i>reinsertion of DC component of a television signal</i> H04N 5/16)
U	H03K 17/00	Electronic switching or gating, i.e. not by contact-making and –breaking (gated amplifiers H03F 3/72; switching arrangements for exchange systems using static devices H04Q 3/52)
U	H03K 17/51	• characterised by the components used (H03K 17/04 - H03K 17/30 , H03K 17/94 take precedence)
U	H03K 17/56	• • by the use, as active elements, of semiconductor devices (using diodes H03K 17/74)

- U H03K 17/60
 - • • the devices being bipolar transistors (bipolar transistors having four or more electrodes [H03K 17/72](#))
- M H03K 17/68
 - • • specially adapted for switching **aeAC** currents or voltages
- U H03K 17/72
 - • • having more than two PN junctions; having more than three electrodes; having more than one electrode connected to the same conductivity region
- M H03K 17/725
 - • • for **aeAC** voltages or currents ([H03K 17/722](#), [H03K 17/735](#) take precedence)
- M H03K 17/73
 - • • for **deDC** voltages or currents ([H03K 17/722](#), [H03K 17/735](#) take precedence)

Project: Unknown (H03M)

- U H03M 1/00 **Analogue/digital conversion; Digital/analogue conversion (conversion of analogue values to or from differential modulation [H03M 3/00](#))**
- U H03M 1/10
 - Calibration or testing
- U H03M 1/1071
 - {Measuring or testing}
- M H03M 1/109
 - • • {for **deDC** performance, i.e. static testing ([H03M 1/1085](#) takes precedence)}
- M H03M 1/1095
 - • • {for **aeAC** performance, i.e. dynamic testing ([H03M 1/1085](#) takes precedence)}

Project: Unknown (H04B)

- U H04B 1/00 **Details of transmission systems, not covered by a single one of groups [H04B 3/00](#) - [H04B 13/00](#); Details of transmission systems not characterised by the medium used for transmission**

NOTE

In this group, group [H04B 1/0003](#) takes precedence over groups [H04B 1/005](#) - [H04B 1/76](#)

- U H04B 1/06
 - Receivers
- U H04B 1/16
 - Circuits
- U H04B 1/30
 - • • for homodyne or synchrodyne receivers (demodulator circuits [H03D 1/22](#))
- M H04B 2001/305
 - • • {using **deDC** offset compensation techniques}

Project: RP10469 (H04B)

- U H04B 1/38
 - Transceivers, i.e. devices in which transmitter and receiver form a structural unit and in which at least one part is used for functions of transmitting and receiving
- U H04B 1/3827
 - • Portable transceivers
- U H04B 1/385
 - • • {Transceivers carried on the body, e.g. in helmets}
- C H04B 2001/3855
 - • • {carried in a belt or harness}

WARNING

Group [H04B 2001/3855](#) is impacted by reclassification into group [A45F 5/1516](#).

Groups [H04B 2001/3855](#) and [A45F 5/1516](#) should be considered in order to perform a complete search.

- C H04B 2001/3861
 - • • {carried in a hand or on fingers}

WARNING

Group [H04B 2001/3861](#) is impacted by reclassification into group [A45F 5/1516](#).

Groups H04B 2001/3861 and A45F 5/1516 should be considered in order to perform a complete search.

C H04B 1/3888

- • Arrangements for carrying or protecting transceivers

WARNING

Group H04B 1/3888 is impacted by reclassification into groups A45C 11/002, A45C 11/003, G06F 1/1629 and H04M 1/0203. All groups listed in this Warning should be considered in order to perform a complete search.

Project: MP12248 (H04L)

U H04L 5/00

Arrangements affording multiple use of the transmission path

M H04L 5/0001

- {Arrangements for dividing the transmission path (~~duplexing H04L 5/14; multiplexing of different sources on one path H04J~~two-way operation using the same type of signal, i.e. duplex H04L 5/14)}

M H04L 5/0003

- • {Two-dimensional division (~~time-code division H04J 11/00, H04J 13/00; for time-space division H04B 7/0413, H04B 7/0697~~)}

U H04L 5/0005

- • • {Time-frequency}

M H04L 5/0007

- • • • {the frequencies being orthogonal, e.g. OFDM(A); or DMT}

M H04L 5/0012

- • • • {Hopping in multicarrier systems (~~for frequency hopping in spread spectrum systems H04B 1/713~~)}

M H04L 5/0014

- • {Three-dimensional division (~~time-code-space division H04B 7/0413, H04B 7/0697~~)}

M H04L 5/0026

- • {Division using four or more dimensions, e.g. beam steering or quasi-co-location [QCL]}

M H04L 5/0028

- • {Variable division (~~signaling therefor H04L 5/0092~~indication of the divided channel H04L 5/0092)}

U H04L 5/003

- {Arrangements for allocating sub-channels of the transmission path}

M H04L 5/0042

- • {~~intra~~Intra-user or intra-terminal allocation}

M H04L 5/0044

- • {~~allocation of payload~~Allocation of payload; Allocation of data channels, e.g. PDSCH or PUSCH}

M H04L 5/0046

- • • {Determination of ~~how many bits are~~the number of bits transmitted on different sub-channels}

M H04L 5/0048

- • {Allocation of pilot signals, i.e. of signals known to the receiver (~~allocation of control signalling H04L 5/0053; use of control signalling H04L 5/0091~~)}

M H04L 5/0053

- • {Allocation of ~~signaling~~signalling, i.e. of overhead other than pilot signals}

U H04L 5/0058

- • {Allocation criteria}

M H04L 5/0069

- • • {Allocation based on distance or geographical location (~~allocation based on terminal or device properties in general, H04W 72/51~~)}

M H04L 5/0073

- • • {Allocation arrangements that take into account other cell interferences (~~for intercell interference mitigation or co-ordination in orthogonal multiplex systems H04J 11/005~~)}

M H04L 5/0091

- {~~Signaling~~Signalling for the administration of the divided path, e.g. signalling of configuration information}

U H04L 5/02

- Channels characterised by the type of signal

M H04L 5/023

- • {Multiplexing of multicarrier modulation signals, e.g. multi-user orthogonal frequency division multiple access [OFDMA] (multicarrier modulation H04L 27/2601)}

M H04L 5/026

- • • {using code division (~~code allocation applied as frequency-domain sequences H04L 5/0021~~)}

- U H04L 5/14 · Two-way operation using the same type of signal, i.e. duplex
- M H04L 5/1407 · · {Artificial lines or their setting ~~(for line transmission systems in general H04B 3/40)}~~
- U H04L 5/22 · using time-division multiplexing
- U H04L 5/24 · · with start-stop synchronous converters
- M H04L 5/245 · · · {with a number of discharge tubes or semiconductor elements which successively connect the different channels to the transmission channels ~~(see: H04L 13/00 - H04L 23/00, H03K 5/15, H03K 17/62, H04J 3/047 details not particular to receiver or transmitter H04L 13/00; apparatus or local circuits for transmitting or receiving dot-and-dash codes H04L 15/00; apparatus or local circuits for transmitting or receiving codes wherein each character is represented by the same number of equal-length code elements H04L 17/00; apparatus or local circuits for step-by-step systems H04L 19/00; apparatus or local circuits for mosaic printer telegraph systems H04L 21/00; apparatus or local circuits for systems adapted for orthogonal signalling H04L 23/02)}~~

Project: Unknown (H04L)

- U H04L 25/00 Baseband systems**
- U H04L 25/02 · Details {; arrangements for supplying electrical power along data transmission lines (systems for transmitting signals via power distribution lines [H04B 3/54](#))}
- M H04L 25/06 · · ~~De~~DC level restoring means; Bias distortion correction {; Decision circuits providing symbol by symbol detection}
- M H04L 25/061 · · · {providing hard decisions only; arrangements for tracking or suppressing unwanted low frequency components, e.g. removal of ~~de~~DC offset ~~(removal of dc offset in coupling arrangements H04L 25/029, H04L 25/0296 removal of DC offset in coupling arrangements H04L 25/029, H04L 25/0296)~~}

Project: RP11978-F (H04L)

- U H04L 41/00 Arrangements for maintenance, administration or management of data switching networks, e.g. of packet switching networks**

WARNING

Group [H04L 41/00](#) is impacted by reclassification into groups [H04L 41/34](#), [H04L 41/342](#), [H04L 41/344](#) and [H04L 41/40](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- U H04L 41/06 · Management of faults, events, alarms or notifications
- U H04L 41/0654 · · using network fault recovery (ring fault isolation or reconfiguration in loop networks without recovery actions by a network management system [H04L 12/437](#))
- M H04L 41/0659 · · · by isolating or reconfiguring faulty entities

WARNING

Group [H04L 41/0659](#) is impacted by reclassification into group [H04L 41/0661](#).

Groups [H04L 41/0659](#) and [H04L 41/0661](#) should be considered in order to perform a complete search.

- M H04L 41/0661 · · · · {by reconfiguring faulty entities}

WARNING

Group [H04L 41/0661](#) is incomplete pending reclassification of documents from group [H04L 41/0659](#).

Groups H04L 41/0659 and H04L 41/0661 should be considered in order to perform a complete search.

Project: RP10469 (H04M)

- U H04M 1/00** Substation equipment, e.g. for use by subscribers (subscriber services or facilities provided at exchanges [H04M 3/00](#); prepayment telephone coin boxes [H04M 17/00](#); current supply arrangements [H04M 19/08](#))
- U H04M 1/02** • Constructional features of telephone sets
- U H04M 1/0202** • • {Portable telephone sets, e.g. cordless phones, mobile phones or bar type handsets (constructional features of telephone transmitters or receivers, e.g. of speakers or microphones [H04M 1/03](#))}
- N H04M 1/0203** • • • {Protective covers or auxiliary enclosures for portable telephones (for storing [A45C 11/002](#))}
- WARNING
Group [H04M 1/0203](#) is incomplete pending reclassification of documents from groups [A45C 11/00](#), [A45C 11/001](#), [A45C 11/002](#), [G06F 2200/1633](#), [H04B 1/3888](#), [H04M 1/18](#) and [H04M 1/185](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- C H04M 1/18** • • Telephone sets specially adapted for use in ships, mines, or other places exposed to adverse environment ([H04M 1/19](#) takes precedence)
- WARNING
Group [H04M 1/18](#) is incomplete pending reclassification of documents from group [H04M 1/185](#).
Group [H04M 1/18](#) is also impacted by reclassification into group [H04M 1/0203](#).
Groups [H04M 1/18](#), [H04M 1/185](#) and [H04M 1/0203](#) should be considered in order to perform a complete search.
- C H04M 1/185** • • • {Improving the ~~rigidity of the casing or resistance to shocks~~ shock resistance of the housing, e.g. by increasing the rigidity}
- WARNING
Group [H04M 1/185](#) is impacted by reclassification into groups [H04M 1/0203](#) and [H04M 1/18](#).
Groups [H04M 1/185](#), [H04M 1/0203](#) and [H04M 1/18](#) should be considered in order to perform a complete search.

Project: Unknown (H04M)

- U H04M 1/26** • Devices for calling a subscriber ([H04M 1/66](#) takes precedence)
- M H04M 1/515** • • by generating or selecting signals other than trains of pulses of similar shape, or signals other than currents of one or more different frequencies, e.g. generation of ~~de~~DC signals of alternating polarity, coded pulses or impedance dialling

Project: RP12333 (H04N)

H04N

PICTORIAL COMMUNICATION, e.g. TELEVISION

NOTES

1. This subclass covers :
 - transmission of pictures or their transient or permanent reproduction either locally or remotely {and the corresponding electronic image capture and

reproduction process employing image representative electric signals}, by methods involving both of {or at least one of} the following steps:

- a. the {electronic acquisition or} scanning of a picture {or scene}, i.e. resolving the whole picture-containing area into individual picture-elements and the derivation of picture-representative electric signals related thereto, simultaneously or in sequence {, e.g. by reading an electronic solid-state image sensor [SSIS] pickup device, e.g. CCD or CMOS image sensor, as electronic image sensor converting optical image information into said electrical signals};
 - b. the reproduction of the whole picture-containing area {or scene} by the reproduction of individual picture -elements into which the picture is resolved by means of picture -representative electric signals derived therefrom, simultaneously or in sequence;
- in group [H04N 1/00](#), systems for the transmission or the reproduction of arbitrarily composed pictures or patterns in which the local light variations composing a picture are not subject to variation with time, e.g. documents, maps, charts, photographs other than cinematograph films;
 - circuits specially designed for dealing with pictorial communication signals, e.g. television signals, as distinct from merely signals of a particular frequency range.

2. This subclass does not cover:

- circuits or other parts of systems which form the subject of other subclasses, which are covered by the corresponding subclasses, e.g. [H03C](#), [H03F](#), [H03J](#), [H04B](#), [H04H](#);
- systems in which legible alphanumeric or like character forms are analysed according to step (a) of Note (1) to derive an electric signal from which the character is recognised by comparison with stored information, which are covered by subclass [G06K](#);
- systems for the direct photographic copying of an original picture in which an electric signal representative of the picture is derived according to the said step (a) and employed to modify the operation of the system, e.g. to control exposure, which are covered by class [G03](#);
- systems for the reproduction according to step (b) of Note (1) of pictures comprising alphanumeric or like character forms but involving the production of the equivalent of a signal which would be derived according to the above-mentioned step (a), e.g. by cams, punched card or tape, coded control signal, or other means, which are covered by the subclass for the application, e.g. [G01D](#), [G06T](#), [H04L](#);
- systems for the reproduction according to the above-mentioned step (b) of pictures comprising alphanumeric or like character forms and involving the generation according to the above-mentioned step (a) of picture-representative electric signals from a pre-arranged assembly of such characters, or records thereof, forming an integral part of the systems, which are covered by the subclass for the application, e.g. [B41B](#), [G06K](#), subject to those applications which are covered by this subclass;
- printing, duplication or marking processes, or materials or processes therefor, which are covered by the relevant subclasses, e.g. [B41C](#), [B41J](#), [B41M](#), [G03C](#), [G03F](#), [G03G](#);
- {apparatus or methods for taking photographs using light sensitive film for image capture, apparatus/methods for printing, for projecting or viewing images using film stock, photographic film or slides by optical means, e.g. mounting of optical elements, flashes, and their related controls, e.g. exposure, focus, (opto-)mechanical motion blur (anti-shake), cooling, beam shaping;}
- {aspects of apparatus or methods for taking photographs using an electronic image sensor [EIS] for image capture, insofar as they correspond to those of said apparatus methods for taking photographs using light sensitive film, i.e. insofar as not peculiar to the presence of the EIS, e.g. mounting of optical elements or flashes not peculiar to

- the presence of the EIS, and their related controls insofar as they are not peculiar to the presence or use of the EIS, e.g. exposure, focus, (opto-)mechanical motion blur (anti-shake);}
- {aspects of apparatus or methods for projecting or viewing images using an electronic spatial light modulator [ESLM], insofar as they correspond to those of said apparatus/ methods for projecting or viewing images using film stock, photographic film or slides, i.e. insofar as not peculiar to the presence of the ESLM, e.g. mounting of optical elements not peculiar to the presence of the ESLM, and their related controls not peculiar to the presence of the ESLM, e.g. cooling, beam shaping, optical keystone correction;}
 - ~~{{(opto-)mechanical image enhancement in printers or projectors, e.g. keystone correction;}}~~
 - {optical viewfinders;}
 - {remote control of cameras and projectors insofar not peculiar to the EIS or ESLM, e.g. not affecting their operation, or being based on a generated image signal;}
 - {-optical aspects of camera modules using electronic image sensors and related constructional details (optical elements or arrangements associated with solid state imager structures ~~H01L 27/14625~~ ~~H10F 39/806~~);-}
 - {constructional aspects of projectors, e.g. cooling, beam shaping, light integrating means not peculiar to the ESLM;}
3. In this subclass, the following expression is used with the meaning indicated:
- "television systems" means those systems for the {electronic generation,} transmission and reproduction of arbitrarily composed pictures in which the local light variations composing a picture may change with time, e.g. natural "live" scenes, {electronic} recordings of such scenes such as cinematograph films.
4. {In this subclass, as in subclass [G03B](#), the following terms are used with the meaning indicated:
- "camera": a device capturing image information represented by light patterns reflected or emitted from objects, and exposing a light sensitive film or a main electronic image sensor during a timed exposure, usually through a photographic lens, and producing an image on a light sensitive film or an electrical image information signal respectively;
 - "projector": a device displaying image information by projection of light patterns, usually through an optical lens, wherein the light patterns are generated by illuminating an image, e.g. film or slide, or by converting an electric image signal into an optical signal using an electronic spatial light modulator;
 - "electronic image sensor [EIS]": optoelectronic transducer, converting optical image information into an electrical signal susceptible of being processed, stored, transmitted or displayed;
 - "additional sensor": a sensor, other than the main electronic image sensor, used for controlling a camera;
 - "electronic spatial light modulator [ESLM]": optoelectronic transducer converting electric signals representing image information into optical image information.
- }

WARNINGS

1. The following IPC groups are not in the CPC scheme. ~~Subject~~*The subject* matter for these IPC groups is classified in the following CPC groups:-

H04N 5/761	covered by	H04N 5/782
H04N 5/7613	covered by	H04N 5/782
H04N 5/7617	covered by	H04N 5/782
H04N 5/922	covered by	H04N 5/92
H04N 5/924	covered by	H04N 5/92

[H04N 9/815](#)

covered by

[H04N 9/81](#)

2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

Project: Unknown (H04N)

U	H04N 3/00	Scanning details of television systems; Combination thereof with generation of supply voltages
U	H04N 3/10	• by means not exclusively optical-mechanical (H04N 3/36 takes precedence)
U	H04N 3/16	• • by deflecting electron beam in cathode-ray tube {, e.g. scanning corrections}
U	H04N 3/18	• • • Generation of supply voltages, in combination with electron beam deflecting
M	H04N 3/185	• • • • Maintaining deDC voltage constant
U	H04N 5/00	Details of television systems (scanning details or combination thereof with generation of supply voltages H04N 3/00)
U	H04N 5/14	• Picture signal circuitry for video frequency region (cameras or camera modules comprising electronic image sensors, or control thereof H04N 23/00)
M	H04N 5/16	• • Circuitry for reinsertion of deDC and slowly varying components of signal; Circuitry for preservation of black or white level

Project: Unknown (H04Q)

U	H04Q 1/00	Details of selecting apparatus or arrangements
U	H04Q 1/18	• Electrical details
U	H04Q 1/30	• • Signalling arrangements; Manipulation of signalling currents (multiplex systems providing for calling or supervisory signals H04J 1/14 , H04J 3/12)
M	H04Q 1/32	• • • using trains of deDC pulses (H04Q 1/39 takes precedence)
U	H04Q 5/00	Selecting arrangements wherein two or more subscriber stations are connected by the same line to the exchange
U	H04Q 5/02	• with direct connection for all subscribers, i.e. party-line systems (H04Q 5/24 takes precedence)
M	H04Q 5/06	• • Signalling by amplitude or polarity of deDC
M	H04Q 5/08	• • Signalling by continuous aeAC
U	H04Q 9/00	Arrangements in telecontrol or telemetry systems for selectively calling a substation from a main station, in which substation desired apparatus is selected for applying a control signal thereto or for obtaining measured values therefrom
M	H04Q 9/06	• Calling by using amplitude or polarity of deDC
M	H04Q 9/08	• Calling by using continuous aeAC

Project: RP11757-F (H04W)

U	H04W 28/00	Network traffic management; Network resource management
U	H04W 28/02	• Traffic management, e.g. flow control or congestion control
M	H04W 28/0289	• • {Congestion control (load shedding arrangements in network planning H04W 16/08 ; performing reselection for handling the traffic H04W 36/22 ; wireless traffic scheduling H04W 72/12)}

WARNING

Group H04W 28/0289 is impacted by reclassification into group H04W 28/084.

Groups H04W 28/0289 and H04W 28/084 should be considered in order to perform a complete search.

- M H04W 28/08
- Load balancing or load distribution (transferring a connection for handling the traffic [H04W 36/22](#); wireless traffic scheduling [H04W 72/12](#))

WARNING

Group H04W 28/08 is impacted by reclassification into groups H04W 28/084, H04W 36/22, and H04W 72/12.
All groups listed in this Warning should be considered in order to perform a complete search.

- M H04W 28/084
- among network function virtualisation [NFV] entities; among edge computing entities, e.g. multi-access edge computing

WARNING

Group H04W 28/084 is incomplete pending reclassification of documents from groups H04W 28/0289 and H04W 28/08.
Groups H04W 28/0289, H04W 28/08 and H04W 28/084 should be considered in order to perform a complete search.

Project: RP11668-F (H04W)

- U H04W 36/00 Hand-off or reselection arrangements

NOTE

In this group, local priority rules supersede the first-place priority rule (FPPR) applying throughout [H04W](#)

- U H04W 36/0005
- {Control or signalling for completing the hand-off}
- M H04W 36/0011
- {for data sessions of end-to-end connection}

WARNING

Group H04W 36/0011 is impacted by reclassification into group H04W 36/0019.
Groups H04W 36/0011 and H04W 36/0019 should be considered in order to perform a complete search.

- M H04W 36/0019
- {adapted for mobile IP [MIP]}

WARNING

Group H04W 36/0019 is incomplete pending reclassification of documents from group H04W 36/0011.
Groups H04W 36/0011 and H04W 36/0019 should be considered in order to perform a complete search.

- M H04W 36/0022
- {for transferring data sessions between adjacent core network technologies}

WARNING

Group H04W 36/0022 is impacted by reclassification into groups H04W 36/00222, H04W 36/00224 and H04W 36/00226.
All groups listed in this Warning should be considered in order to perform a complete search.

- M H04W 36/00222
- {between different packet switched [PS] network technologies, e.g. transferring data sessions between LTE and WLAN or LTE and 5G}

WARNING

Group H04W 36/00222 is incomplete pending reclassification of documents from group H04W 36/0022.

		<p>Groups H04W 36/0022 and H04W 36/00222 should be considered in order to perform a complete search.</p>
M	H04W 36/00224	<ul style="list-style-type: none">• • • {between packet switched [PS] and circuit switched [CS] network technologies, e.g. circuit switched fallback [CSFB]} <p><u>WARNING</u></p> <p>Groups H04W 36/00224 and H04W 36/00226 are incomplete pending reclassification of documents from group H04W 36/0022.</p> <p>Groups H04W 36/0022, H04W 36/00224 and H04W 36/00226 should be considered in order to perform a complete search.</p>
M	H04W 36/0055	<ul style="list-style-type: none">• • {Transmission or use of information for re-establishing the radio link} <p><u>WARNING</u></p> <p>Group H04W 36/0055 is impacted by reclassification into groups H04W 36/0064 and H04W 36/13.</p> <p>Groups H04W 36/0055, H04W 36/0064 and H04W 36/13 should be considered in order to perform a complete search.</p>
M	H04W 36/0064	<ul style="list-style-type: none">• • • {of control information between different access points} <p><u>WARNING</u></p> <p>Group H04W 36/0064 is incomplete pending reclassification of documents from group H04W 36/0055.</p> <p>Groups H04W 36/0055 and H04W 36/0064 should be considered in order to perform a complete search.</p>
M	H04W 36/0069	<ul style="list-style-type: none">• • • {in case of dual connectivity, e.g. decoupled uplink/downlink} <p><u>WARNING</u></p> <p>Group H04W 36/0069 is incomplete pending reclassification of documents from groups H04W 36/18 and H04W 36/28.</p> <p>Group H04W 36/0069 is also impacted by reclassification into groups H04W 36/00692, H04W 36/00695 and H04W 36/00698.</p> <p>All groups listed in this Warning should be considered in order to perform a complete search.</p>
M	H04W 36/00692	<ul style="list-style-type: none">• • • • {using simultaneous multiple data streams, e.g. cooperative multipoint [CoMP], carrier aggregation [CA] or multiple input multiple output [MIMO] (allocation of physical resources in CoMP or in CA H04L 5/0035)} <p><u>WARNING</u></p> <p>Group H04W 36/00692 is incomplete pending reclassification of documents from groups H04W 36/0069, H04W 36/18 and H04W 36/28.</p> <p>All groups listed in this Warning should be considered in order to perform a complete search.</p>
M	H04W 36/00695	<ul style="list-style-type: none">• • • • {using split of the control plane or user plane} <p><u>WARNING</u></p> <p>Group H04W 36/00695 is incomplete pending reclassification of documents from groups H04W 36/0069, H04W 36/18 and H04W 36/28.</p> <p>All groups listed in this Warning should be considered in order to perform a complete search.</p>
M	H04W 36/00698	<ul style="list-style-type: none">• • • • {using different RATs} <p><u>WARNING</u></p> <p>Group H04W 36/00698 is incomplete pending reclassification of documents from groups H04W 36/0069, H04W 36/18 and H04W 36/28.</p>

All groups listed in this Warning should be considered in order to perform a complete search.

- M H04W 36/0072 • • • {of resource information of target access point}

WARNING

Group H04W 36/0072 is impacted by reclassification into groups H04W 36/00725 and H04W 36/249.
Groups H04W 36/0072, H04W 36/00725 and H04W 36/249 should be considered in order to perform a complete search.

- M H04W 36/00725 • • • • {Random access channel [RACH]-less handover}

WARNING

Group H04W 36/00725 is incomplete pending reclassification of documents from group H04W 36/0072.
Groups H04W 36/0072 and H04W 36/00725 should be considered in order to perform a complete search.

- M H04W 36/0083 • • {Determination of parameters used for hand-off, e.g. generation or modification of neighbour cell lists}

WARNING

Group H04W 36/0083 is impacted by reclassification into groups H04W 36/00833 and H04W 36/00838.
Groups H04W 36/0083, H04W 36/00833 and H04W 36/00838 should be considered in order to perform a complete search.

- M H04W 36/00833 • • • {Handover statistics}

WARNING

Group H04W 36/00833 is incomplete pending reclassification of documents from group H04W 36/0083.
Groups H04W 36/0083 and H04W 36/00833 should be considered in order to perform a complete search.

- M H04W 36/00835 • • • {Determination of neighbour cell lists}

WARNING

Group H04W 36/00835 is impacted by reclassification into groups H04W 36/008355, H04W 36/008357 and H04W 36/00838.
All groups listed in this Warning should be considered in order to perform a complete search.

- M H04W 36/008355 • • • • {Determination of target cell based on user equipment [UE] properties, e.g. UE service capabilities}

WARNING

Group H04W 36/008355 is incomplete pending reclassification of documents from group H04W 36/00835.
Groups H04W 36/00835 and H04W 36/008355 should be considered in order to perform a complete search.

- M H04W 36/008357 • • • • {Determination of target cell based on access point [AP] properties, e.g. AP service capabilities}

WARNING

Group H04W 36/008357 is incomplete pending reclassification of documents from group H04W 36/00835.
Groups H04W 36/00835 and H04W 36/008357 should be considered in order to perform a complete search.

M	H04W 36/00837	<ul style="list-style-type: none"> • • • {Determination of triggering parameters for hand-off} <p><u>WARNING</u> Group H04W 36/00837 is impacted by reclassification into groups H04W 36/008375 and H04W 36/00838. Groups H04W 36/00837, H04W 36/008375 and H04W 36/00838 should be considered in order to perform a complete search.</p>
M	H04W 36/008375	<ul style="list-style-type: none"> • • • • {based on historical data} <p><u>WARNING</u> Group H04W 36/008375 is incomplete pending reclassification of documents from group H04W 36/00837. Groups H04W 36/00837 and H04W 36/008375 should be considered in order to perform a complete search.</p>
M	H04W 36/00838	<ul style="list-style-type: none"> • • • {Resource reservation for handover} <p><u>WARNING</u> Group H04W 36/00838 is incomplete pending reclassification of documents from groups H04W 36/0083, H04W 36/00835 and H04W 36/00837. All groups listed in this Warning should be considered in order to perform a complete search.</p>
U	H04W 36/02	<ul style="list-style-type: none"> • Buffering or recovering information during reselection {; Modification of the traffic flow during hand-off}
M	H04W 36/023	<ul style="list-style-type: none"> • • {Buffering or recovering information during reselection} <p><u>WARNING</u> Group H04W 36/023 is impacted by reclassification into group H04W 36/0235. Groups H04W 36/023 and H04W 36/0235 should be considered in order to perform a complete search.</p>
M	H04W 36/0235	<ul style="list-style-type: none"> • • • {by transmitting sequence numbers, e.g. SN status transfer} <p><u>WARNING</u> Group H04W 36/0235 is incomplete pending reclassification of documents from group H04W 36/023. Groups H04W 36/023 and H04W 36/0235 should be considered in order to perform a complete search.</p>
M	H04W 36/03	<ul style="list-style-type: none"> • {Reselecting a link using a direct mode connection} <p><u>WARNING</u> Group H04W 36/03 is impacted by reclassification into groups H04W 36/033, H04W 36/035 and H04W 36/037. All groups listed in this Warning should be considered in order to perform a complete search.</p>
M	H04W 36/033	<ul style="list-style-type: none"> • • {in pre-organised networks} <p><u>WARNING</u> Group H04W 36/033 is incomplete pending reclassification of documents from group H04W 36/03. Groups H04W 36/03 and H04W 36/033 should be considered in order to perform a complete search.</p>

M	H04W 36/035	<ul style="list-style-type: none"> • {in self-organising networks} <p><u>WARNING</u> Group H04W 36/035 is incomplete pending reclassification of documents from group H04W 36/03. Groups H04W 36/03 and H04W 36/035 should be considered in order to perform a complete search.</p>
M	H04W 36/037	<ul style="list-style-type: none"> • {by reducing handover delay, e.g. latency} <p><u>WARNING</u> Group H04W 36/037 is incomplete pending reclassification of documents from group H04W 36/03. Groups H04W 36/03 and H04W 36/037 should be considered in order to perform a complete search.</p>
M	H04W 36/08	<ul style="list-style-type: none"> • Reselecting an access point <p><u>WARNING</u> Group H04W 36/08 is impacted by reclassification into groups H04W 36/083, H04W 36/085, H04W 36/087 and H04W 36/13. All groups listed in this Warning should be considered in order to perform a complete search.</p>
M	H04W 36/083	<ul style="list-style-type: none"> • {wherein at least one of the access points is a moving node} <p><u>WARNING</u> Group H04W 36/083 is incomplete pending reclassification of documents from group H04W 36/08. Groups H04W 36/08 and H04W 36/083 should be considered in order to perform a complete search.</p>
M	H04W 36/085	<ul style="list-style-type: none"> • {involving beams of access points} <p><u>WARNING</u> Group H04W 36/085 is incomplete pending reclassification of documents from group H04W 36/08. Groups H04W 36/08 and H04W 36/085 should be considered in order to perform a complete search.</p>
M	H04W 36/087	<ul style="list-style-type: none"> • {between radio units of access points} <p><u>WARNING</u> Group H04W 36/087 is incomplete pending reclassification of documents from group H04W 36/08. Groups H04W 36/08 and H04W 36/087 should be considered in order to perform a complete search.</p>
U	H04W 36/12	<ul style="list-style-type: none"> • Reselecting a serving backbone network switching or routing node
M	H04W 36/125	<ul style="list-style-type: none"> • {involving different types of service backbones} <p><u>WARNING</u> Group H04W 36/125 is impacted by reclassification into group H04W 36/13. Groups H04W 36/125 and H04W 36/13 should be considered in order to perform a complete search.</p>
M	H04W 36/13	<ul style="list-style-type: none"> • {Cell handover without a predetermined boundary, e.g. virtual cells} <p><u>WARNING</u> Group H04W 36/13 is incomplete pending reclassification of documents from groups H04W 36/0055, H04W 36/08, H04W 36/125 and H04W 36/14.</p>

All groups listed in this Warning should be considered in order to perform a complete search.

- M H04W 36/14
- Reselecting a network or an air interface

WARNING

Group H04W 36/14 is impacted by reclassification into groups H04W 36/142, H04W 36/144, H04W 36/1443, H04W 36/1446 and H04W 36/13. All groups listed in this Warning should be considered in order to perform a complete search.

- M H04W 36/142
- {over the same radio air interface technology}

WARNING

Group H04W 36/142 is incomplete pending reclassification of documents from group H04W 36/14. Groups H04W 36/14 and H04W 36/142 should be considered in order to perform a complete search.

- M H04W 36/144
- {over a different radio air interface technology}

WARNING

Groups H04W 36/144, H04W 36/1443 and H04W 36/1446 are incomplete pending reclassification of documents from group H04W 36/14. All groups listed in this Warning should be considered in order to perform a complete search.

- U H04W 36/16
- Performing reselection for specific purposes

- M H04W 36/165
- {for reducing network power consumption ([H04W 36/18](#) - [H04W 36/22](#) take precedence)}

WARNING

Group H04W 36/165 is impacted by reclassification into group H04W 36/247. Groups H04W 36/165 and H04W 36/247 should be considered in order to perform a complete search.

- M H04W 36/18
- for allowing seamless reselection, e.g. soft reselection

WARNING

Group H04W 36/18 is impacted by reclassification into groups H04W 36/185, H04W 36/0069, H04W 36/00692, H04W 36/00695 and H04W 36/00698. All groups listed in this Warning should be considered in order to perform a complete search.

- M H04W 36/185
- {using make before break}

WARNING

Group H04W 36/185 is incomplete pending reclassification of documents from group H04W 36/18. Groups H04W 36/18 and H04W 36/185 should be considered in order to perform a complete search.

Project: RP11757-F (H04W)

- M H04W 36/22
- for handling the traffic

WARNING

Group H04W 36/22 is incomplete pending reclassification of documents from group H04W 28/08. Groups H04W 28/08 and H04W 36/22 should be considered in order to perform a complete search.

Project: RP11668-F (H04W)

M	H04W 36/24	<ul style="list-style-type: none"> • Reselection being triggered by specific parameters <p><u>WARNING</u> Group H04W 36/24 is impacted by reclassification into groups H04W 36/247 and H04W 36/249. Groups H04W 36/24, H04W 36/247 and H04W 36/249 should be considered in order to perform a complete search.</p>
M	H04W 36/247	<ul style="list-style-type: none"> • {by using coverage extension} <p><u>WARNING</u> Group H04W 36/247 is incomplete pending reclassification of documents from groups H04W 36/165 and H04W 36/24. Groups H04W 36/165, H04W 36/24 and H04W 36/247 should be considered in order to perform a complete search.</p>
M	H04W 36/249	<ul style="list-style-type: none"> • {according to timing information} <p><u>WARNING</u> Group H04W 36/249 is incomplete pending reclassification of documents from groups H04W 36/0072 and H04W 36/24. Groups H04W 36/0072, H04W 36/24 and H04W 36/249 should be considered in order to perform a complete search.</p>
U	H04W 36/26	<ul style="list-style-type: none"> • by agreed or negotiated communication parameters
M	H04W 36/28	<ul style="list-style-type: none"> • • involving a plurality of connections, e.g. multi-call or multi-bearer connections <p><u>WARNING</u> Group H04W 36/28 is impacted by reclassification into groups H04W 36/0069, H04W 36/00692, H04W 36/00695 and H04W 36/00698. All groups listed in this Warning should be considered in order to perform a complete search.</p>
M	H04W 36/30	<ul style="list-style-type: none"> • • by measured or perceived connection quality data <p><u>WARNING</u> Group H04W 36/30 is impacted by reclassification into groups H04W 36/302 and H04W 36/304. Groups H04W 36/30, H04W 36/302 and H04W 36/304 should be considered in order to perform a complete search.</p>
M	H04W 36/302	<ul style="list-style-type: none"> • • • {due to low signal strength} <p><u>WARNING</u> Group H04W 36/302 is incomplete pending reclassification of documents from group H04W 36/30. Groups H04W 36/30 and H04W 36/302 should be considered in order to perform a complete search.</p>
M	H04W 36/304	<ul style="list-style-type: none"> • • • {due to measured or perceived resources with higher communication quality} <p><u>WARNING</u> Group H04W 36/304 is incomplete pending reclassification of documents from group H04W 36/30. Groups H04W 36/30 and H04W 36/304 should be considered in order to perform a complete search.</p>

M	H04W 36/32	<ul style="list-style-type: none"> • by location or mobility data, e.g. speed data <p><u>WARNING</u> Group H04W 36/32 is impacted by reclassification into groups H04W 36/322, H04W 36/324, H04W 36/326 and H04W 36/328. All groups listed in this Warning should be considered in order to perform a complete search.</p>
M	H04W 36/322	<ul style="list-style-type: none"> • • {by location data} <p><u>WARNING</u> Group H04W 36/322 is incomplete pending reclassification of documents from group H04W 36/32. Groups H04W 36/32 and H04W 36/322 should be considered in order to perform a complete search.</p>
M	H04W 36/324	<ul style="list-style-type: none"> • • {by mobility data, e.g. speed data} <p><u>WARNING</u> Group H04W 36/324 is incomplete pending reclassification of documents from group H04W 36/32. Groups H04W 36/32 and H04W 36/324 should be considered in order to perform a complete search.</p>
M	H04W 36/326	<ul style="list-style-type: none"> • • {by proximity to another entity} <p><u>WARNING</u> Group H04W 36/326 is incomplete pending reclassification of documents from group H04W 36/32. Groups H04W 36/32 and H04W 36/326 should be considered in order to perform a complete search.</p>
M	H04W 36/328	<ul style="list-style-type: none"> • • {by altitude} <p><u>WARNING</u> Group H04W 36/328 is incomplete pending reclassification of documents from group H04W 36/32. Groups H04W 36/32 and H04W 36/328 should be considered in order to perform a complete search.</p>
U	H04W 36/34	<ul style="list-style-type: none"> • Reselection control
M	H04W 36/36	<ul style="list-style-type: none"> • by user or terminal equipment <p><u>WARNING</u> Group H04W 36/36 is impacted by reclassification into group H04W 36/362. Groups H04W 36/36 and H04W 36/362 should be considered in order to perform a complete search.</p>
M	H04W 36/362	<ul style="list-style-type: none"> • • {Conditional handover} <p><u>WARNING</u> Group H04W 36/362 is incomplete pending reclassification of documents from group H04W 36/36. Groups H04W 36/36 and H04W 36/362 should be considered in order to perform a complete search.</p>

Project: MP12109 (H04W)

M	H04W 52/00	Power management {, e.g. TPC [Transmission Power Control], power saving [TPC] or power classes- {(gain control in transmitters or power amplifiers H03G 3/3042)} }
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- M H04W 52/02
 - Power saving arrangements ~~{(in wired systems H04L 12/12; signaling of mobile application services, e.g. low battery notifications H04W 4/20)}~~
- U H04W 52/0203
 - {in the radio access network or backbone network of wireless communication networks}
- M H04W 52/0206
 - • {in access points, e.g. base stations ~~{access point devices per se H04W 88/08}~~}
- M H04W 52/0209
 - {in terminal devices ~~{terminal devices per se H04W 88/02}~~}

Project: MP12467 (H04W)

- M H04W 52/0212
 - • {managed by the network, e.g. network or access point is ~~master~~leader and terminal is ~~slave~~follower}

Project: MP12109 (H04W)

- U H04W 52/0225
 - • {using monitoring of external events, e.g. the presence of a signal}
- U H04W 52/0229
 - • {where the received signal is a wanted signal}
- U H04W 52/0232
 - • {according to average transmission signal activity}
- M H04W 52/0235
 - • {where the received signal is a power saving command}
- M H04W 52/04
 - ~~TPC~~Transmission power control [TPC]
- U H04W 52/18
 - TPC being performed according to specific parameters
- U H04W 52/22
 - • taking into account previous information or commands
- M H04W 52/225
 - • {Calculation of statistics, e.g. average, ~~or~~ variance}
- U H04W 52/24
 - • using SIR [Signal to Interference Ratio] or other wireless path parameters
- M H04W 52/241
 - • {taking into account channel quality metrics, e.g. SIR, SNR, CIR, ~~or~~ Eb/lo}
- U H04W 52/26
 - • using transmission rate or quality of service QoS [Quality of Service]
- M H04W 52/262
 - • {taking into account adaptive modulation and coding [AMC] scheme ~~{AMC per se H04L 1/0001}~~}
- M H04W 52/28
 - • using user profile, e.g. mobile speed, priority or network state, e.g. standby, idle or non-transmission
- M H04W 52/288
 - • {taking into account the usage mode, e.g. hands-free, data transmission, ~~or~~ telephone}
- U H04W 52/38
 - TPC being performed in particular situations
- M H04W 52/46
 - • in multi-hop networks, e.g. wireless relay networks

Project: RP11757-F (H04W)

- U H04W 72/00 **Local resource management**
- M H04W 72/12
 - Wireless traffic scheduling

WARNING

Group H04W 72/12 is incomplete pending reclassification of documents from group H04W 28/08.

Group H04W 72/12 is also impacted by reclassification into groups H04W 72/40, H04W 72/50, H04W 72/51, and H04W 72/512.

All groups listed in this Warning should be considered in order to perform a complete search.

Group H04W 72/12 is impacted by reclassification into groups H04W 72/40, H04W 72/50, H04W 72/51 and H04W 72/512.

All groups listed in this Warning should be considered in order to perform a complete search.

Project: MP12467 (H04W)**U H04W 84/00 Network topologies**NOTE

In this group, local priority rules supersede the first-place priority rule (FPPR) applying throughout [H04W](#)

- U H04W 84/18 • Self-organising networks, e.g. ad-hoc networks or sensor networks
- M H04W 84/20 • • ~~Master-slave {selection or change}~~ *Leader-follower* arrangements

Project: Unknown (H05B)**U H05B 31/00 Electric arc lamps (regulating electric characteristics of arcs [G05F 1/02](#))**

- U H05B 31/36 • having two electrodes in line {(electrodes in the open [H05B 31/0006](#))}
- M H05B 31/38 • • specially adapted for *aeAC*
- U H05B 31/40 • having two electrodes at an angle {(electrodes in the open [H05B 31/0009](#))}
- M H05B 31/42 • • specially adapted for *aeAC*
- U H05B 31/44 • having two parallel electrodes {(electrodes in the open [H05B 31/0009](#))}
- M H05B 31/46 • • specially adapted for *aeAC*
- U H05B 31/48 • having more than two electrodes {(electrodes in the open [H05B 31/0012](#))}
- M H05B 31/50 • • specially adapted for *aeAC*

U H05B 41/00 Circuit arrangements or apparatus for igniting or operating discharge lamps (structurally associated with the discharge lamps [H01J 61/54](#), [H01J 61/56](#))

- U H05B 41/14 • Circuit arrangements
- M H05B 41/16 • • in which the lamp is fed by *deDC* or by low-frequency *aeAC*, e.g. by 50 cycles/sec *ae*, {*AC* }, or with network frequencies}
- M H05B 41/24 • • in which the lamp is fed by high frequency *ae*, {*AC* }, or with separate oscillator frequency} ([H05B 41/26](#) takes precedence)
- M H05B 41/26 • • in which the lamp is fed by power derived from *deDC* by means of a converter, e.g. by high-voltage *deDC*

Project: Unknown (H05C)**U H05C 1/00 Circuits or apparatus for generating electric shock effects**

- M H05C 1/02 • providing continuous feeding of ~~*de*~~ or *aeDC* or *AC* voltage

Project: Unknown (H05G)**U H05G 1/00 X-ray apparatus involving X-ray tubes; Circuits therefor**

- U H05G 1/08 • Electrical details
- U H05G 1/10 • • Power supply arrangements for feeding the X-ray tube {(supply circuits with converters in general [H02M](#); supply circuits for emitters and amplifiers [H04B 1/16](#) - [H04B 1/1623](#))}
- M H05G 1/12 • • • with *deDC* or rectified single-phase *aeAC* {or double-phase}
- M H05G 1/14 • • • with single-phase low-frequency *aeAC* {also when a *rectifier* *rectifier* element is in series with the X-ray tube}
- M H05G 1/18 • • • with polyphase *aeAC* of low frequency {rectified}
- M H05G 1/20 • • • with high-frequency *aeAC*; with pulse trains {(pulse generators in general [H03K 3/00](#), [H03K 4/00](#))}

Project: MP12365 (H05H)

M	H05H	<p>PLASMA TECHNIQUE (fusion reactors G21B; ion-beam tubes H01J 27/00; magnetohydrodynamic generators H02K 44/08; producing X-rays involving plasma generation H05G 2/00 <i>apparatus or processes specially adapted for producing X-rays H05G 2/00</i>); PRODUCTION OF ACCELERATED ELECTRICALLY-CHARGED PARTICLES OR OF NEUTRONS (obtaining neutrons from radioactive sources G21, e.g. G21B, G21C, G21G); PRODUCTION OR ACCELERATION OF NEUTRAL MOLECULAR OR ATOMIC BEAMS (atomic clocks G04F 5/14; devices using stimulated emission H01S; frequency regulation by comparison with a reference frequency determined by energy levels of molecules, atoms, or subatomic particles H03L 7/26)</p> <p><u>NOTES</u></p> <p>1. This subclass <i>covers</i>:</p> <ol style="list-style-type: none"> <i>generating or handling plasma;</i> <i>devices for accelerating electrons, ion beams or neutral particles;</i> <i>devices for producing neutral particle beams;</i> <i>targets for (a), (b) or (c).</i> <p>2. This subclass <i>does not cover</i> devices for producing, accelerating, influencing or using a flow of electrons or ions within electric discharge tubes or discharge lamps, which are covered by subclass <i>H01J</i>.</p> <p><u>WARNING</u></p> <p>In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.</p>
U	H05H 1/00	Generating plasma; Handling plasma
U	H05H 1/24	<ul style="list-style-type: none"> Generating plasma {(nuclear fusion reactors G21B 1/00; gas-filled discharge reactors H01J 37/32)}
U	H05H 1/26	<ul style="list-style-type: none"> Plasma torches
U	H05H 1/32	<ul style="list-style-type: none"> using an arc (H05H 1/28 takes precedence)
M	H05H 1/42	<ul style="list-style-type: none"> with provisions for introducing materials into the plasma, e.g. powder, liquid <i>or liquid</i> {(arc stabilising or constricting arrangements H05H 1/3405; coaxial protecting fluids H05H 1/341; electrostatic spraying, spraying apparatus with means for charging the spray electrically B05B 5/00 {; cf. B23K 9/324, B05B 7/22})}
M	H05H 1/52	<ul style="list-style-type: none"> using exploding wires or spark gaps (H05H 1/26 takes precedence; spark gaps in general H01T)
U	H05H 3/00	Production or acceleration of neutral particle beams, e.g. molecular or atomic beams
M	H05H 3/02	<ul style="list-style-type: none"> Molecular or atomic beam generation <i>-beam generation, e.g. resonant beam generation</i> (charge exchange devices G21K 1/14; polarising devices G21K 1/16; using resonance or molecular beams for analysing or investigating materials G01N 24/002; atomic clock G04F 5/14; beam masers H01S 1/06)
U	H05H 5/00	Direct voltage accelerators; Accelerators using single pulses (H05H 3/06 takes precedence)
U	H05H 5/02	<ul style="list-style-type: none"> Details (targets for producing nuclear reactions H05H 6/00)
M	H05H 5/03	<ul style="list-style-type: none"> Accelerating tubes (vessels or containers of electric discharge tubes with improved potential distribution over surface of vessel H01J 5/06; shields of X-ray tubes associated with vessels or containers H01J 35/16)
U	H05H 7/00	Details of devices of the types covered by groups H05H 9/00, H05H 11/00, H05H 13/00

- M H05H 7/02 • Circuits or systems for supplying or feeding radio-frequency energy ~~(radio-frequency generators H03B)~~

Project: RP12466 (H05K)

- U H05K 5/00 Casings, cabinets or drawers for electric apparatus**
- D H05K 5/0004 • {~~comprising several parts forming a closed casing~~
<administratively transferred to [H05K 5/10](#)>
- D H05K 5/0008 • • {~~assembled by screws~~
<administratively transferred to [H05K 5/13](#)>
- D H05K 5/0013 • • {~~assembled by resilient members~~
<administratively transferred to [H05K 5/15](#)>
- U H05K 5/0017 • {with operator interface units}
WARNING
Group [H05K 5/0017](#) is impacted by reclassification into group [H05K 5/0018](#).
Groups [H05K 5/0017](#) and [H05K 5/0018](#) should be considered in order to perform a complete search.
- U H05K 5/0018 • • {having an electronic display}
WARNING
Group [H05K 5/0018](#) is incomplete pending reclassification of documents from group [H05K 5/0017](#).
Groups [H05K 5/0017](#) and [H05K 5/0018](#) should be considered in order to perform a complete search.
- D H05K 5/0021 • {~~Side-by-side or stacked arrangements~~
<administratively transferred to [H05K 5/30](#)>
- U H05K 5/02 • Details
WARNING
Group [H05K 5/02](#) is impacted by reclassification into groups [H05K 5/0209](#), [H05K 5/021](#), [H05K 5/0211](#), [H05K 5/0212](#), [H05K 5/0214](#), [H05K 5/0215](#) and [H05K 5/0216](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- U H05K 5/04 • Metal casings
- U H05K 5/06 • Hermetically-sealed casings {(specially adapted for small components [H05K 5/0095](#))}
- U H05K 5/069 • • {Other details of the casing, e.g. wall structure, passage for a connector, a cable, a shaft}
- N H05K 5/10 • *comprising several parts forming a closed casing*
- N H05K 5/13 • • *assembled by screws*
- N H05K 5/15 • • *assembled by resilient members*
- N H05K 5/30 • *Side-by-side or stacked arrangements*

Project: RP12465 (H10B)

- U H10B 10/00 Static random access memory [SRAM] devices**
- H10B 10/10 • SRAM devices comprising bipolar components

WARNING

Group H10B 10/10 is incomplete pending reclassification of documents from groups H01L 27/1027, H01L 27/1028 and H10B 99/00.

All groups listed in this Warning should be considered in order to perform a complete search.

U **H10B 12/00**
H10B 12/10

Dynamic random access memory [DRAM] devices

- DRAM devices comprising bipolar components

WARNING

Group H10B 12/10 is incomplete pending reclassification of documents from groups H01L 27/1027, H01L 27/1028 and H10B 99/00.
All groups listed in this Warning should be considered in order to perform a complete search.

U **H10B 20/00**
H10B 20/10

Read-only memory [ROM] devices

- ROM devices comprising bipolar components

WARNING

Group H10B 20/10 is incomplete pending reclassification of documents from groups H01L 27/1027, H01L 27/1028 and H10B 99/00.
All groups listed in this Warning should be considered in order to perform a complete search.

H10B 69/00

Erasable-and-programmable ROM [EPROM] devices not provided for in groups [H10B 41/00](#) - [H10B 63/00](#), e.g. ultraviolet erasable-and-programmable ROM [UVEPROM] devices

WARNING

Group H10B 69/00 is incomplete pending reclassification of documents from groups H01L 27/1027 and H01L 27/1028.
Groups H01L 27/1027, H01L 27/1028 and H10B 69/00 should be considered in order to perform a complete search.

H10B 99/00

Subject matter not provided for in other groups of this subclass

WARNING

Group H10B 99/00 is incomplete pending reclassification of documents from groups H01L 27/102 and H01L 27/1022.
Group H10B 99/00 is also impacted by reclassification into groups H10B 10/10, H10B 12/10 and H10B 20/10.
All groups listed in this Warning should be considered in order to perform a complete search.

H10B 99/10

- {Memory cells having a cross-point geometry}

WARNING

Group H10B 99/10 is incomplete pending reclassification of documents from group H01L 27/10.
Groups H01L 27/10 and H10B 99/10 should be considered in order to perform a complete search.

H10B 99/14

- {comprising memory cells that only have passive resistors or passive capacitors}

WARNING

Group H10B 99/14 is incomplete pending reclassification of documents from group H01L 27/101.
Groups H01L 27/101 and H10B 99/14 should be considered in order to perform a complete search.

H10B 99/16

- {comprising memory cells having diodes}

WARNING

Group H10B 99/16 is incomplete pending reclassification of documents from group H01L 27/1021.

Groups H01L 27/1021 and H10B 99/16 should be considered in order to perform a complete search.

H10B 99/20

- {comprising memory cells having thyristors}

WARNING

Group H10B 99/20 is incomplete pending reclassification of documents from groups H01L 27/1027 and H01L 27/1028.

Groups H01L 27/1027, H01L 27/1028 and H10B 99/20 should be considered in order to perform a complete search.

H10B 99/22

- {including field-effect components}

WARNING

Group H10B 99/22 is incomplete pending reclassification of documents from group H01L 27/105.

Groups H01L 27/105 and H10B 99/22 should be considered in order to perform a complete search.

Project: RP12465 (H10D)**N H10D****INORGANIC ELECTRIC SEMICONDUCTOR DEVICES****NOTES**

1. This subclass covers electric semiconductor devices having inorganic semiconductor bodies. This includes the following kind of devices:

- inorganic semiconductor devices specially adapted for rectifying, amplifying, oscillating or switching, e.g. transistors or diodes;
- individual inorganic resistors or capacitors having potential barriers;
- individual resistors, capacitors or inductors having no potential barriers, and specially adapted for integration with other semiconductor components;
- semiconductor bodies, or regions thereof, of devices covered by this subclass;
- electrodes of devices covered by this subclass;
- integrated devices, e.g. CMOS integrated devices;
- processes or apparatus specially adapted for the manufacture or treatment of such devices.

2. This subclass does not cover:

- electronic memory devices, which are covered by subclass [H10B](#);
- semiconductor devices sensitive to infrared radiation, light, electromagnetic radiation of shorter wavelength or corpuscular radiation, which are covered by subclass [H10E](#);
- light-emitting semiconductor devices having at least one potential barrier, which are covered by subclass [H10H](#);
- thermoelectric, thermomagnetic, piezoelectric, electrostrictive, magnetostrictive, magnetic-effect, superconducting or other electric solid-state devices, which are covered by subclass [H10N](#);
- constructional details other than semiconductor bodies or electrodes, which are covered by group [H01L 23/00](#).

3. In this subclass, the periodic system used is the I to VIII group system indicated in the Periodic Table under Note (3) of section [C](#).

N H10D 1/00 -
H10D 48/00

Individual devices

N H10D 1/00

Resistors, capacitors or inductors

NOTE

This group covers:

- individual inorganic resistors or capacitors having potential barriers;
- individual resistors, capacitors or inductors having no potential barriers, and specially adapted for integration with other semiconductor components.

N H10D 1/01

- {Manufacture or treatment}

WARNING

Group [H10D 1/01](#) is incomplete pending reclassification of documents from group [H10D 8/051](#).

Groups [H10D 8/051](#) and [H10D 1/01](#) should be considered in order to perform a complete search.

N H10D 1/021

- • {of resistors having no potential barriers}

N H10D 1/025

- • {of resistors having potential barriers}

WARNING

Group [H10D 1/025](#) is incomplete pending reclassification of documents from groups [H10D 8/051](#) and [H10D 48/021](#).

Groups [H10D 8/051](#), [H10D 48/021](#) and [H10D 1/025](#) should be considered in order to perform a complete search.

N H10D 1/041

- • {of capacitors having no potential barriers}

N H10D 1/042

- • • {using deposition processes to form electrode extensions}

N H10D 1/043

- • • {using patterning processes to form electrode extensions, e.g. etching}

N H10D 1/045

- • {of capacitors having potential barriers, e.g. varactors}

WARNING

Groups [H10D 1/045](#) - [H10D 1/048](#) are incomplete pending reclassification of documents from groups [H10D 8/051](#) and [H10D 48/021](#).

All groups listed in this Warning should be considered in order to perform a complete search.

N H10D 1/047

- • • {of conductor-insulator-semiconductor capacitors, e.g. trench capacitors}

N H10D 1/048

- • • {having PN junctions, e.g. hybrid capacitors with MOS control}

N H10D 1/20

- Inductors

Q H10D 1/40

- Resistors

WARNING

Group [H10D 1/40](#) is impacted by reclassification into group [H10D 48/38](#).

Groups [H10D 1/40](#) and [H10D 48/38](#) should be considered in order to perform a complete search.

N H10D 1/43

- • Resistors having PN junctions

N H10D 1/47

- • Resistors having no potential barriers

N H10D 1/472

- • • {having an active material comprising carbon, e.g. diamond or diamond-like carbon [DLC]}

N H10D 1/474

- • • {comprising refractory metals, transition metals, noble metals, metal compounds or metal alloys, e.g. silicides}

N H10D 1/476

- • • {comprising conducting organic materials, e.g. conducting polymers}

N H10D 1/60

- Capacitors

- N H10D 1/62
 - • Capacitors having potential barriers
- N H10D 1/64
 - • • Variable-capacitance diodes, e.g. varactors
- N H10D 1/66
 - • • Conductor-insulator-semiconductor capacitors, e.g. MOS capacitors
- N H10D 1/665
 - • • • {Trench conductor-insulator-semiconductor capacitors, e.g. trench MOS capacitors}
- N H10D 1/68
 - • Capacitors having no potential barriers
- N H10D 1/682
 - • • {having dielectrics comprising perovskite structures}
- N H10D 1/684
 - • • • {the dielectrics comprising multiple layers, e.g. comprising buffer layers, seed layers or gradient layers}
- N H10D 1/688
 - • • • {comprising barrier layers to prevent diffusion of hydrogen or oxygen}
- N H10D 1/692
 - • • {Electrodes}
- N H10D 1/694
 - • • • {comprising noble metals or noble metal oxides}
- N H10D 1/696
 - • • • {comprising multiple layers, e.g. comprising a barrier layer and a metal layer (barrier layers to prevent diffusion of hydrogen or oxygen in perovskite based capacitors [H10D 1/688](#))}
- N H10D 1/711
 - • • • {having non-planar surfaces, e.g. formed by texturisation}
- N H10D 1/712
 - • • • • {being rough surfaces, e.g. using hemispherical grains}
- N H10D 1/714
 - • • • • {having horizontal extensions}
- N H10D 1/716
 - • • • • {having vertical extensions}

Q H10D 8/00

Diodes (variable-capacitance diodes [H10D 1/64](#); gated diodes [H10D 12/00](#))

NOTE

In this group, when the manufacture or treatment of a device is determined to be novel and non-obvious, the device itself is also classified.

WARNING

Group [H10D 8/00](#) is impacted by reclassification into group [H10D 8/20](#).

Groups [H10D 8/00](#) and [H10D 8/20](#) should be considered in order to perform a complete search.

- N H10D 8/01
 - Manufacture or treatment

WARNING

Groups [H10D 8/01](#), [H10D 8/021](#), [H10D 8/022](#), [H10D 8/024](#), [H10D 8/041](#), [H10D 8/045](#) and [H10D 8/055](#) are incomplete pending reclassification of documents from groups [H10D 8/043](#), [H10D 8/051](#) and [H10D 48/021](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N H10D 8/021
 - • {of breakdown diodes}
- N H10D 8/022
 - • • {of Zener diodes}
- N H10D 8/024
 - • • {of Avalanche diodes}
- N H10D 8/041
 - • {of multilayer diodes}
- Q H10D 8/043
 - • {of planar diodes}

WARNING

Group [H10D 8/043](#) is incomplete pending reclassification of documents from groups [H10D 8/051](#) and [H10D 48/021](#).

Group [H10D 8/043](#) is also impacted by reclassification into groups [H10D 8/01](#), [H10D 8/021](#) - [H10D 8/024](#), [H10D 8/041](#), [H10D 8/045](#) and [H10D 8/055](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N H10D 8/045 • • {of PN junction diodes}
- Q H10D 8/051 • • {of Schottky diodes}
- WARNING
 Group [H10D 8/051](#) is incomplete pending reclassification of documents from group [H10D 48/021](#).
 Group [H10D 8/051](#) is also impacted by reclassification into groups [H10D 1/01](#), [H10D 1/025](#), [H10D 1/045](#) - [H10D 1/048](#), [H10D 8/01](#), [H10D 8/021](#) - [H10D 8/024](#), [H10D 8/041](#), [H10D 8/043](#), [H10D 8/045](#), [H10D 8/053](#), [H10D 8/055](#) and [H10D 48/021](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- N H10D 8/053 • • {of heterojunction diodes or of tunnel diodes}
- WARNING
 Group [H10D 8/053](#) is incomplete pending reclassification of documents from groups [H10D 8/051](#) and [H10D 48/021](#).
 Groups [H10D 8/051](#), [H10D 48/021](#) and [H10D 8/053](#) should be considered in order to perform a complete search.
- N H10D 8/055 • • {of transit-time diodes, e.g. IMPATT or TRAPATT diodes}
- N H10D 8/20 • Breakdown diodes, e.g. avalanche diodes
- WARNING
 Group [H10D 8/20](#) is incomplete pending reclassification of documents from group [H10D 8/00](#).
 Groups [H10D 8/00](#) and [H10D 8/20](#) should be considered in order to perform a complete search.
- N H10D 8/25 • • Zener diodes
- N H10D 8/30 • Point-contact diodes
- N H10D 8/40 • Transit-time diodes, e.g. IMPATT or TRAPATT diodes
- N H10D 8/411 • {PN diodes having planar bodies}
- N H10D 8/422 • {PN diodes having the PN junctions in mesas}
- N H10D 8/50 • PIN diodes
- N H10D 8/60 • Schottky-barrier diodes
- N H10D 8/605 • • {of the trench conductor-insulator-semiconductor barrier type, e.g. trench MOS barrier Schottky rectifiers [TMBS]}
- N H10D 8/70 • Tunnel-effect diodes
- N H10D 8/75 • • Tunnel-effect PN diodes, e.g. Esaki diodes
- N H10D 8/755 • • {Resonant tunneling diodes [RTD]}
- N H10D 8/80 • PNP diodes, e.g. Shockley diodes or break-over diodes
- N H10D 8/812 • {Charge-trapping diodes}
- N H10D 8/825 • {Diodes having bulk potential barriers, e.g. Camel diodes, planar doped barrier diodes or graded bandgap diodes}
- N H10D 10/00 Bipolar junction transistors [BJT]**
- NOTE
 In this group, when the manufacture or treatment of a device is determined to be novel and non-obvious, the device itself is also classified.

- Q H10D 10/01
- Manufacture or treatment
- WARNING
 Group [H10D 10/01](#) is incomplete pending reclassification of documents from group [H10D 48/031](#).
 Group [H10D 10/01](#) is also impacted by reclassification into groups [H10D 10/051](#) - [H10D 10/058](#).
 Groups [H10D 48/031](#), [H10D 10/01](#) and [H10D 10/051](#) - [H10D 10/058](#) should be considered in order to perform a complete search.
- N H10D 10/021
- {of heterojunction BJTs [HBT]}
- WARNING
 Group [H10D 10/021](#) is incomplete pending reclassification of documents from group [H10D 48/031](#).
 Groups [H10D 48/031](#) and [H10D 10/021](#) should be considered in order to perform a complete search.
- N H10D 10/031
- {of Schottky BJTs}
- WARNING
 Group [H10D 10/031](#) is incomplete pending reclassification of documents from group [H10D 48/031](#).
 Groups [H10D 48/031](#) and [H10D 10/031](#) should be considered in order to perform a complete search.
- N H10D 10/041
- {of thin-film BJTs (of heterojunction BJTs [H10D 10/021](#))}
- WARNING
 Group [H10D 10/041](#) is incomplete pending reclassification of documents from group [H10D 48/031](#).
 Groups [H10D 48/031](#) and [H10D 10/041](#) should be considered in order to perform a complete search.
- N H10D 10/051
- {of vertical BJTs (of heterojunction BJTs [H10D 10/021](#); of Schottky BJTs [H10D 10/031](#); of thin film BJTs [H10D 10/041](#))}
- WARNING
 Groups [H10D 10/051](#), [H10D 10/056](#) and [H10D 10/058](#) are incomplete pending reclassification of documents from groups [H10D 10/01](#) and [H10D 48/031](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- Q H10D 10/052
- • {of inverted vertical BJTs}
- WARNING
 Group [H10D 10/052](#) is incomplete pending reclassification of documents from groups [H10D 10/01](#) and [H10D 48/031](#).
 Group [H10D 10/052](#) is also impacted by reclassification into group [H10D 10/054](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- N H10D 10/054
- • {Forming extrinsic base regions on silicon substrate after insulating device isolation in vertical BJTs having single crystalline emitter, collector or base regions}
- WARNING
 Group [H10D 10/054](#) is incomplete pending reclassification of documents from groups [H10D 10/01](#), [H10D 10/052](#) and [H10D 48/031](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N H10D 10/056 • • • {of vertical BJTs having the main current going through the whole substrate, e.g. power BJTs}
- N H10D 10/058 • • • {having multi-emitter structures, e.g. interdigitated, multi-cellular or distributed emitters}
- N H10D 10/061 • • {of lateral BJTs (of heterojunction BJTs [H10D 10/021](#); of thin film BJTs [H10D 10/041](#))}

WARNING

Group [H10D 10/061](#) is incomplete pending reclassification of documents from group [H10D 48/031](#).

Groups [H10D 48/031](#) and [H10D 10/061](#) should be considered in order to perform a complete search.

- N H10D 10/211 • {Point-contact BJTs}
- N H10D 10/221 • {Schottky barrier BJTs}
- N H10D 10/231 • {Tunnel BJTs}
- N H10D 10/241 • {Avalanche BJTs}
- N H10D 10/311 • {Thin-film BJTs}
- N H10D 10/40 • Vertical BJTs {(Vertical Heterojunction BJTs [H10D 10/821](#))}
- N H10D 10/421 • • {having both emitter-base and base-collector junctions ending at the same surface of the body}
- N H10D 10/441 • • {having an emitter-base junction ending at a main surface of the body and a base-collector junction ending at a lateral surface of the body}
- N H10D 10/461 • • {Inverted vertical BJTs}
- N H10D 10/60 • Lateral BJTs
- N H10D 10/80 • Heterojunction BJTs
- N H10D 10/821 • • {Vertical heterojunction BJTs}
- N H10D 10/841 • • • {having a two-dimensional base, e.g. modulation-doped base, inversion layer base or delta-doped base}
- N H10D 10/861 • • • {having an emitter region comprising one or more non-monocrystalline elements of Group IV, e.g. amorphous silicon}
- N H10D 10/881 • • • {Resonant tunnelling transistors}
- N H10D 10/891 • • • {comprising lattice-mismatched active layers, e.g. SiGe strained-layer transistors}

N H10D 12/00 *Bipolar devices controlled by the field effect, e.g. insulated-gate bipolar transistors [IGBT]*

NOTE

In this group, when the manufacture or treatment of a device is determined to be novel and non-obvious, the device itself is also classified.

- Q H10D 12/01 • Manufacture or treatment

WARNING

Group [H10D 12/01](#) is incomplete pending reclassification of documents from groups [H10D 12/031](#) and [H10D 48/031](#).

Group [H10D 12/01](#) is also impacted by reclassification into group [H10D 12/031](#).
All groups listed in this Warning should be considered in order to perform a complete search.

- N H10D 12/021 • • {of gated diodes, e.g. field-controlled diodes [FCD]}
- WARNING
Group [H10D 12/021](#) is incomplete pending reclassification of documents from group [H10D 48/031](#).
Groups [H10D 48/031](#) and [H10D 12/021](#) should be considered in order to perform a complete search.
- Q H10D 12/031 • • {of IGBTs}
- WARNING
Group [H10D 12/031](#) is incomplete pending reclassification of documents from groups [H10D 12/01](#) and [H10D 48/031](#).
Group [H10D 12/031](#) is also impacted by reclassification into groups [H10D 12/01](#), [H10D 12/035](#), [H10D 12/038](#), [H10D 18/01](#) - [H10D 18/031](#) and [H10D 30/028](#) - [H10D 30/0297](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N H10D 12/032 • • • {of vertical IGBTs}
- WARNING
Group [H10D 12/032](#) is incomplete pending reclassification of documents from group [H10D 48/031](#).
Groups [H10D 48/031](#) and [H10D 12/032](#) should be considered in order to perform a complete search.
- N H10D 12/035 • • • • {Etching a recess in the emitter region (having a recessed gate [H10D 12/038](#))}
- WARNING
Group [H10D 12/035](#) is incomplete pending reclassification of documents from groups [H10D 12/031](#) and [H10D 48/031](#).
Groups [H10D 12/031](#), [H10D 48/031](#) and [H10D 12/035](#) should be considered in order to perform a complete search.
- N H10D 12/038 • • • • {having a recessed gate, e.g. trench-gate IGBTs}
- WARNING
Group [H10D 12/038](#) is incomplete pending reclassification of documents from groups [H10D 12/031](#) and [H10D 48/031](#).
Groups [H10D 12/031](#), [H10D 48/031](#) and [H10D 12/038](#) should be considered in order to perform a complete search.
- Q H10D 12/211 • {Gated diodes}
- WARNING
Group [H10D 12/211](#) is impacted by reclassification into groups [H10D 18/40](#) and [H10D 18/60](#) - [H10D 18/655](#).
Groups [H10D 12/211](#), [H10D 18/40](#) and [H10D 18/60](#) - [H10D 18/655](#) should be considered in order to perform a complete search.
- N H10D 12/212 • • {having PN junction gates, e.g. field controlled diodes}
- Q H10D 12/411 • {Insulated-gate bipolar transistors [IGBT]}
- WARNING
Group [H10D 12/411](#) is impacted by reclassification into groups [H10D 12/415](#), [H10D 12/416](#), [H10D 12/417](#), [H10D 12/418](#) and [H10D 84/161](#).
All groups listed in this Warning should be considered in order to perform a complete search.

- N H10D 12/415
- • {having edge termination structures}
- WARNING
Group [H10D 12/415](#) is incomplete pending reclassification of documents from group [H10D 12/411](#).
Groups [H10D 12/411](#) and [H10D 12/415](#) should be considered in order to perform a complete search.
- N H10D 12/416
- • {Bidirectional devices, e.g. trench-gate IGBTs having additional gates at the anode side}
- WARNING
Group [H10D 12/416](#) is incomplete pending reclassification of documents from group [H10D 12/411](#).
Groups [H10D 12/411](#) and [H10D 12/416](#) should be considered in order to perform a complete search.
- N H10D 12/417
- • {having a drift region having a doping concentration that is higher at the collector side relative to other parts of the drift region}
- WARNING
Group [H10D 12/417](#) is incomplete pending reclassification of documents from group [H10D 12/411](#).
Groups [H10D 12/411](#) and [H10D 12/417](#) should be considered in order to perform a complete search.
- N H10D 12/418
- • {having a drift region having a doping concentration that is higher at the emitter side relative to other parts of the drift region}
- WARNING
Group [H10D 12/418](#) is incomplete pending reclassification of documents from group [H10D 12/411](#).
Groups [H10D 12/411](#) and [H10D 12/418](#) should be considered in order to perform a complete search.
- N H10D 12/421
- • {on insulating layers or insulating substrates, e.g. thin-film IGBTs}
- WARNING
Group [H10D 12/421](#) is incomplete pending reclassification of documents from group [H10D 12/491](#).
Groups [H10D 12/491](#) and [H10D 12/421](#) should be considered in order to perform a complete search.
- N H10D 12/441
- • {Vertical IGBTs}
- N H10D 12/461
- • • {having non-planar surfaces, e.g. having trenches, recesses or pillars in the surfaces of the emitter, base or collector regions}
- WARNING
Groups [H10D 12/461](#) and [H10D 12/481](#) are incomplete pending reclassification of documents from group [H10D 12/491](#).
Groups [H10D 12/491](#), [H10D 12/461](#) and [H10D 12/481](#) should be considered in order to perform a complete search.
- N H10D 12/481
- • • {having gate structures on slanted surfaces, on vertical surfaces, or in grooves, e.g. trench gate IGBTs}
- Q H10D 12/491
- • • {having both emitter contacts and collector contacts in the same substrate side}
- WARNING
Group [H10D 12/491](#) is impacted by reclassification into groups [H10D 12/421](#) and [H10D 12/461](#) - [H10D 12/481](#).

Groups [H10D 12/491](#), [H10D 12/421](#) and [H10D 12/461](#) - [H10D 12/481](#) should be considered in order to perform a complete search.

N H10D 18/00

Thyristors

NOTE

In this group, when the manufacture or treatment of a device is determined to be novel and non-obvious, the device itself is also classified.

N H10D 18/01

- Manufacture or treatment

WARNING

Groups [H10D 18/01](#) - [H10D 18/031](#) are incomplete pending reclassification of documents from groups [H10D 12/031](#) and [H10D 48/031](#).

All groups listed in this Warning should be considered in order to perform a complete search.

N H10D 18/021

- {of bidirectional devices, e.g. triacs}

N H10D 18/031

- {of lateral or planar thyristors}

N H10D 18/211

- {having built-in localised breakdown or breakover regions, e.g. self-protected against destructive spontaneous firing}

N H10D 18/221

- {having amplifying gate structures, e.g. cascade configurations}

N H10D 18/241

- {Asymmetrical thyristors}

N H10D 18/251

- {Lateral thyristors}

N H10D 18/40

- with turn-on by field effect

WARNING

Group [H10D 18/40](#) is incomplete pending reclassification of documents from group [H10D 12/211](#).

Groups [H10D 12/211](#) and [H10D 18/40](#) should be considered in order to perform a complete search.

N H10D 18/60

- Gate-turn-off devices

WARNING

Groups [H10D 18/60](#) - [H10D 18/655](#) are incomplete pending reclassification of documents from group [H10D 12/211](#).

All groups listed in this Warning should be considered in order to perform a complete search.

N H10D 18/65

- with turn-off by field effect

N H10D 18/655

- {produced by insulated gate structures}

N H10D 18/80

- Bidirectional devices, e.g. triacs

Q H10D 30/00

Field-effect transistors [FET] (insulated-gate bipolar transistors [H10D 12/00](#))

NOTE

In this group, when the manufacture or treatment of a device is determined to be novel and non-obvious, the device itself is also classified.

WARNING

Group [H10D 30/00](#) is impacted by reclassification into group [H10D 30/40](#).

Groups [H10D 30/00](#) and [H10D 30/40](#) should be considered in order to perform a complete search.

- Q H10D 30/01
- Manufacture or treatment
- WARNING
Group [H10D 30/01](#) is impacted by reclassification into groups [H10D 30/012](#), [H10D 30/014](#), [H10D 30/015](#), [H10D 30/017](#), [H10D 30/019](#) - [H10D 30/0198](#), [H10D 30/021](#) - [H10D 30/0415](#), [H10D 30/051](#) - [H10D 30/0516](#) and [H10D 30/061](#) - [H10D 30/0618](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N H10D 30/012
- • {of static induction transistors [SIT], e.g. permeable base transistors [PBT]}
- WARNING
Group [H10D 30/012](#) is incomplete pending reclassification of documents from group [H10D 30/01](#).
Groups [H10D 30/01](#) and [H10D 30/012](#) should be considered in order to perform a complete search.
- Q H10D 30/014
- • {of FETs having zero-dimensional [0D] or one-dimensional [1D] channels, e.g. quantum wire FETs, single-electron transistors [SET] or Coulomb blockade transistors}
- WARNING
Group [H10D 30/014](#) is incomplete pending reclassification of documents from group [H10D 30/01](#).
Group [H10D 30/014](#) is also impacted by reclassification into groups [H10D 30/019](#) - [H10D 30/0198](#).
Groups [H10D 30/01](#), [H10D 30/014](#) and [H10D 30/019](#) - [H10D 30/0198](#) should be considered in order to perform a complete search.
- N H10D 30/015
- • {of FETs having heterojunction interface channels or heterojunction gate electrodes, e.g. HEMT}
- WARNING
Group [H10D 30/015](#) is incomplete pending reclassification of documents from group [H10D 30/01](#).
Groups [H10D 30/01](#) and [H10D 30/015](#) should be considered in order to perform a complete search.
- N H10D 30/017
- • {of FETs having two-dimensional material channels, e.g. TMD FETs}
- WARNING
Group [H10D 30/017](#) is incomplete pending reclassification of documents from groups [H10D 30/01](#), [H10D 30/031](#) and [H10D 30/0323](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N H10D 30/019
- • {of FETs having stacked nanowire, nanosheet or nanoribbon channels}
- WARNING
Group [H10D 30/019](#) is incomplete pending reclassification of documents from groups [H10D 30/01](#), [H10D 30/014](#), [H10D 30/024](#), [H10D 30/0241](#), [H10D 30/031](#), [H10D 30/0321](#), [H10D 30/0323](#) and [H10D 30/0327](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N H10D 30/0191
- • • {forming stacked channels, e.g. changing their shapes or sizes}
- WARNING
Groups [H10D 30/0191](#) - [H10D 30/0194](#) are incomplete pending reclassification of documents from groups [H10D 30/01](#), [H10D 30/014](#),

[H10D 30/024](#), [H10D 30/0241](#), [H10D 30/0245](#), [H10D 30/031](#),
[H10D 30/0321](#), [H10D 30/0323](#) and [H10D 30/0327](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N H10D 30/0193 . . . {by modifying properties of the stacked channels}
- N H10D 30/0194 . . . {the stacked channels having different properties}
- N H10D 30/0195 . . . {forming inner spacers between adjacent channels, e.g. changing their shapes or sizes}

WARNING

Groups [H10D 30/0195](#) - [H10D 30/0197](#) are incomplete pending reclassification of documents from groups [H10D 30/01](#), [H10D 30/014](#), [H10D 30/024](#), [H10D 30/031](#), [H10D 30/0321](#), [H10D 30/0323](#) and [H10D 30/0327](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N H10D 30/0196 . . . {by modifying properties of the inner spacers}
- N H10D 30/0197 . . . {the inner spacers having different properties}
- N H10D 30/0198 . . . {forming source or drain electrodes wherein semiconductor bodies are replaced by dielectric layers and the source or drain electrodes extend through the dielectric layers}

WARNING

Group [H10D 30/0198](#) is incomplete pending reclassification of documents from groups [H10D 30/01](#), [H10D 30/014](#), [H10D 30/024](#), [H10D 30/031](#), [H10D 30/0321](#), [H10D 30/0323](#) and [H10D 30/0327](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N H10D 30/021 . . {of FETs having insulated gates [IGFET]}

WARNING

Groups [H10D 30/021](#), [H10D 30/0212](#), [H10D 30/0213](#), [H10D 30/0215](#), [H10D 30/0217](#), [H10D 30/0221](#), [H10D 30/023](#), [H10D 30/0243](#), [H10D 30/025](#), [H10D 30/026](#), [H10D 30/027](#), [H10D 30/0275](#), [H10D 30/0277](#), [H10D 30/0278](#) and [H10D 30/0413](#) are incomplete pending reclassification of documents from group [H10D 30/01](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N H10D 30/0212 . . . {using self-aligned silicidation}
- N H10D 30/0213 . . . {providing different silicide thicknesses on gate electrodes and on source regions or drain regions}
- N H10D 30/0215 . . . {using self-aligned selective metal deposition simultaneously on gate electrodes and the source regions or drain regions}
- N H10D 30/0217 . . . {forming self-aligned punch-through stoppers or threshold implants under gate regions}
- N H10D 30/0218 . . . {having pocket halo regions selectively formed at the sides of the gates}

WARNING

Group [H10D 30/0218](#) is incomplete pending reclassification of documents from groups [H10D 30/01](#) and [H10D 30/022](#).

Groups [H10D 30/01](#), [H10D 30/022](#) and [H10D 30/0218](#) should be considered in order to perform a complete search.

- Q H10D 30/022
- • • {having lightly-doped source or drain extensions selectively formed at the sides of the gates}
- WARNING
 Group [H10D 30/022](#) is incomplete pending reclassification of documents from group [H10D 30/01](#).
 Group [H10D 30/022](#) is also impacted by reclassification into group [H10D 30/0218](#).
 Groups [H10D 30/01](#), [H10D 30/022](#) and [H10D 30/0218](#) should be considered in order to perform a complete search.
- N H10D 30/0221
- • • {having asymmetry in the channel direction, e.g. lateral high-voltage MISFETs having drain offset region or extended-drain MOSFETs [EDMOS]}
- N H10D 30/0223
- • • {having source and drain regions or source and drain extensions self-aligned to sides of the gate}
- WARNING
 Groups [H10D 30/0223](#) - [H10D 30/0229](#) are incomplete pending reclassification of documents from groups [H10D 30/01](#) and [H10D 30/0273](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- N H10D 30/0225
- • • • {using an initial gate mask complementary to the prospective gate location, e.g. using dummy source and drain electrodes}
- N H10D 30/0227
- • • • {having both lightly-doped source and drain extensions and source and drain regions self-aligned to the sides of the gate, e.g. lightly-doped drain [LDD] MOSFET or double-diffused drain [DDD] MOSFET}
- N H10D 30/0229
- • • • • {forming drain regions and lightly-doped drain [LDD] simultaneously, e.g. using implantation through a T-shaped mask}
- N H10D 30/023
- • • {having multiple independently-addressable gate electrodes influencing the same channel (manufacture or treatment of dual gate TFTs [H10D 30/031](#))}
- Q H10D 30/024
- • • {of fin field-effect transistors [FinFET]}
- WARNING
 Group [H10D 30/024](#) is incomplete pending reclassification of documents from group [H10D 30/01](#).
 Group [H10D 30/024](#) is also impacted by reclassification into groups [H10D 30/019](#) - [H10D 30/0198](#).
 Groups [H10D 30/01](#), [H10D 30/024](#) and [H10D 30/019](#) - [H10D 30/0198](#) should be considered in order to perform a complete search.
- Q H10D 30/0241
- • • • {doping of vertical sidewalls, e.g. using tilted or multi-angled implants}
- WARNING
 Group [H10D 30/0241](#) is incomplete pending reclassification of documents from group [H10D 30/01](#).
 Group [H10D 30/0241](#) is also impacted by reclassification into groups [H10D 30/019](#) and [H10D 30/0191](#) - [H10D 30/0194](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- N H10D 30/0243
- • • • {using dummy structures having essentially the same shapes as the semiconductor bodies, e.g. to provide stability}
- Q H10D 30/0245
- • • • {by further thinning the channel after patterning the channel, e.g. using sacrificial oxidation on fins}
- WARNING
 Group [H10D 30/0245](#) is incomplete pending reclassification of documents from group [H10D 30/01](#).

Group [H10D 30/0245](#) is also impacted by reclassification into groups [H10D 30/0191](#) - [H10D 30/0194](#).

Groups [H10D 30/01](#), [H10D 30/0245](#) and [H10D 30/0191](#) - [H10D 30/0194](#) should be considered in order to perform a complete search.

- N H10D 30/025 . . . {of vertical IGFETs (of VDMOS [H10D 30/0291](#); of vertical TFTs [H10D 30/0318](#))}
- N H10D 30/026 . . . {having laterally-coplanar source and drain regions, a gate at the sides of the bulk channel, and both horizontal and vertical current flow (of LDMOS [H10D 30/0289](#))}
- N H10D 30/027 . . . {of lateral single-gate IGFETs}
- Q H10D 30/0273 . . . {forming final gates or dummy gates after forming source and drain electrodes, e.g. contact first technology}

WARNING

Group [H10D 30/0273](#) is incomplete pending reclassification of documents from group [H10D 30/01](#).

Group [H10D 30/0273](#) is also impacted by reclassification into groups [H10D 30/0223](#) - [H10D 30/0229](#) and [H10D 64/017](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N H10D 30/0275 . . . {forming single crystalline semiconductor source or drain regions resulting in recessed gates, e.g. forming raised source or drain regions}
- N H10D 30/0277 . . . {forming conductor-insulator-semiconductor or Schottky barrier source or drain regions}
- N H10D 30/0278 . . . {forming single crystalline channels on wafers after forming insulating device isolations}
- N H10D 30/028 . . . {of double-diffused metal oxide semiconductor [DMOS] FETs}

WARNING

Groups [H10D 30/028](#) - [H10D 30/0297](#) are incomplete pending reclassification of documents from groups [H10D 12/031](#) and [H10D 30/01](#). All groups listed in this Warning should be considered in order to perform a complete search.

- N H10D 30/0281 . . . {of lateral DMOS [LDMOS] FETs}
- N H10D 30/0285 . . . {using formation of insulating sidewall spacers}
- N H10D 30/0287 . . . {using recessing of the source electrodes}
- N H10D 30/0289 . . . {using recessing of the gate electrodes, e.g. to form trench gate electrodes}
- N H10D 30/0291 . . . {of vertical DMOS [VDMOS] FETs}
- N H10D 30/0293 . . . {using formation of insulating sidewall spacers}
- N H10D 30/0295 . . . {using recessing of the source electrodes}
- N H10D 30/0297 . . . {using recessing of the gate electrodes, e.g. to form trench gate electrodes}
- Q H10D 30/031 . . . {of thin-film transistors [TFT]}

WARNING

Group [H10D 30/031](#) is incomplete pending reclassification of documents from group [H10D 30/01](#).

Group [H10D 30/031](#) is also impacted by reclassification into groups [H10D 30/017](#), [H10D 30/019](#) - [H10D 30/0198](#), [H10D 30/0312](#) and [H10D 30/0318](#).

All groups listed in this Warning should be considered in order to perform a complete search.

N H10D 30/0312 . . . {characterised by the gate electrodes}

WARNING

Group [H10D 30/0312](#) is incomplete pending reclassification of documents from groups [H10D 30/01](#), [H10D 30/031](#), [H10D 30/0321](#) and [H10D 30/0327](#).

All groups listed in this Warning should be considered in order to perform a complete search.

N H10D 30/0314 {of lateral top-gate TFTs comprising only a single gate}

WARNING

Group [H10D 30/0314](#) is incomplete pending reclassification of documents from groups [H10D 30/01](#) and [H10D 30/0327](#).

Groups [H10D 30/01](#), [H10D 30/0327](#) and [H10D 30/0314](#) should be considered in order to perform a complete search.

N H10D 30/0316 {of lateral bottom-gate TFTs comprising only a single gate}

WARNING

Group [H10D 30/0316](#) is incomplete pending reclassification of documents from groups [H10D 30/01](#) and [H10D 30/0327](#).

Groups [H10D 30/01](#), [H10D 30/0327](#) and [H10D 30/0316](#) should be considered in order to perform a complete search.

N H10D 30/0318 {of vertical TFTs}

WARNING

Group [H10D 30/0318](#) is incomplete pending reclassification of documents from groups [H10D 30/01](#), [H10D 30/031](#), [H10D 30/0321](#) and [H10D 30/0327](#).

All groups listed in this Warning should be considered in order to perform a complete search.

Q H10D 30/0321 {comprising silicon, e.g. amorphous silicon or polysilicon}

WARNING

Group [H10D 30/0321](#) is incomplete pending reclassification of documents from group [H10D 30/01](#).

Group [H10D 30/0321](#) is also impacted by reclassification into groups [H10D 30/019](#) - [H10D 30/0198](#), [H10D 30/0312](#) and [H10D 30/0318](#).

All groups listed in this Warning should be considered in order to perform a complete search.

Q H10D 30/0323 {comprising monocrystalline silicon}

WARNING

Group [H10D 30/0323](#) is incomplete pending reclassification of documents from group [H10D 30/01](#).

Group [H10D 30/0323](#) is also impacted by reclassification into groups [H10D 30/017](#) and [H10D 30/019](#) - [H10D 30/0198](#).

All groups listed in this Warning should be considered in order to perform a complete search.

Q H10D 30/0327 {on sapphire substrates, e.g. of silicon-on-sapphire [SOS] transistor}

WARNING

Group [H10D 30/0327](#) is incomplete pending reclassification of documents from group [H10D 30/01](#). Group [H10D 30/0327](#) is

also impacted by reclassification into groups [H10D 30/019](#) - [H10D 30/0198](#), [H10D 30/0312](#) - [H10D 30/0316](#) and [H10D 30/0318](#).
All groups listed in this Warning should be considered in order to perform a complete search.

- N H10D 30/0411 . . . {of FETs having floating gates}

WARNING

Group [H10D 30/0411](#) is incomplete pending reclassification of documents from groups [H10D 30/01](#) and [H10D 30/0415](#).
Groups [H10D 30/01](#), [H10D 30/0415](#) and [H10D 30/0411](#) should be considered in order to perform a complete search.

- N H10D 30/0413 . . . {of FETs having charge-trapping gate insulators, e.g. MNOS transistors}

- Q H10D 30/0415 . . . {of FETs having ferroelectric gate insulators}

WARNING

Group [H10D 30/0415](#) is incomplete pending reclassification of documents from group [H10D 30/01](#).

Group [H10D 30/0415](#) is also impacted by reclassification into group [H10D 30/0411](#).

Groups [H10D 30/01](#), [H10D 30/0415](#) and [H10D 30/0411](#) should be considered in order to perform a complete search.

- N H10D 30/051 . . {of FETs having PN junction gates ([H10D 30/015](#) takes precedence)}

WARNING

Groups [H10D 30/051](#) - [H10D 30/0516](#) are incomplete pending reclassification of documents from group [H10D 30/01](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N H10D 30/0512 . . . {of FETs having PN homojunction gates}

- N H10D 30/0515 . . . {of vertical FETs having PN homojunction gates}

- N H10D 30/0516 . . . {of FETs having PN heterojunction gates}

- Q H10D 30/061 . . {of FETs having Schottky gates ([H10D 30/015](#) takes precedence)}

WARNING

Group [H10D 30/061](#) is incomplete pending reclassification of documents from group [H10D 30/01](#).

Group [H10D 30/061](#) is also impacted by reclassification into groups [H10D 30/0612](#) - [H10D 30/0616](#) and [H10D 30/0618](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N H10D 30/0612 . . . {of lateral single-gate Schottky FETs}

WARNING

Groups [H10D 30/0612](#) - [H10D 30/0616](#) are incomplete pending reclassification of documents from groups [H10D 30/01](#) and [H10D 30/061](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N H10D 30/0614 . . . {using processes wherein the final gate is made after the completion of the source and drain regions, e.g. gate-last processes using dummy gates}

- N H10D 30/0616 . . . {using processes wherein the final gate is made before the completion of the source and drain regions, e.g. gate-first processes}

- N H10D 30/0618
- • • {of lateral Schottky gate FETs having multiple independently-addressable gate electrodes}
- WARNING
Group [H10D 30/0618](#) is incomplete pending reclassification of documents from groups [H10D 30/01](#) and [H10D 30/061](#).
Groups [H10D 30/01](#), [H10D 30/061](#) and [H10D 30/0618](#) should be considered in order to perform a complete search.
- N H10D 30/202
- {FETs having static field-induced regions, e.g. static-induction transistors [SIT] or permeable base transistors [PBT]}
- N H10D 30/204
- {Velocity modulation transistors [VMT]}
- N H10D 30/40
- FETs having zero-dimensional [0D], one-dimensional [1D] or two-dimensional [2D] charge carrier gas channels
- WARNING
Group [H10D 30/40](#) is incomplete pending reclassification of documents from group [H10D 30/00](#).
Groups [H10D 30/00](#) and [H10D 30/40](#) should be considered in order to perform a complete search.
- N H10D 30/402
- • {Single electron transistors; Coulomb blockade transistors}
- Q H10D 30/43
- • having 1D charge carrier gas channels, e.g. quantum wire FETs or transistors having 1D quantum-confined channels
- WARNING
Group [H10D 30/43](#) is impacted by reclassification into groups [H10D 30/435](#) and [H10D 30/501 - H10D 30/509](#).
Groups [H10D 30/43](#), [H10D 30/435](#) and [H10D 30/501 - H10D 30/509](#) should be considered in order to perform a complete search.
- N H10D 30/435
- • • {having multiple laterally adjacent 1D material channels}
- WARNING
Group [H10D 30/435](#) is incomplete pending reclassification of documents from group [H10D 30/43](#).
Groups [H10D 30/43](#) and [H10D 30/435](#) should be considered in order to perform a complete search.
- Q H10D 30/47
- • having 2D charge carrier gas channels, e.g. nanoribbon FETs or high electron mobility transistors [HEMT]
- WARNING
Group [H10D 30/47](#) is impacted by reclassification into groups [H10D 30/471](#), [H10D 30/474](#), [H10D 30/476](#), [H10D 30/481](#) and [H10D 30/501 - H10D 30/509](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N H10D 30/471
- • • {High electron mobility transistors [HEMT] or high hole mobility transistors [HHMT]}
- WARNING
Groups [H10D 30/471](#), [H10D 30/474](#) and [H10D 30/476](#) are incomplete pending reclassification of documents from group [H10D 30/47](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N H10D 30/472
- • • • {having lower bandgap active layer formed on top of wider bandgap layer, e.g. inverted HEMT}

- N H10D 30/473 . . . {having confinement of carriers by multiple heterojunctions, e.g. quantum well HEMT}
- N H10D 30/4732 . . . {using Group III-V semiconductor material}
- N H10D 30/4735 . . . {having delta-doped or planar-doped donor layers}
- WARNING
Group [H10D 30/4735](#) is incomplete pending reclassification of documents from group [H10D 30/4738](#).
Groups [H10D 30/4738](#) and [H10D 30/4735](#) should be considered in order to perform a complete search.
- Q H10D 30/4738 . . . {having multiple donor layers}
- WARNING
Group [H10D 30/4738](#) is impacted by reclassification into group [H10D 30/4735](#).
Groups [H10D 30/4738](#) and [H10D 30/4735](#) should be considered in order to perform a complete search.
- N H10D 30/474 . . . {having multiple parallel 2D charge carrier gas channels}
- N H10D 30/475 . . . {having wider bandgap layer formed on top of lower bandgap active layer, e.g. undoped barrier HEMTs such as i-AlGaIn/GaN HEMTs}
- N H10D 30/4755 . . . {having wide bandgap charge-carrier supplying layers, e.g. modulation doped HEMTs such as n-AlGaAs/GaAs HEMTs}
- N H10D 30/476 . . . {having gate trenches interrupting the 2D charge carrier gas channels, e.g. hybrid MOS-HEMTs}
- Q H10D 30/477 . . . {Vertical HEMTs or vertical HHMTs}
- WARNING
Group [H10D 30/477](#) is impacted by reclassification into group [H10D 30/485](#).
Groups [H10D 30/477](#) and [H10D 30/485](#) should be considered in order to perform a complete search.
- Q H10D 30/478 . . . {the 2D charge carrier gas being at least partially not parallel to a main surface of the semiconductor body}
- WARNING
Group [H10D 30/478](#) is impacted by reclassification into group [H10D 30/485](#).
Groups [H10D 30/478](#) and [H10D 30/485](#) should be considered in order to perform a complete search.
- N H10D 30/481 . . . {FETs having two-dimensional material channels, e.g. transition metal dichalcogenide [TMD] FETs}
- WARNING
Group [H10D 30/481](#) is incomplete pending reclassification of documents from groups [H10D 30/47](#) and [H10D 30/6741](#).
Groups [H10D 30/47](#), [H10D 30/6741](#) and [H10D 30/481](#) should be considered in order to perform a complete search.
- N H10D 30/485 . . . {Vertical FETs having two-dimensional material channels}
- WARNING
Group [H10D 30/485](#) is incomplete pending reclassification of documents from groups [H10D 30/477](#), [H10D 30/478](#) and [H10D 30/6741](#).
All groups listed in this Warning should be considered in order to perform a complete search.

- N H10D 30/501
- {FETs having stacked nanowire, nanosheet or nanoribbon channels}
- WARNING
Groups [H10D 30/501](#), [H10D 30/502](#), [H10D 30/507](#), [H10D 30/508](#) and [H10D 30/509](#) are incomplete pending reclassification of documents from groups [H10D 30/43](#), [H10D 30/47](#), [H10D 30/62](#), [H10D 30/6211](#), [H10D 30/6217](#), [H10D 30/6218](#), [H10D 30/6219](#), [H10D 30/6733](#), [H10D 30/6734](#), [H10D 30/6735](#), [H10D 30/6748](#) and [H10D 30/6757](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N H10D 30/502
- • {characterised by the stacked channels}
- N H10D 30/503
- • • {having non-rectangular cross-sections}
- WARNING
Group [H10D 30/503](#) is incomplete pending reclassification of documents from groups [H10D 30/43](#), [H10D 30/47](#), [H10D 30/62](#), [H10D 30/6211](#), [H10D 30/6212](#), [H10D 30/6213](#), [H10D 30/6217](#), [H10D 30/6218](#), [H10D 30/6219](#), [H10D 30/6733](#), [H10D 30/6734](#), [H10D 30/6735](#), [H10D 30/6748](#) and [H10D 30/6757](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N H10D 30/504
- • • {wherein the stacked channels have different properties}
- WARNING
Groups [H10D 30/504](#) and [H10D 30/506](#) are incomplete pending reclassification of documents from groups [H10D 30/43](#), [H10D 30/47](#), [H10D 30/62](#), [H10D 30/6211](#), [H10D 30/6212](#), [H10D 30/6213](#), [H10D 30/6217](#), [H10D 30/6218](#), [H10D 30/6219](#), [H10D 30/6733](#), [H10D 30/6734](#), [H10D 30/6735](#), [H10D 30/6748](#) and [H10D 30/6757](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N H10D 30/506
- • • • {having different thicknesses, sizes or shapes}
- N H10D 30/507
- • {characterised by inner spacers between adjacent channels}
- N H10D 30/508
- • • {characterised by the relative sizes, shapes or dispositions of the inner spacers}
- N H10D 30/509
- • • {characterised by the material of the inner spacers}
- N H10D 30/60
- Insulated-gate field-effect transistors [IGFET] ([H10D 30/40](#) takes precedence)
- N H10D 30/601
- • {having lightly-doped drain or source extensions, e.g. LDD IGFETs or DDD IGFETs (lightly doped source or drain extensions for TFTs [H10D 30/6715](#))}
- Q H10D 30/603
- • • {having asymmetry in the channel direction, e.g. lateral high-voltage MISFETs having drain offset region or extended drain IGFETs [EDMOS]}
- WARNING
Group [H10D 30/603](#) is impacted by reclassification into group [H10D 30/605](#).
Groups [H10D 30/603](#) and [H10D 30/605](#) should be considered in order to perform a complete search.
- N H10D 30/605
- • • {having significant overlap between the lightly-doped extensions and the gate electrode}
- WARNING
Group [H10D 30/605](#) is incomplete pending reclassification of documents from groups [H10D 30/603](#) and [H10D 30/608](#).

Groups [H10D 30/603](#), [H10D 30/608](#) and [H10D 30/605](#) should be considered in order to perform a complete search.

- Q H10D 30/608 • • • {having non-planar bodies, e.g. having recessed gate electrodes}

WARNING

Group [H10D 30/608](#) is impacted by reclassification into group [H10D 30/605](#).

Groups [H10D 30/608](#) and [H10D 30/605](#) should be considered in order to perform a complete search.

- N H10D 30/611 • • {having multiple independently-addressable gate electrodes influencing the same channel (FinFETs having multiple distinct gate electrodes [H10D 30/6215](#); multi-gate TFT [H10D 30/6733](#))}

- N H10D 30/615 • • • {comprising a MOS gate electrode and at least one non-MOS gate electrode}

- Q H10D 30/62 • • Fin field-effect transistors [FinFET]

WARNING

Group [H10D 30/62](#) is impacted by reclassification into groups [H10D 30/501](#) - [H10D 30/509](#).

Groups [H10D 30/62](#) and [H10D 30/501](#) - [H10D 30/509](#) should be considered in order to perform a complete search.

- Q H10D 30/6211 • • • {having fin-shaped semiconductor bodies integral with the bulk semiconductor substrates}

WARNING

Group [H10D 30/6211](#) is impacted by reclassification into groups [H10D 30/501](#) - [H10D 30/509](#).

Groups [H10D 30/6211](#) and [H10D 30/501](#) - [H10D 30/509](#) should be considered in order to perform a complete search.

- Q H10D 30/6212 • • • {having fin-shaped semiconductor bodies having non-rectangular cross-sections}

WARNING

Group [H10D 30/6212](#) is impacted by reclassification into groups [H10D 30/503](#) and [H10D 30/504](#) - [H10D 30/506](#).

Groups [H10D 30/6212](#), [H10D 30/503](#) and [H10D 30/504](#) - [H10D 30/506](#) should be considered in order to perform a complete search.

- Q H10D 30/6213 • • • • {having rounded corners}

WARNING

Group [H10D 30/6213](#) is impacted by reclassification into groups [H10D 30/503](#) and [H10D 30/504](#) - [H10D 30/506](#).

Groups [H10D 30/6213](#), [H10D 30/503](#) and [H10D 30/504](#) - [H10D 30/506](#) should be considered in order to perform a complete search.

- Q H10D 30/6215 • • • {having multiple independently-addressable gate electrodes}

WARNING

Group [H10D 30/6215](#) is impacted by reclassification into group [H10D 30/6217](#).

Groups [H10D 30/6215](#) and [H10D 30/6217](#) should be considered in order to perform a complete search.

- Q H10D 30/6217 . . . {having non-uniform gate electrodes, e.g. gate conductors having varying doping}
WARNING
 Group [H10D 30/6217](#) is incomplete pending reclassification of documents from group [H10D 30/6215](#).
 Group [H10D 30/6217](#) is also impacted by reclassification into groups [H10D 30/501](#) - [H10D 30/509](#).
 Groups [H10D 30/6215](#), [H10D 30/6217](#) and [H10D 30/501](#) - [H10D 30/509](#) should be considered in order to perform a complete search.
- Q H10D 30/6218 . . . {of the accumulation type}
WARNING
 Group [H10D 30/6218](#) is impacted by reclassification into groups [H10D 30/501](#) - [H10D 30/509](#).
 Groups [H10D 30/6218](#) and [H10D 30/501](#) - [H10D 30/509](#) should be considered in order to perform a complete search.
- Q H10D 30/6219 . . . {characterised by the source or drain electrodes}
WARNING
 Group [H10D 30/6219](#) is impacted by reclassification into groups [H10D 30/501](#) - [H10D 30/509](#).
 Groups [H10D 30/6219](#) and [H10D 30/501](#) - [H10D 30/509](#) should be considered in order to perform a complete search.
- N H10D 30/63 . . Vertical IGFETs ([H10D 30/66](#) {, [H10D 30/6728](#), [H10D 30/689](#), [H10D 30/693](#)} take precedence)
- N H10D 30/635 . . . {having no inversion channels, e.g. vertical accumulation channel FETs [ACCUFET] or normally-on vertical IGFETs}
- N H10D 30/637 . . {Lateral IGFETs having no inversion channels, e.g. buried channel lateral IGFETs, normally-on lateral IGFETs or depletion-mode lateral IGFETs}
- Q H10D 30/64 . . Double-diffused metal-oxide semiconductor [DMOS] FETs
WARNING
 Group [H10D 30/64](#) is impacted by reclassification into groups [H10D 30/645](#) and [H10D 84/101](#).
 Groups [H10D 30/64](#), [H10D 30/645](#) and [H10D 84/101](#) should be considered in order to perform a complete search.
- N H10D 30/645 . . . {Bidirectional devices}
WARNING
 Group [H10D 30/645](#) is incomplete pending reclassification of documents from group [H10D 30/64](#).
 Groups [H10D 30/64](#) and [H10D 30/645](#) should be considered in order to perform a complete search.
- N H10D 30/65 . . . Lateral DMOS [LDMOS] FETs
- N H10D 30/655 . . . {having edge termination structures}
- N H10D 30/657 . . . {having substrates comprising insulating layers, e.g. SOI-LDMOS transistors}
- N H10D 30/658 . . . {having trench gate electrodes}
- N H10D 30/659 . . . {having voltage-sensing or current-sensing structures, e.g. emulator sections or overcurrent sensing cells}

- Q H10D 30/66 . . . Vertical DMOS [VDMOS] FETs
WARNING
 Group [H10D 30/66](#) is impacted by reclassification into group [H10D 30/662](#). Groups [H10D 30/66](#) and [H10D 30/662](#) should be considered in order to perform a complete search.
- N H10D 30/662 . . . {having a drift region having a doping concentration that is higher between adjacent body regions relative to other parts of the drift region}
WARNING
 Group [H10D 30/662](#) is incomplete pending reclassification of documents from group [H10D 30/66](#). Groups [H10D 30/66](#) and [H10D 30/662](#) should be considered in order to perform a complete search.
- N H10D 30/663 . . . {having both source contacts and drain contacts on the same surface, i.e. up-drain VDMOS}
- N H10D 30/664 . . . {Inverted VDMOS transistors, i.e. source-down VDMOS transistors}
- N H10D 30/665 . . . {having edge termination structures}
- N H10D 30/667 . . . {having substrates comprising insulating layers, e.g. SOI-VDMOS transistors}
- N H10D 30/668 . . . {having trench gate electrodes, e.g. UMOS transistors}
- N H10D 30/669 . . . {having voltage-sensing or current-sensing structures, e.g. emulator sections or overcurrent sensing cells}
- N H10D 30/67 . . Thin-film transistors [TFT] {(Stacked nanowire, nanosheet or nanoribbon FETs [H10D 30/501](#))}
- N H10D 30/6704 . . {having supplementary regions or layers in the thin films or in the insulated bulk substrates for controlling properties of the device}
WARNING
 Group [H10D 30/6704](#) is incomplete pending reclassification of documents from group [H10D 30/6728](#). Groups [H10D 30/6728](#) and [H10D 30/6704](#) should be considered in order to perform a complete search.
- N H10D 30/6706 . . . {for preventing leakage current (TFTs characterised by the properties of the source or drain [H10D 30/6713](#))}
- N H10D 30/6708 . . . {for preventing the kink effect or the snapback effect, e.g. discharging the minority carriers of the channel region for preventing bipolar effect}
- N H10D 30/6711 . . . {by using electrodes contacting the supplementary regions or layers}
- N H10D 30/6713 . . . {characterised by the properties of the source or drain regions, e.g. compositions or sectional shapes}
- N H10D 30/6715 . . . {characterised by the doping profiles, e.g. having lightly-doped source or drain extensions}
- N H10D 30/6717 . . . {the source and the drain regions being asymmetrical}
- N H10D 30/6719 . . . {having significant overlap between the lightly-doped drains and the gate electrodes, e.g. gate-overlapped LDD [GOLDD] TFTs}
- N H10D 30/6721 . . . {having lightly-doped extensions consisting of multiple lightly doped zones or having non-homogeneous dopant distributions, e.g. graded LDD}
- N H10D 30/6723 . . . {having light shields}
- N H10D 30/6725 . . . {having supplementary regions or layers for improving the flatness of the device}
- N H10D 30/6727 . . . {having source or drain regions connected to bulk conducting substrates}

- Q H10D 30/6728 . . . {Vertical TFTs}
- WARNING
Group [H10D 30/6728](#) is impacted by reclassification into groups [H10D 30/6704](#) and [H10D 30/674](#).
Groups [H10D 30/6728](#), [H10D 30/6704](#) and [H10D 30/674](#) should be considered in order to perform a complete search.
- N H10D 30/6729 . . . {characterised by the electrodes}
- N H10D 30/673 . . . {characterised by the shapes, relative sizes or dispositions of the gate electrodes}
- N H10D 30/6731 {Top-gate only TFTs}
- N H10D 30/6732 {Bottom-gate only TFTs}
- Q H10D 30/6733 {Multi-gate TFTs}
- WARNING
Group [H10D 30/6733](#) is impacted by reclassification into groups [H10D 30/501](#) - [H10D 30/509](#) and [H10D 30/674](#).
Groups [H10D 30/6733](#), [H10D 30/501](#) - [H10D 30/509](#) and [H10D 30/674](#) should be considered in order to perform a complete search.
- Q H10D 30/6734 {having gate electrodes arranged on both top and bottom sides of the channel, e.g. dual-gate TFTs}
- WARNING
Group [H10D 30/6734](#) is impacted by reclassification into groups [H10D 30/501](#) - [H10D 30/509](#) and [H10D 30/674](#).
Groups [H10D 30/6734](#), [H10D 30/501](#) - [H10D 30/509](#) and [H10D 30/674](#) should be considered in order to perform a complete search.
- Q H10D 30/6735 {having gates fully surrounding the channels, e.g. gate-all-around}
- WARNING
Group [H10D 30/6735](#) is impacted by reclassification into groups [H10D 30/501](#) - [H10D 30/509](#).
Groups [H10D 30/6735](#) and [H10D 30/501](#) - [H10D 30/509](#) should be considered in order to perform a complete search.
- N H10D 30/6736 {characterised by the shape of gate insulators}
- N H10D 30/6737 {characterised by the electrode materials}
- N H10D 30/6738 {Schottky barrier electrodes}
- N H10D 30/6739 {Conductor-insulator-semiconductor electrodes}
- N H10D 30/674 . . . {characterised by the active materials}
- WARNING
Group [H10D 30/674](#) is incomplete pending reclassification of documents from groups [H10D 30/6728](#), [H10D 30/6733](#), [H10D 30/6734](#) and [H10D 30/6757](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- Q H10D 30/6741 {Group IV materials, e.g. germanium or silicon carbide (TFTs having oxide semiconductors [H10D 30/6755](#))}
- WARNING
Group [H10D 30/6741](#) is impacted by reclassification into groups [H10D 30/481](#) and [H10D 30/485](#).

Groups [H10D 30/6741](#), [H10D 30/481](#) and [H10D 30/485](#) should be considered in order to perform a complete search.

- N H10D 30/6743 {Silicon}
- N H10D 30/6744 {Monocrystalline silicon}
- N H10D 30/6745 {Polycrystalline or microcrystalline silicon}
- N H10D 30/6746 {Amorphous silicon}
- Q H10D 30/6748 {having a multilayer structure or superlattice structure}

WARNING

Group [H10D 30/6748](#) is impacted by reclassification into groups [H10D 30/501](#) - [H10D 30/509](#).

Groups [H10D 30/6748](#) and [H10D 30/501](#) - [H10D 30/509](#) should be considered in order to perform a complete search.

- N H10D 30/675 {Group III-V materials, Group II-VI materials, Group IV-VI materials, selenium or tellurium}
- N H10D 30/6755 {Oxide semiconductors, e.g. zinc oxide, copper aluminium oxide or cadmium stannate}
- N H10D 30/6756 {Amorphous oxide semiconductors}
- Q H10D 30/6757 . . . {characterised by the structure of the channel, e.g. transverse or longitudinal shape or doping profile (TFTs having channel structures for preventing kink or snapback effects [H10D 30/6708](#); TFTs having lightly-doped source or drain extensions [H10D 30/6715](#))}

WARNING

Group [H10D 30/6757](#) is impacted by reclassification into groups [H10D 30/501](#) - [H10D 30/509](#) and [H10D 30/674](#).

Groups [H10D 30/6757](#), [H10D 30/501](#) - [H10D 30/509](#) and [H10D 30/674](#) should be considered in order to perform a complete search.

- N H10D 30/6758 . . . {characterised by the insulating substrates}
- N H10D 30/6759 {Silicon-on-sapphire [SOS] substrates}
- N H10D 30/68 . . . Floating-gate IGFETs

WARNING

Group [H10D 30/68](#) is incomplete pending reclassification of documents from group [H10D 30/701](#).

Groups [H10D 30/701](#) and [H10D 30/68](#) should be considered in order to perform a complete search.

- N H10D 30/681 . . . {having only two programming levels (Floating gate IGFETs programmable by two single electrons [H10D 30/688](#))}
- N H10D 30/682 {programmed by injection of carriers through a conductive insulator, e.g. Poole-Frankel conduction}
- N H10D 30/683 {programmed by tunnelling of carriers, e.g. Fowler-Nordheim tunnelling}
- N H10D 30/684 {programmed by hot carrier injection}
- N H10D 30/685 {from the channel}
- N H10D 30/686 {using hot carriers produced by avalanche breakdown of PN junctions, e.g. floating gate avalanche injection MOS [FAMOS]}
- N H10D 30/687 . . . {having more than two programming levels}
- N H10D 30/688 . . . {programmed by two single electrons}
- N H10D 30/689 . . . {Vertical floating-gate IGFETs}

N	H10D 30/6891	<ul style="list-style-type: none"> • • • {characterised by the shapes, relative sizes or dispositions of the floating gate electrode}
N	H10D 30/6892	<ul style="list-style-type: none"> • • • • {having at least one additional gate other than the floating gate and the control gate, e.g. program gate, erase gate or select gate}
N	H10D 30/6893	<ul style="list-style-type: none"> • • • • {wherein the floating gate has multiple non-connected parts, e.g. multi-particle floating gate}
N	H10D 30/6894	<ul style="list-style-type: none"> • • • • {having one gate at least partly in a trench}
N	H10D 30/69	<ul style="list-style-type: none"> • • IGFETs having charge trapping gate insulators, e.g. MNOS transistors
N	H10D 30/691	<ul style="list-style-type: none"> • • • {having more than two programming levels}
N	H10D 30/693	<ul style="list-style-type: none"> • • • {Vertical IGFETs having charge trapping gate insulators}
N	H10D 30/694	<ul style="list-style-type: none"> • • • {characterised by the shapes, relative sizes or dispositions of the gate electrodes}
N	H10D 30/696	<ul style="list-style-type: none"> • • • • {having at least one additional gate, e.g. program gate, erase gate or select gate}
N	H10D 30/697	<ul style="list-style-type: none"> • • • • {having trapping at multiple separated sites, e.g. multi-particles trapping sites}
N	H10D 30/699	<ul style="list-style-type: none"> • • • • {having the gate at least partly formed in a trench}
Q	H10D 30/701	<ul style="list-style-type: none"> • • {IGFETs having ferroelectric gate insulators, e.g. ferroelectric FETs} <p><u>WARNING</u> Group H10D 30/701 is impacted by reclassification into group H10D 30/68. Groups H10D 30/701 and H10D 30/68 should be considered in order to perform a complete search.</p>
N	H10D 30/711	<ul style="list-style-type: none"> • • {having floating bodies}
N	H10D 30/721	<ul style="list-style-type: none"> • • {having a gate-to-body connection, i.e. bulk dynamic threshold voltage IGFET (TFTs having gate-to-body connection H10D 30/6708)}
Q	H10D 30/751	<ul style="list-style-type: none"> • • {having composition variations in the channel regions} <p><u>WARNING</u> Group H10D 30/751 is impacted by reclassification into group H10D 30/798. Groups H10D 30/751 and H10D 30/798 should be considered in order to perform a complete search.</p>
N	H10D 30/791	<ul style="list-style-type: none"> • • {Arrangements for exerting mechanical stress on the crystal lattice of the channel regions}
N	H10D 30/792	<ul style="list-style-type: none"> • • • {comprising applied insulating layers, e.g. stress liners}
N	H10D 30/794	<ul style="list-style-type: none"> • • • {comprising conductive materials, e.g. silicided source, drain or gate electrodes}
N	H10D 30/795	<ul style="list-style-type: none"> • • • {being in lateral device isolation regions, e.g. STI}
N	H10D 30/796	<ul style="list-style-type: none"> • • • {having memorised stress for introducing strain in the channel regions, e.g. recrystallised polysilicon gates}
N	H10D 30/797	<ul style="list-style-type: none"> • • • {being in source or drain regions, e.g. SiGe source or drain}
N	H10D 30/798	<ul style="list-style-type: none"> • • • {being provided in or under the channel regions} <p><u>WARNING</u> Group H10D 30/798 is incomplete pending reclassification of documents from group H10D 30/751. Groups H10D 30/751 and H10D 30/798 should be considered in order to perform a complete search.</p>
N	H10D 30/80	<ul style="list-style-type: none"> • FETs having rectifying junction gate electrodes (H10D 30/40 takes precedence)
N	H10D 30/801	<ul style="list-style-type: none"> • • {FETs having heterojunction gate electrodes}

- N H10D 30/803 . . . {Programmable transistors, e.g. having charge-trapping quantum well}
- N H10D 30/83 . . FETs having PN junction gate electrodes
- N H10D 30/831 . . . {Vertical FETs having PN junction gate electrodes (Vertical SIT [H10D 30/202](#))}
- N H10D 30/832 . . . {Thin-film junction FETs [JFET]}
- N H10D 30/87 . . FETs having Schottky gate electrodes, e.g. metal-semiconductor FETs [MESFET] {(FETs having Schottky contact on top of heterojunction gate [H10D 30/801](#))}
- N H10D 30/871 . . . {Vertical FETs having Schottky gate electrodes (Vertical SIT or PBT [H10D 30/202](#))}
- N H10D 30/873 . . . {having multiple gate electrodes}
- N H10D 30/875 . . . {having thin-film semiconductor bodies}
- N H10D 30/877 . . . {having recessed gate electrodes}

N H10D 44/00**Charge transfer devices**NOTE

In this group, when the manufacture or treatment of a device is determined to be novel and non-obvious, the device itself is also classified.

- N H10D 44/01 . Manufacture or treatment
- N H10D 44/041 . . {having insulated gates}
- N H10D 44/061 . . {having Schottky gates}
- N H10D 44/40 . Charge-coupled devices [CCD]
- N H10D 44/45 . . having field effect produced by insulated gate electrodes
- N H10D 44/452 . . . {Input structures}
- N H10D 44/454 . . . {Output structures}
- N H10D 44/456 . . . {Structures for regeneration, refreshing or leakage compensation}
- N H10D 44/462 . . . {Buried-channel CCD}
- N H10D 44/464 {Two-phase CCD}
- N H10D 44/466 {Three-phase CCD}
- N H10D 44/468 {Four-phase CCD}
- N H10D 44/472 . . . {Surface-channel CCD}
- N H10D 44/474 {Two-phase CCD}
- N H10D 44/476 {Three-phase CCD}
- N H10D 44/478 {Four-phase CCD}

N H10D 48/00**Individual devices not covered by groups [H10D 1/00](#) - [H10D 44/00](#)**NOTE

In this group, when the manufacture or treatment of a device is determined to be novel and non-obvious, the device itself is also classified.

WARNING

Group [H10D 48/00](#) is incomplete pending reclassification of documents from group [H10D 48/30](#).

Groups [H10D 48/30](#) and [H10D 48/00](#) should be considered in order to perform a complete search.

- N H10D 48/01 . Manufacture or treatment

- Q H10D 48/021
- • {of two-electrode devices}
- WARNING
 Group [H10D 48/021](#) is incomplete pending reclassification of documents from group [H10D 8/051](#).
 Group [H10D 48/021](#) is also impacted by reclassification into groups [H10D 1/025](#), [H10D 1/045](#) - [H10D 1/048](#) and [H10D 8/01](#) - [H10D 8/055](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- Q H10D 48/031
- • {of three-or-more electrode devices}
- WARNING
 Group [H10D 48/031](#) is impacted by reclassification into groups [H10D 10/01](#) - [H10D 10/061](#), [H10D 12/01](#) - [H10D 12/038](#) and [H10D 18/01](#) - [H10D 18/031](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- N H10D 48/032
- • • {of unipolar transistors having ohmic electrodes on emitter-like, base-like, and collector-like regions, e.g. hot electron transistors [HET], metal base transistors [MBT], resonant tunneling transistors [RTT], bulk barrier transistors [BBT], planar doped barrier transistors [PDBT] or charge injection transistors [CHINT]}
- N H10D 48/04
- • of devices having bodies comprising selenium or tellurium in uncombined form
- N H10D 48/042
- • • Preparation of foundation plates
- N H10D 48/043
- • • Preliminary treatment of the selenium or tellurium, its application to foundation plates or the subsequent treatment of the combination
- N H10D 48/0431
- • • • {Application of the selenium or tellurium to the foundation plate}
- N H10D 48/044
- • • • Conversion of the selenium or tellurium to the conductive state
- N H10D 48/045
- • • • Treatment of the surface of the selenium or tellurium layer after having been made conductive
- N H10D 48/046
- • • • Provision of discrete insulating layers
- N H10D 48/047
- • • Application of an electrode to the exposed surface of the selenium or tellurium after the selenium or tellurium has been applied to foundation plates
- N H10D 48/048
- • • Treatment of the complete device, e.g. by electroforming to form a barrier
- N H10D 48/049
- • • • Ageing
- N H10D 48/07
- • of devices having bodies comprising cuprous oxide [Cu₂O] or cuprous iodide [CuI]
- N H10D 48/071
- • • {Preparation of the foundation plate, preliminary treatment oxidation of the foundation plate or reduction treatment}
- N H10D 48/073
- • • • {Preliminary treatment of the foundation plate}
- N H10D 48/074
- • • • {Oxidation and subsequent heat treatment of the foundation plate (Reduction of copper oxide [H10D 48/075](#))}
- N H10D 48/075
- • • • {Reduction of the copper oxide or treatment of the oxide layer}
- N H10D 48/076
- • • • {Application of a non-genetic conductive layer}
- N H10D 48/078
- • • {Treatment of the complete device, e.g. electroforming or ageing}
- Q H10D 48/30
- Devices controlled by electric currents or voltages
- WARNING
 Group [H10D 48/30](#) is impacted by reclassification into group [H10D 48/00](#).
 Groups [H10D 48/30](#) and [H10D 48/00](#) should be considered in order to perform a complete search.

- N H10D 48/32
 - • Devices controlled by only the electric current supplied, or only the electric potential applied, to an electrode which does not carry the current to be rectified, amplified or switched
- N H10D 48/34
 - • • Bipolar devices
- N H10D 48/341
 - • • • {Unijunction transistors, i.e. double base diodes}
- N H10D 48/345
 - • • • {Bipolar transistors having ohmic electrodes on emitter-like, base-like, and collector-like regions}
- N H10D 48/36
 - • • Unipolar devices
- N H10D 48/362
 - • • • {Unipolar transistors having ohmic electrodes on emitter-like, base-like, and collector-like regions, e.g. hot electron transistors [HET], metal base transistors [MBT], resonant tunnelling transistors [RTT], bulk barrier transistors [BBT], planar doped barrier transistors [PDBT] or charge injection transistors [CHINT]}
- N H10D 48/366
 - • • {Multistable devices; Devices having two or more distinct operating states}
- N H10D 48/38
 - • Devices controlled only by variation of the electric current supplied, or only the electric potential applied, to one or more of the electrodes carrying the current to be rectified, amplified, oscillated or switched

WARNING

Group [H10D 48/38](#) is incomplete pending reclassification of documents from group [H10D 1/40](#).

Groups [H10D 1/40](#) and [H10D 48/38](#) should be considered in order to perform a complete search.

- N H10D 48/381
 - • • {Multistable devices; Devices having two or more distinct operating states}
- Q H10D 48/383
 - {Quantum effect devices, e.g. of devices using quantum reflection, diffraction or interference effects}

WARNING

Group [H10D 48/383](#) is impacted by reclassification into group [H10D 48/3835](#).

Groups [H10D 48/383](#) and [H10D 48/3835](#) should be considered in order to perform a complete search.

- N H10D 48/3835
 - • {Semiconductor qubit devices comprising a plurality of quantum mechanically interacting semiconductor quantum dots, e.g. Loss-DiVincenzo spin qubits}

WARNING

Group [H10D 48/3835](#) is incomplete pending reclassification of documents from group [H10D 48/383](#).

Groups [H10D 48/383](#) and [H10D 48/3835](#) should be considered in order to perform a complete search.

- N H10D 48/385
 - {Devices using spin-polarised carriers}
- N H10D 48/387
 - {Devices controllable only by the variation of applied heat}
- N H10D 48/40
 - Devices controlled by magnetic fields
- N H10D 48/50
 - Devices controlled by mechanical forces, e.g. pressure

N H10D 62/00 -
H10D 64/00

Constructional details

Q H10D 62/00

Semiconductor bodies, or regions thereof, of devices having potential barriers

WARNING

Group [H10D 62/00](#) is impacted by reclassification into group [H10D 62/01](#).

Groups [H10D 62/00](#) and [H10D 62/01](#) should be considered in order to perform a complete search.

- N H10D 62/01
- {Manufacture or treatment}
- WARNING
 Group [H10D 62/01](#) is incomplete pending reclassification of documents from group [H10D 62/00](#).
 Groups [H10D 62/00](#) and [H10D 62/01](#) should be considered in order to perform a complete search.
- N H10D 62/021
- • {Forming source or drain recesses by etching e.g. recessing by etching and then refilling}
- N H10D 62/051
- • {Forming charge compensation regions, e.g. superjunctions}
- WARNING
 Groups [H10D 62/051](#) - [H10D 62/058](#) are incomplete pending reclassification of documents from group [H10D 62/111](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- N H10D 62/052
- • • {by forming stacked epitaxial layers}
- N H10D 62/054
- • • {by high energy implantations in bulk semiconductor bodies, e.g. forming pillars}
- N H10D 62/056
- • • {by out-diffusing dopants from applied layers}
- N H10D 62/058
- • • {by using trenches, e.g. implanting into sidewalls of trenches or refilling trenches}
- Q H10D 62/10
- Shapes, relative sizes or dispositions of the regions of the semiconductor bodies; Shapes of the semiconductor bodies
- WARNING
 Group [H10D 62/10](#) is impacted by reclassification into groups [H10D 62/128](#) and [H10D 62/129](#).
 Groups [H10D 62/10](#), [H10D 62/128](#) and [H10D 62/129](#) should be considered in order to perform a complete search.
- N H10D 62/102
- • {Constructional design considerations for preventing surface leakage or controlling electric field concentration}
- N H10D 62/103
- • • {for increasing or controlling the breakdown voltage of reverse-biased devices}
- N H10D 62/104
- • • • {having particular shapes of the bodies at or near reverse-biased junctions, e.g. having bevels or moats}
- N H10D 62/105
- • • • {by having particular doping profiles, shapes or arrangements of PN junctions; by having supplementary regions, e.g. junction termination extension [JTE] (IGFETs having LDD or drain extension regions [H10D 30/601](#))}
- N H10D 62/106
- • • • • {having supplementary regions doped oppositely to or in rectifying contact with regions of the semiconductor bodies, e.g. guard rings with PN or Schottky junctions}
- N H10D 62/107
- • • • • {Buried supplementary regions, e.g. buried guard rings (multi-RESURF [H10D 62/111](#))}
- N H10D 62/108
- • • • • {having localised breakdown regions, e.g. built-in avalanching regions (in self-protected thyristors [H10D 18/211](#))}
- N H10D 62/109
- • • • • {Reduced surface field [RESURF] PN junction structures}

Q	H10D 62/111	<ul style="list-style-type: none"> • • • • {Multiple RESURF structures, e.g. double RESURF or 3D-RESURF structures} <p><u>WARNING</u> Group H10D 62/111 is impacted by reclassification into groups H10D 62/051 - H10D 62/058. Groups H10D 62/111 and H10D 62/051 - H10D 62/058 should be considered in order to perform a complete search.</p>
N	H10D 62/112	<ul style="list-style-type: none"> • • {for preventing surface leakage due to surface inversion layers, e.g. by using channel stoppers}
N	H10D 62/113	<ul style="list-style-type: none"> • • {Isolations within a component, i.e. internal isolations}
N	H10D 62/114	<ul style="list-style-type: none"> • • • {PN junction isolations}
N	H10D 62/115	<ul style="list-style-type: none"> • • • {Dielectric isolations, e.g. air gaps}
N	H10D 62/116	<ul style="list-style-type: none"> • • • • {adjoining the input or output regions of field-effect devices, e.g. adjoining source or drain regions}
N	H10D 62/117	<ul style="list-style-type: none"> • • {Shapes of semiconductor bodies}
N	H10D 62/118	<ul style="list-style-type: none"> • • • {Nanostructure semiconductor bodies}
N	H10D 62/119	<ul style="list-style-type: none"> • • • • {Nanowire, nanosheet or nanotube semiconductor bodies}
N	H10D 62/121	<ul style="list-style-type: none"> • • • • • {oriented parallel to substrates}
N	H10D 62/122	<ul style="list-style-type: none"> • • • • • {oriented at angles to substrates, e.g. perpendicular to substrates}
N	H10D 62/123	<ul style="list-style-type: none"> • • • • • {comprising junctions}
N	H10D 62/124	<ul style="list-style-type: none"> • • {Shapes, relative sizes or dispositions of the regions of semiconductor bodies or of junctions between the regions}
N	H10D 62/125	<ul style="list-style-type: none"> • • • {Shapes of junctions between the regions}
N	H10D 62/126	<ul style="list-style-type: none"> • • • {Top-view geometrical layouts of the regions or the junctions}
N	H10D 62/127	<ul style="list-style-type: none"> • • • • {of cellular field-effect devices, e.g. multicellular DMOS transistors or IGBTs}
N	H10D 62/128	<ul style="list-style-type: none"> • • {Anode regions of diodes} <p><u>WARNING</u> Group H10D 62/128 is incomplete pending reclassification of documents from group H10D 62/10. Groups H10D 62/10 and H10D 62/128 should be considered in order to perform a complete search.</p>
N	H10D 62/129	<ul style="list-style-type: none"> • • {Cathode regions of diodes} <p><u>WARNING</u> Group H10D 62/129 is incomplete pending reclassification of documents from group H10D 62/10. Groups H10D 62/10 and H10D 62/129 should be considered in order to perform a complete search.</p>
N	H10D 62/13	<ul style="list-style-type: none"> • • Semiconductor regions connected to electrodes carrying current to be rectified, amplified or switched, e.g. source or drain regions <p><u>NOTE</u> This group <u>covers</u> only semiconductor regions for devices that comprise three or more electrodes.</p>
N	H10D 62/133	<ul style="list-style-type: none"> • • • {Emitter regions of BJTs}
N	H10D 62/134	<ul style="list-style-type: none"> • • • • {of lateral BJTs}
N	H10D 62/135	<ul style="list-style-type: none"> • • • • {Non-interconnected multi-emitter structures}

N	H10D 62/136	. . . {of heterojunction BJTs (vertical heterojunction BJTs having one or more non-monocrystalline Group IV elements H10D 10/861)}
N	H10D 62/137	. . . {Collector regions of BJTs}
N	H10D 62/138	. . . {Pedestal collectors}
Q	H10D 62/141	. . . {Anode or cathode regions of thyristors; Collector or emitter regions of gated bipolar-mode devices, e.g. of IGBTs}
		<u>WARNING</u> Group H10D 62/141 is impacted by reclassification into group H10D 62/145 . Groups H10D 62/141 and H10D 62/145 should be considered in order to perform a complete search.
N	H10D 62/142	. . . {Anode regions of thyristors or collector regions of gated bipolar-mode devices}
N	H10D 62/145	. . . {Emitter regions of IGBTs}
		<u>WARNING</u> Group H10D 62/145 is incomplete pending reclassification of documents from group H10D 62/141 . Groups H10D 62/141 and H10D 62/145 should be considered in order to perform a complete search.
N	H10D 62/148	. . . {Cathode regions of thyristors}
N	H10D 62/149	. . . {Source or drain regions of field-effect devices}
N	H10D 62/151	. . . {of IGFETs (of IGFETs having LDD or DDD structure H10D 30/601 ; of thin film transistors H10D 30/6713)}
Q	H10D 62/152	. . . {Source regions of DMOS transistors}
		<u>WARNING</u> Group H10D 62/152 is impacted by reclassification into group H10D 62/156 . Groups H10D 62/152 and H10D 62/156 should be considered in order to perform a complete search.
N	H10D 62/153	. . . {Impurity concentrations or distributions}
N	H10D 62/154	. . . {Dispositions}
N	H10D 62/155	. . . {Shapes (cell layout of DMOS H10D 62/127)}
N	H10D 62/156	. . . {Drain regions of DMOS transistors}
		<u>WARNING</u> Group H10D 62/156 is incomplete pending reclassification of documents from group H10D 62/152 . Groups H10D 62/152 and H10D 62/156 should be considered in order to perform a complete search.
N	H10D 62/157	. . . {Impurity concentrations or distributions}
N	H10D 62/158	. . . {Dispositions}
N	H10D 62/159	. . . {Shapes}
N	H10D 62/161	. . . {of FETs having Schottky gates}
N	H10D 62/165	. . . {Tunnel injectors}
N	H10D 62/17	. . . Semiconductor regions connected to electrodes not carrying current to be rectified, amplified or switched, e.g. channel regions
N	H10D 62/177	. . . {Base regions of bipolar transistors, e.g. BJTs or IGBTs}
N	H10D 62/184	. . . {of lateral BJTs}

- N H10D 62/192 . . . {Base regions of thyristors}
- N H10D 62/199 {Anode base regions of thyristors}
- N H10D 62/206 {Cathode base regions of thyristors}
- N H10D 62/213 . . . {Channel regions of field-effect devices}
- N H10D 62/221 {of FETs}
- N H10D 62/228 {having delta-doped channels}
- N H10D 62/235 {of IGFETs (IGFETs having buried channels [H10D 30/637](#))}
- N H10D 62/292 {Non-planar channels of IGFETs (resulting from the gate electrode dispositions, e.g. within trenches [H10D 64/512](#))}
- N H10D 62/299 {having lateral doping variations (IGFETs having lightly doped source or drain extensions [H10D 30/601](#))}

WARNING

Group [H10D 62/299](#) is incomplete pending reclassification of documents from groups [H10D 62/314](#) and [H10D 84/0156](#).

Groups [H10D 62/314](#), [H10D 84/0156](#) and [H10D 62/299](#) should be considered in order to perform a complete search.

- N H10D 62/307 {the doping variations being parallel to the channel lengths}
- Q H10D 62/314 {having vertical doping variations (vertical IGFETs [H10D 30/63](#))}

WARNING

Group [H10D 62/314](#) is impacted by reclassification into group [H10D 62/299](#).

Groups [H10D 62/314](#) and [H10D 62/299](#) should be considered in order to perform a complete search.

- N H10D 62/328 {having PN junction gates}
- N H10D 62/335 {of charge-coupled devices}
- N H10D 62/343 . . . {Gate regions of field-effect devices having PN junction gates}
- N H10D 62/351 . . . {Substrate regions of field-effect devices}
- N H10D 62/357 {of FETs}
- N H10D 62/364 {of IGFETs}
- N H10D 62/371 {Inactive supplementary semiconductor regions, e.g. for preventing punch-through, improving capacity effect or leakage current}
- Q H10D 62/378 {Contact regions to the substrate regions}

WARNING

Group [H10D 62/378](#) is impacted by reclassification into group [H10D 64/529](#).

Groups [H10D 62/378](#) and [H10D 64/529](#) should be considered in order to perform a complete search.

- N H10D 62/386 {of charge-coupled devices}
- N H10D 62/393 . . . {Body regions of DMOS transistors or IGBTs (cell layout of DMOS [H10D 62/127](#))}
- N H10D 62/40 . . Crystalline structures
- N H10D 62/402 . . {Amorphous materials}
- N H10D 62/405 . . {Orientations of crystalline planes}
- N H10D 62/50 . . Physical imperfections
- N H10D 62/53 . . the imperfections being within the semiconductor body
- N H10D 62/57 . . the imperfections being on the surface of the semiconductor body, e.g. the body having a roughened surface

- N H10D 62/60 • Impurity distributions or concentrations
- N H10D 62/605 • • {Planar doped, e.g. atomic-plane doped or delta-doped}
- Q H10D 62/80 • characterised by the materials

NOTES

1. When classifying in this group, constituents of a material are considered irrespective of any dopants or other impurities.

2. In this group:

- groups [H10D 62/81](#) - {[H10D 62/8181](#)}, covering quantum or superlattice structures, take precedence over groups [H10D 62/82](#) - {[H10D 62/8281](#)}, covering heterojunctions;
- groups [H10D 62/82](#) - {[H10D 62/8281](#)}, covering heterojunctions, take precedence over groups [H10D 62/83](#) - {[H10D 62/883](#)}, covering other materials;
- {groups [H10D 62/881](#) - [H10D 62/883](#), covering two-dimensional materials, take precedence over groups [H10D 62/83](#) - [H10D 62/875](#), covering other materials.}

WARNING

Group [H10D 62/80](#) is incomplete pending reclassification of documents from group [H10D 62/81](#).

Group [H10D 62/80](#) is also impacted by reclassification into groups [H10D 62/82](#), [H10D 62/8271](#), [H10D 62/8281](#), [H10D 62/871](#), [H10D 62/874](#), [H10D 62/875](#), [H10D 62/881](#) and [H10D 62/883](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- Q H10D 62/81 • • of structures exhibiting quantum-confinement effects, e.g. single quantum wells; of structures having periodic or quasi-periodic potential variation

WARNING

Group [H10D 62/81](#) is impacted by reclassification into group [H10D 62/80](#).

Groups [H10D 62/81](#) and [H10D 62/80](#) should be considered in order to perform a complete search.

- N H10D 62/812 • • • {Single quantum well structures}
- N H10D 62/813 • • • • {Quantum wire structures}
- N H10D 62/814 • • • • {Quantum box structures}
- N H10D 62/815 • • • of structures having periodic or quasi-periodic potential variation, e.g. superlattices or multiple quantum wells [MQW]
- N H10D 62/8161 • • • • {potential variation due to variations in composition or crystallinity, e.g. heterojunction superlattices (lateral superlattices, lateral surface superlattices [H10D 62/8181](#))}
- N H10D 62/8162 • • • • • {having quantum effects only in the vertical direction, i.e. layered structures having quantum effects solely resulting from vertical potential variation}
- N H10D 62/8163 • • • • • • {comprising long-range structurally-disordered materials, e.g. one-dimensional vertical amorphous superlattices}
- N H10D 62/8164 • • • • • • {comprising only semiconductor materials (potential variation in long-range structurally-disordered materials [H10D 62/8163](#))}
- N H10D 62/8171 • • • • {Doping structures, e.g. doping superlattices or nipi superlattices}
- N H10D 62/8181 • • • • {Structures having no potential periodicity in the vertical direction, e.g. lateral superlattices or lateral surface superlattices [LSS]}

- Q H10D 62/82
- • Heterojunctions
- WARNING
- Group [H10D 62/82](#) is incomplete pending reclassification of documents from groups [H10D 62/80](#), [H10D 62/871](#) and [H10D 62/874](#).
Group [H10D 62/82](#) is also impacted by reclassification into groups [H10D 62/8271](#) and [H10D 62/8281](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N H10D 62/822
- • comprising only Group IV materials heterojunctions, e.g. Si/Ge heterojunctions
- WARNING
- Group [H10D 62/822](#) is incomplete pending reclassification of documents from group [H10D 62/83](#).
Groups [H10D 62/83](#) and [H10D 62/822](#) should be considered in order to perform a complete search.
- N H10D 62/824
- • comprising only Group III-V materials heterojunctions, e.g. GaN/AlGaN heterojunctions
- WARNING
- Group [H10D 62/824](#) is incomplete pending reclassification of documents from group [H10D 62/85](#).
Groups [H10D 62/85](#) and [H10D 62/824](#) should be considered in order to perform a complete search.
- N H10D 62/826
- • comprising only Group II-VI materials heterojunctions, e.g. CdTe/HgTe heterojunctions
- WARNING
- Group [H10D 62/826](#) is incomplete pending reclassification of documents from group [H10D 62/86](#).
Groups [H10D 62/86](#) and [H10D 62/826](#) should be considered in order to perform a complete search.
- N H10D 62/8271
- • {comprising only oxide semiconductor materials heterojunctions, e.g. IGZO/IZO}
- WARNING
- Group [H10D 62/8271](#) is incomplete pending reclassification of documents from groups [H10D 62/80](#) and [H10D 62/82](#).
Groups [H10D 62/80](#), [H10D 62/82](#) and [H10D 62/8271](#) should be considered in order to perform a complete search.
- N H10D 62/8281
- • {comprising only transition metal dichalcogenide materials heterojunctions, e.g. MoS₂/WSe₂}
- WARNING
- Group [H10D 62/8281](#) is incomplete pending reclassification of documents from groups [H10D 62/80](#), [H10D 62/82](#), [H10D 62/871](#) and [H10D 62/874](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- Q H10D 62/83
- • being Group IV materials, e.g. B-doped Si or undoped Ge
- WARNING
- Group [H10D 62/83](#) is impacted by reclassification into groups [H10D 62/822](#), [H10D 62/832](#), [H10D 62/834](#) and [H10D 62/881](#).
All groups listed in this Warning should be considered in order to perform a complete search.

- Q H10D 62/8303 • • • {Diamond}
WARNING
 Group [H10D 62/8303](#) is impacted by reclassification into group [H10D 62/882](#).
 Groups [H10D 62/8303](#) and [H10D 62/882](#) should be considered in order to perform a complete search.
- N H10D 62/832 • • • being Group IV materials comprising two or more elements, e.g. SiGe
WARNING
 Group [H10D 62/832](#) is incomplete pending reclassification of documents from group [H10D 62/83](#).
 Groups [H10D 62/83](#) and [H10D 62/832](#) should be considered in order to perform a complete search.
- N H10D 62/8325 • • • • {Silicon carbide}
- N H10D 62/834 • • • further characterised by the dopants
WARNING
 Group [H10D 62/834](#) is incomplete pending reclassification of documents from group [H10D 62/83](#).
 Groups [H10D 62/83](#) and [H10D 62/834](#) should be considered in order to perform a complete search.
- N H10D 62/84 • • being selenium or tellurium only
NOTE
 This group does not cover chemical compounds of selenium or tellurium.
- Q H10D 62/85 • • being Group III-V materials, e.g. GaAs
WARNING
 Group [H10D 62/85](#) is impacted by reclassification into groups [H10D 62/824](#), [H10D 62/852](#) and [H10D 62/854](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- Q H10D 62/8503 • • • {Nitride Group III-V materials, e.g. AlN or GaN}
WARNING
 Group [H10D 62/8503](#) is impacted by reclassification into group [H10D 62/881](#).
 Groups [H10D 62/8503](#) and [H10D 62/881](#) should be considered in order to perform a complete search.
- N H10D 62/852 • • • being Group III-V materials comprising three or more elements, e.g. AlGaIn or InAsSbP
WARNING
 Group [H10D 62/852](#) is incomplete pending reclassification of documents from group [H10D 62/85](#).
 Groups [H10D 62/85](#) and [H10D 62/852](#) should be considered in order to perform a complete search.
- N H10D 62/854 • • • further characterised by the dopants
WARNING
 Group [H10D 62/854](#) is incomplete pending reclassification of documents from group [H10D 62/85](#).
 Groups [H10D 62/85](#) and [H10D 62/854](#) should be considered in order to perform a complete search.

- Q H10D 62/86
- • being Group II-VI materials, e.g. ZnO
- WARNING
Group [H10D 62/86](#) is impacted by reclassification into groups [H10D 62/826](#), [H10D 62/8603](#), [H10D 62/862](#) and [H10D 62/864](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N H10D 62/8603
- • {Binary Group II-VI materials wherein cadmium is the Group II element, e.g. CdTe}
- WARNING
Group [H10D 62/8603](#) is incomplete pending reclassification of documents from group [H10D 62/86](#).
Groups [H10D 62/86](#) and [H10D 62/8603](#) should be considered in order to perform a complete search.
- N H10D 62/862
- • being Group II-VI materials comprising three or more elements, e.g. CdZnTe
- WARNING
Group [H10D 62/862](#) is incomplete pending reclassification of documents from group [H10D 62/86](#).
Groups [H10D 62/86](#) and [H10D 62/862](#) should be considered in order to perform a complete search.
- N H10D 62/864
- • further characterised by the dopants
- WARNING
Group [H10D 62/864](#) is incomplete pending reclassification of documents from group [H10D 62/86](#).
Groups [H10D 62/86](#) and [H10D 62/864](#) should be considered in order to perform a complete search.
- Q H10D 62/871
- • {being Group I-VI materials, e.g. Cu₂O; being Group I-VII materials, e.g. CuI}
- WARNING
Group [H10D 62/871](#) is incomplete pending reclassification of documents from group [H10D 62/80](#).
Group [H10D 62/871](#) is also impacted by reclassification into groups [H10D 62/82](#), [H10D 62/8281](#) and [H10D 62/883](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- Q H10D 62/874
- • {being Pb compounds or alloys, e.g. PbO}
- WARNING
Group [H10D 62/874](#) is incomplete pending reclassification of documents from group [H10D 62/80](#).
Group [H10D 62/874](#) is also impacted by reclassification into groups [H10D 62/82](#), [H10D 62/8281](#) and [H10D 62/883](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N H10D 62/875
- • {being semiconductor metal oxide, e.g. InGaZnO (Group II-VI materials [H10D 62/86](#); Group I-VI materials [H10D 62/871](#); Pb compounds or alloys [H10D 62/874](#))}
- WARNING
Group [H10D 62/875](#) is incomplete pending reclassification of documents from group [H10D 62/80](#).

Groups [H10D 62/80](#) and [H10D 62/875](#) should be considered in order to perform a complete search.

N H10D 62/881

- {being a two-dimensional material}

WARNING

Group [H10D 62/881](#) is incomplete pending reclassification of documents from groups [H10D 62/80](#), [H10D 62/83](#) and [H10D 62/8503](#).

All groups listed in this Warning should be considered in order to perform a complete search.

N H10D 62/882

- • {Graphene}

WARNING

Group [H10D 62/882](#) is incomplete pending reclassification of documents from group [H10D 62/8303](#).

Groups [H10D 62/8303](#) and [H10D 62/882](#) should be considered in order to perform a complete search.

N H10D 62/883

- • {Transition metal dichalcogenides, e.g. MoSe₂}

WARNING

Group [H10D 62/883](#) is incomplete pending reclassification of documents from groups [H10D 62/80](#), [H10D 62/871](#) and [H10D 62/874](#).

All groups listed in this Warning should be considered in order to perform a complete search.

N H10D 64/00

Electrodes of devices having potential barriers

N H10D 64/01

- Manufacture or treatment

N H10D 64/015

- • {removing at least parts of gate spacers, e.g. disposable spacers}

N H10D 64/017

- • {using dummy gates in processes wherein at least parts of the final gates are self-aligned to the dummy gates, i.e. replacement gate processes}

WARNING

Group [H10D 64/017](#) is incomplete pending reclassification of documents from group [H10D 30/0273](#).

Groups [H10D 30/0273](#) and [H10D 64/017](#) should be considered in order to perform a complete search.

N H10D 64/018

- • {Spacers formed inside holes at the prospective gate locations, e.g. holes left by removing dummy gates}

N H10D 64/021

- • {using multiple gate spacer layers, e.g. bilayered sidewall spacers}

N H10D 64/025

- • {forming recessed gates, e.g. by using local oxidation}

N H10D 64/027

- • • {by etching at gate locations}

N H10D 64/031

- • {of data-storage electrodes}

N H10D 64/033

- • • {comprising ferroelectric layers}

N H10D 64/035

- • • {comprising conductor-insulator-conductor-insulator-semiconductor structures}

N H10D 64/037

- • • {comprising charge-trapping insulators}

N H10D 64/111

- {Field plates}

N H10D 64/112

- • {comprising multiple field plate segments}

N H10D 64/115

- • {Resistive field plates, e.g. semi-insulating field plates}

N H10D 64/117

- • {Recessed field plates, e.g. trench field plates or buried field plates}

N H10D 64/118

- {Electrodes comprising insulating layers having particular dielectric or electrostatic properties, e.g. having static charges}

- N H10D 64/20 • Electrodes characterised by their shapes, relative sizes or dispositions
- N H10D 64/205 • • {Nanosized electrodes, e.g. nanowire electrodes}
- Q H10D 64/23 • • Electrodes carrying the current to be rectified, amplified, oscillated or switched, e.g. sources, drains, anodes or cathodes

WARNING

Group [H10D 64/23](#) is impacted by reclassification into group [H10D 64/232](#). Groups [H10D 64/23](#) and [H10D 64/232](#) should be considered in order to perform a complete search.

- N H10D 64/231 • • • {Emitter or collector electrodes for bipolar transistors}
- N H10D 64/232 • • • {Emitter electrodes for IGBTs}

WARNING

Group [H10D 64/232](#) is incomplete pending reclassification of documents from group [H10D 64/23](#).

Groups [H10D 64/23](#) and [H10D 64/232](#) should be considered in order to perform a complete search.

- N H10D 64/233 • • • {Cathode or anode electrodes for thyristors}
- N H10D 64/251 • • • {Source or drain electrodes for field-effect devices}
- Q H10D 64/252 • • • • {for vertical or pseudo-vertical devices}

WARNING

Group [H10D 64/252](#) is impacted by reclassification into groups [H10D 64/2523](#) and [H10D 64/2527](#).

Groups [H10D 64/252](#), [H10D 64/2523](#) and [H10D 64/2527](#) should be considered in order to perform a complete search.

- N H10D 64/2523 • • • • {for vertical devices wherein the source or drain electrodes extend entirely through semiconductor bodies}

WARNING

Group [H10D 64/2523](#) is incomplete pending reclassification of documents from group [H10D 64/252](#).

Groups [H10D 64/252](#) and [H10D 64/2523](#) should be considered in order to perform a complete search.

- N H10D 64/2527 • • • • {for vertical devices wherein the source or drain electrodes are recessed in semiconductor bodies}

WARNING

Group [H10D 64/2527](#) is incomplete pending reclassification of documents from groups [H10D 64/252](#) and [H10D 64/256](#).

Groups [H10D 64/252](#), [H10D 64/256](#) and [H10D 64/2527](#) should be considered in order to perform a complete search.

- Q H10D 64/254 • • • • {for lateral devices wherein the source or drain electrodes extend entirely through the semiconductor bodies, e.g. via-holes for back side contacts}

WARNING

Group [H10D 64/254](#) is impacted by reclassification into groups [H10D 64/256](#) - [H10D 64/2565](#) and [H10D 64/257](#).

Groups [H10D 64/254](#), [H10D 64/256](#) - [H10D 64/2565](#) and [H10D 64/257](#) should be considered in order to perform a complete search.

- Q H10D 64/256 . . . {for lateral devices wherein the source or drain electrodes are recessed in semiconductor bodies (source or drain electrodes of TFTs [H10D 30/673](#))}
- WARNING
 Group [H10D 64/256](#) is incomplete pending reclassification of documents from groups [H10D 64/254](#) and [H10D 64/257](#).
 Group [H10D 64/256](#) is also impacted by reclassification into group [H10D 64/2527](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- N H10D 64/2565 {wherein the source or drain regions are on a top side of the semiconductor bodies and the recessed source or drain electrodes are on a bottom side of the semiconductor bodies}
- WARNING
 Group [H10D 64/2565](#) is incomplete pending reclassification of documents from group [H10D 64/254](#).
 Groups [H10D 64/254](#) and [H10D 64/2565](#) should be considered in order to perform a complete search.
- Q H10D 64/257 {for lateral devices wherein the source or drain electrodes are characterised by top-view geometrical layouts, e.g. interdigitated, semi-circular, annular or L-shaped electrodes (source or drain electrodes of TFTs [H10D 30/673](#))}
- WARNING
 Group [H10D 64/257](#) is incomplete pending reclassification of documents from group [H10D 64/254](#).
 Group [H10D 64/257](#) is also impacted by reclassification into group [H10D 64/256](#).
 Groups [H10D 64/254](#), [H10D 64/257](#) and [H10D 64/256](#) should be considered in order to perform a complete search.
- N H10D 64/258 {characterised by the relative positions of the source or drain electrodes with respect to the gate electrode}
- N H10D 64/259 {Source or drain electrodes being self-aligned with the gate electrode and having bottom surfaces higher than the interface between the channel and the gate dielectric}
- N H10D 64/27 . . . Electrodes not carrying the current to be rectified, amplified, oscillated or switched, e.g. gates
- N H10D 64/281 . . . {Base electrodes for bipolar transistors}
- N H10D 64/291 . . . {Gate electrodes for thyristors}
- N H10D 64/311 . . . {Gate electrodes for field-effect devices}
- N H10D 64/411 {for FETs}
- N H10D 64/511 {for IGFETs}
- N H10D 64/512 {Disposition of the gate electrodes, e.g. buried gates}
- N H10D 64/513 {within recesses in the substrate, e.g. trench gates, groove gates or buried gates}
- N H10D 64/514 {characterised by the insulating layers}
- N H10D 64/516 {the thicknesses being non-uniform}
- N H10D 64/517 {characterised by the conducting layers}
- N H10D 64/518 {characterised by their lengths or sectional shapes}
- N H10D 64/519 {characterised by their top-view geometrical layouts}

- N H10D 64/529
- • • {Electrodes for IGFETs contacting substrate regions, e.g. for grounding or preventing parasitic effects}
- WARNING
Group [H10D 64/529](#) is incomplete pending reclassification of documents from group [H10D 62/378](#).
Groups [H10D 62/378](#) and [H10D 64/529](#) should be considered in order to perform a complete search.
- N H10D 64/60
- Electrodes characterised by their materials
- N H10D 64/602
- • {Heterojunction gate electrodes for FETs}
- N H10D 64/605
- • {Source, drain, or gate electrodes for FETs comprising highly resistive materials}
- N H10D 64/608
- • {being superconducting}
- N H10D 64/62
- • Electrodes ohmically coupled to a semiconductor
- N H10D 64/64
- • Electrodes comprising a Schottky barrier to a semiconductor
- N H10D 64/647
- • • {Schottky drain or source electrodes for IGFETs}
- N H10D 64/649
- • • {Schottky drain or source electrodes for FETs having rectifying junction gate electrodes}
- N H10D 64/66
- • Electrodes having a conductor capacitively coupled to a semiconductor by an insulator, e.g. MIS electrodes
- N H10D 64/661
- • • {the conductor comprising a layer of silicon contacting the insulator, e.g. polysilicon having vertical doping variation (having lateral variation in the gate structure [H10D 64/671](#))}
- N H10D 64/662
- • • • {the conductor further comprising additional layers, e.g. multiple silicon layers having different crystal structures}
- N H10D 64/663
- • • • • {the additional layers comprising a silicide layer contacting the layer of silicon, e.g. polycide gates}
- N H10D 64/664
- • • • • {the additional layers comprising a barrier layer between the layer of silicon and an upper metal or metal silicide layer}
- N H10D 64/665
- • • {the conductor comprising a layer of elemental metal contacting the insulator, e.g. tungsten or molybdenum (having lateral variation [H10D 64/671](#))}
- N H10D 64/666
- • • • {the conductor further comprising additional layers}
- Q H10D 64/667
- • • {the conductor comprising a layer of alloy material, compound material or organic material contacting the insulator, e.g. TiN workfunction layers (having lateral variation [H10D 64/671](#))}
- WARNING
Group [H10D 64/667](#) is impacted by reclassification into group [H10D 64/669](#).
Groups [H10D 64/667](#) and [H10D 64/669](#) should be considered in order to perform a complete search.
- Q H10D 64/668
- • • • {the layer being a silicide, e.g. TiSi_2 }
- WARNING
Group [H10D 64/668](#) is impacted by reclassification into group [H10D 64/669](#).
Groups [H10D 64/668](#) and [H10D 64/669](#) should be considered in order to perform a complete search.

- N H10D 64/669
- • • {the conductor further comprising additional layers of alloy material, compound material or organic material, e.g. TaN/TiAlN}
- WARNING
Group [H10D 64/669](#) is incomplete pending reclassification of documents from groups [H10D 64/667](#) and [H10D 64/668](#).
Groups [H10D 64/667](#), [H10D 64/668](#) and [H10D 64/669](#) should be considered in order to perform a complete search.
- Q H10D 64/671
- • • {the conductor having lateral variation in doping or structure}
- WARNING
Group [H10D 64/671](#) is impacted by reclassification into group [H10D 64/675](#).
Groups [H10D 64/671](#) and [H10D 64/675](#) should be considered in order to perform a complete search.
- N H10D 64/675
- • • {Gate sidewall spacers}
- WARNING
Group [H10D 64/675](#) is incomplete pending reclassification of documents from group [H10D 64/671](#).
Groups [H10D 64/671](#) and [H10D 64/675](#) should be considered in order to perform a complete search.
- N H10D 64/679
- • • • {comprising air gaps}
- N H10D 64/68
- • • characterised by the insulator, e.g. by the gate insulator
- N H10D 64/681
- • • • {having a compositional variation, e.g. multilayered}
- N H10D 64/683
- • • • • {being parallel to the channel plane}
- N H10D 64/685
- • • • • {being perpendicular to the channel plane}
- N H10D 64/687
- • • • {having cavities, e.g. porous gate dielectrics having gasses therein}
- N H10D 64/689
- • • • {having ferroelectric layers}
- N H10D 64/691
- • • • {comprising metallic compounds, e.g. metal oxides or metal silicates (insulators comprising nitrogen [H10D 64/693](#))}
- N H10D 64/693
- • • • {the insulator comprising nitrogen, e.g. nitrides, oxynitrides or nitrogen-doped materials}
- N H10D 80/00 - H10D 89/00**
- Integrated devices; Assemblies of multiple devices**
- N H10D 80/00**
- Assemblies of multiple devices comprising at least one device covered by this subclass**
- N H10D 80/20
- the at least one device being covered by groups [H10D 1/00](#) - [H10D 48/00](#), e.g. assemblies comprising capacitors, power FETs or Schottky diodes
- N H10D 80/211
- • {Resistors, capacitors or inductors covered by [H10D 1/00](#)}
- N H10D 80/213
- • • {Resistors}
- N H10D 80/215
- • • {Capacitors}
- N H10D 80/231
- • {Diodes covered by [H10D 8/00](#)}
- N H10D 80/251
- • {FETs covered by [H10D 30/00](#), e.g. power FETs}
- N H10D 80/30
- the at least one device being covered by groups [H10D 84/00](#) - [H10D 86/00](#), e.g. assemblies comprising integrated circuit processor chips

N H10D 84/00 **Integrated devices formed in or on semiconductor substrates that comprise only semiconducting layers, e.g. on Si wafers or on GaAs-on-Si wafers**

NOTE

In this group, when the manufacture or treatment of a device is determined to be novel and non-obvious, the device itself is also classified.

Q H10D 84/01 • Manufacture or treatment

WARNING

Group [H10D 84/01](#) is impacted by reclassification into groups [H10D 84/02](#), [H10D 84/03](#), [H10D 84/035](#), [H10D 84/038](#), [H10D 84/05](#), [H10D 84/07](#) and [H10D 84/08](#).

All groups listed in this Warning should be considered in order to perform a complete search.

N H10D 84/0102 • • {of thyristors having built-in components, e.g. thyristor having built-in diode}

N H10D 84/0105 • • • {the built-in components being field-effect devices}

N H10D 84/0107 • • {Integrating at least one component covered by [H10D 12/00](#) or [H10D 30/00](#) with at least one component covered by [H10D 8/00](#), [H10D 10/00](#) or [H10D 18/00](#), e.g. integrating IGFETs with BJTs}

WARNING

Groups [H10D 84/0107](#) and [H10D 84/0109](#) are incomplete pending reclassification of documents from groups [H10D 84/02](#), [H10D 84/032](#), [H10D 84/035](#), [H10D 84/05](#), [H10D 84/07](#) and [H10D 84/08](#).

All groups listed in this Warning should be considered in order to perform a complete search.

N H10D 84/0109 • • • {the at least one component covered by [H10D 12/00](#) or [H10D 30/00](#) being a MOS device}

N H10D 84/0112 • • {Integrating together multiple components covered by [H10D 8/00](#), [H10D 10/00](#) or [H10D 18/00](#), e.g. integrating multiple BJTs}

WARNING

Groups [H10D 84/0112](#) - [H10D 84/0121](#) are incomplete pending reclassification of documents from groups [H10D 84/02](#), [H10D 84/032](#), [H10D 84/035](#), [H10D 84/05](#), [H10D 84/07](#) and [H10D 84/08](#).

All groups listed in this Warning should be considered in order to perform a complete search.

N H10D 84/0114 • • • {the components including vertical BJTs and lateral BJTs}

N H10D 84/0116 • • • {the components including integrated injection logic [I²L]}

N H10D 84/0119 • • • {the components including complementary BJTs}

N H10D 84/0121 • • • • {the complementary BJTs being vertical BJTs}

N H10D 84/0123 • • {Integrating together multiple components covered by [H10D 12/00](#) or [H10D 30/00](#), e.g. integrating multiple IGBTs}

WARNING

Groups [H10D 84/0123](#), [H10D 84/0126](#), [H10D 84/0128](#), [H10D 84/013](#), [H10D 84/0133](#), [H10D 84/0135](#), [H10D 84/0137](#), [H10D 84/014](#), [H10D 84/0142](#), [H10D 84/0144](#), [H10D 84/0147](#), [H10D 84/0158](#), [H10D 84/016](#), [H10D 84/0163](#), [H10D 84/0165](#), [H10D 84/0167](#), [H10D 84/017](#), [H10D 84/0172](#), [H10D 84/0174](#), [H10D 84/0177](#), [H10D 84/0179](#), [H10D 84/0181](#), [H10D 84/0184](#), [H10D 84/0186](#), [H10D 84/0188](#), [H10D 84/0191](#), [H10D 84/0193](#) and [H10D 84/0195](#) are incomplete pending reclassification of documents from groups [H10D 84/02](#), [H10D 84/032](#), [H10D 84/035](#), [H10D 84/05](#), [H10D 84/07](#) and [H10D 84/08](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N H10D 84/0126 . . . {the components including insulated gates, e.g. IGFETs}
- N H10D 84/0128 {Manufacturing their channels}
- N H10D 84/013 {Manufacturing their source or drain regions, e.g. silicided source or drain regions}
- N H10D 84/0133 {Manufacturing common source or drain regions between multiple IGFETs}
- N H10D 84/0135 {Manufacturing their gate conductors}
- N H10D 84/0137 {the gate conductors being silicided}
- N H10D 84/014 {the gate conductors having different materials or different implants}
- N H10D 84/0142 {the gate conductors having different shapes or dimensions}
- N H10D 84/0144 {Manufacturing their gate insulating layers}
- N H10D 84/0147 {Manufacturing their gate sidewall spacers}
- N H10D 84/0149 {Manufacturing their interconnections or electrodes, e.g. source or drain electrodes}
- Q H10D 84/0151 {Manufacturing their isolation regions}

WARNING

Group [H10D 84/0151](#) is incomplete pending reclassification of documents from groups [H10D 84/02](#), [H10D 84/032](#), [H10D 84/035](#), [H10D 84/05](#), [H10D 84/07](#) and [H10D 84/08](#).

Group [H10D 84/0151](#) is also impacted by reclassification into group [H10D 84/0153](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N H10D 84/0153 {using gate cut processes}

WARNING

Group [H10D 84/0153](#) is incomplete pending reclassification of documents from groups [H10D 84/0151](#), [H10D 84/02](#), [H10D 84/032](#), [H10D 84/035](#), [H10D 84/05](#), [H10D 84/07](#) and [H10D 84/08](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- Q H10D 84/0156 {Manufacturing their doped wells}

WARNING

Group [H10D 84/0156](#) is incomplete pending reclassification of documents from groups [H10D 84/02](#), [H10D 84/032](#), [H10D 84/035](#), [H10D 84/05](#), [H10D 84/07](#) and [H10D 84/08](#).

Group [H10D 84/0156](#) is also impacted by reclassification into group [H10D 62/299](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N H10D 84/0158 {the components including FinFETs}
- N H10D 84/016 {the components including vertical IGFETs}
- N H10D 84/0163 {the components including enhancement-mode IGFETs and depletion-mode IGFETs}
- N H10D 84/0165 {the components including complementary IGFETs, e.g. CMOS devices}
- N H10D 84/0167 {Manufacturing their channels}

- N H10D 84/017 {Manufacturing their source or drain regions, e.g. silicided source or drain regions}
- N H10D 84/0172 {Manufacturing their gate conductors}
- N H10D 84/0174 {the gate conductors being silicided}
- N H10D 84/0177 {the gate conductors having different materials or different implants}
- N H10D 84/0179 {the gate conductors having different shapes or dimensions}
- N H10D 84/0181 {Manufacturing their gate insulating layers}
- N H10D 84/0184 {Manufacturing their gate sidewall spacers}
- N H10D 84/0186 {Manufacturing their interconnections or electrodes, e.g. source or drain electrodes}
- N H10D 84/0188 {Manufacturing their isolation regions}
- N H10D 84/0191 {Manufacturing their doped wells}
- N H10D 84/0193 {the components including FinFETs}
- N H10D 84/0195 {the components including vertical IGFETs}
- N H10D 84/0198 . . {Integrating together multiple components covered by [H10D 44/00](#), e.g. integrating charge coupled devices}

WARNING

Group [H10D 84/0198](#) is incomplete pending reclassification of documents from groups [H10D 84/02](#), [H10D 84/032](#), [H10D 84/035](#), [H10D 84/05](#), [H10D 84/07](#) and [H10D 84/08](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- Q H10D 84/02 . . characterised by using material-based technologies

WARNING

Group [H10D 84/02](#) is incomplete pending reclassification of documents from group [H10D 84/01](#).

Group [H10D 84/02](#) is also impacted by reclassification into groups [H10D 84/0107](#) - [H10D 84/0109](#), [H10D 84/0112](#) - [H10D 84/0121](#), [H10D 84/0123](#), [H10D 84/0126](#), [H10D 84/0128](#), [H10D 84/013](#) - [H10D 84/0133](#), [H10D 84/0135](#) - [H10D 84/0142](#), [H10D 84/0144](#), [H10D 84/0147](#), [H10D 84/0151](#) - [H10D 84/0153](#), [H10D 84/0156](#), [H10D 84/0158](#), [H10D 84/016](#), [H10D 84/0163](#), [H10D 84/0165](#) - [H10D 84/0195](#), [H10D 84/0198](#), [H10D 84/03](#) and [H10D 88/01](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N H10D 84/03 . . . using Group IV technology, e.g. silicon technology or silicon-carbide [SiC] technology

WARNING

Group [H10D 84/03](#) is incomplete pending reclassification of documents from groups [H10D 84/01](#) and [H10D 84/02](#).

Groups [H10D 84/01](#), [H10D 84/02](#) and [H10D 84/03](#) should be considered in order to perform a complete search.

- Q H10D 84/032 . . . {using diamond technology}

WARNING

Group [H10D 84/032](#) is impacted by reclassification into groups [H10D 84/0107](#) - [H10D 84/0109](#), [H10D 84/0112](#) - [H10D 84/0121](#), [H10D 84/0123](#), [H10D 84/0126](#), [H10D 84/0128](#), [H10D 84/013](#) - [H10D 84/0133](#), [H10D 84/0135](#) - [H10D 84/0142](#), [H10D 84/0144](#), [H10D 84/0147](#), [H10D 84/0151](#) - [H10D 84/0153](#), [H10D 84/0156](#),

[H10D 84/0158](#), [H10D 84/016](#), [H10D 84/0163](#), [H10D 84/0165](#) -
[H10D 84/0195](#), [H10D 84/0198](#) and [H10D 88/01](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- Q H10D 84/035 . . . {using silicon carbide [SiC] technology}

WARNING

Group [H10D 84/035](#) is incomplete pending reclassification of documents from group [H10D 84/01](#).

Group [H10D 84/035](#) is also impacted by reclassification into groups [H10D 84/0107](#) - [H10D 84/0109](#), [H10D 84/0112](#) - [H10D 84/0121](#), [H10D 84/0123](#), [H10D 84/0126](#), [H10D 84/0128](#), [H10D 84/013](#) - [H10D 84/0133](#), [H10D 84/0135](#) - [H10D 84/0142](#), [H10D 84/0144](#), [H10D 84/0147](#), [H10D 84/0151](#) - [H10D 84/0153](#), [H10D 84/0156](#), [H10D 84/0158](#), [H10D 84/016](#), [H10D 84/0163](#), [H10D 84/0165](#) - [H10D 84/0195](#), [H10D 84/0198](#) and [H10D 88/01](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N H10D 84/038 . . . {using silicon technology, e.g. SiGe}

WARNING

Group [H10D 84/038](#) is incomplete pending reclassification of documents from group [H10D 84/01](#).

Groups [H10D 84/01](#) and [H10D 84/038](#) should be considered in order to perform a complete search.

- Q H10D 84/05 . . . using Group III-V technology

WARNING

Group [H10D 84/05](#) is incomplete pending reclassification of documents from group [H10D 84/01](#). Group [H10D 84/05](#) is also impacted by reclassification into groups [H10D 84/0107](#) - [H10D 84/0109](#), [H10D 84/0112](#) - [H10D 84/0121](#), [H10D 84/0123](#), [H10D 84/0126](#), [H10D 84/0128](#), [H10D 84/013](#) - [H10D 84/0133](#), [H10D 84/0135](#) - [H10D 84/0142](#), [H10D 84/0144](#), [H10D 84/0147](#), [H10D 84/0151](#) - [H10D 84/0153](#), [H10D 84/0156](#), [H10D 84/0158](#), [H10D 84/016](#), [H10D 84/0163](#), [H10D 84/0165](#) - [H10D 84/0195](#), [H10D 84/0198](#) and [H10D 88/01](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- Q H10D 84/07 . . . using Group II-VI technology

WARNING

Group [H10D 84/07](#) is incomplete pending reclassification of documents from group [H10D 84/01](#).

Group [H10D 84/07](#) is also impacted by reclassification into groups [H10D 84/0107](#) - [H10D 84/0109](#), [H10D 84/0112](#) - [H10D 84/0121](#), [H10D 84/0123](#), [H10D 84/0126](#), [H10D 84/0128](#), [H10D 84/013](#) - [H10D 84/0133](#), [H10D 84/0135](#) - [H10D 84/0142](#), [H10D 84/0144](#), [H10D 84/0147](#), [H10D 84/0151](#) - [H10D 84/0153](#), [H10D 84/0156](#), [H10D 84/0158](#), [H10D 84/016](#), [H10D 84/0163](#), [H10D 84/0165](#) - [H10D 84/0195](#), [H10D 84/0198](#) and [H10D 88/01](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- Q H10D 84/08
- • • using combinations of technologies, e.g. using both Si and SiC technologies or using both Si and Group III-V technologies
- WARNING
- Group [H10D 84/08](#) is incomplete pending reclassification of documents from group [H10D 84/01](#).
- Group [H10D 84/08](#) is also impacted by reclassification into groups [H10D 84/0107](#) - [H10D 84/0109](#), [H10D 84/0112](#) - [H10D 84/0121](#), [H10D 84/0123](#), [H10D 84/0126](#), [H10D 84/0128](#), [H10D 84/013](#) - [H10D 84/0133](#), [H10D 84/0135](#) - [H10D 84/0142](#), [H10D 84/0144](#), [H10D 84/0147](#), [H10D 84/0151](#) - [H10D 84/0153](#), [H10D 84/0156](#), [H10D 84/0158](#), [H10D 84/016](#), [H10D 84/0163](#), [H10D 84/0165](#) - [H10D 84/0195](#), [H10D 84/0198](#) and [H10D 88/01](#).
- All groups listed in this Warning should be considered in order to perform a complete search.
- N H10D 84/101
- {Integrated devices comprising main components and built-in components, e.g. IGBT having built-in freewheel diode}
- WARNING
- Group [H10D 84/101](#) is incomplete pending reclassification of documents from group [H10D 30/64](#).
- Groups [H10D 30/64](#) and [H10D 84/101](#) should be considered in order to perform a complete search.
- N H10D 84/121
- • {BJTs having built-in components}
- N H10D 84/125
- • • {the built-in components being resistive elements, e.g. BJT having a built-in ballasting resistor}
- N H10D 84/131
- • {Thyristors having built-in components}
- N H10D 84/133
- • • {the built-in components being capacitors or resistors}
- N H10D 84/135
- • • {the built-in components being diodes}
- N H10D 84/136
- • • • {in anti-parallel configurations, e.g. reverse current thyristor [RCT]}
- N H10D 84/138
- • • {the built-in components being FETs}
- N H10D 84/141
- • {VDMOS having built-in components}
- N H10D 84/143
- • • {the built-in components being PN junction diodes}
- N H10D 84/144
- • • • {in antiparallel diode configurations}
- N H10D 84/146
- • • {the built-in components being Schottky barrier diodes}
- N H10D 84/148
- • • {the built-in components being breakdown diodes, e.g. Zener diodes}
- N H10D 84/151
- • {LDMOS having built-in components}
- N H10D 84/153
- • • {the built-in component being PN junction diodes}
- N H10D 84/154
- • • • {in antiparallel diode configurations}
- N H10D 84/156
- • • {the built-in components being Schottky barrier diodes}
- N H10D 84/158
- • • {the built-in components being breakdown diodes, e.g. Zener diodes}
- N H10D 84/161
- • {IGBT having built-in components}
- WARNING
- Group [H10D 84/161](#) is incomplete pending reclassification of documents from group [H10D 12/411](#).
- Groups [H10D 12/411](#) and [H10D 84/161](#) should be considered in order to perform a complete search.

- N H10D 84/201
- {characterised by the integration of only components covered by [H10D 1/00](#) or [H10D 8/00](#), e.g. RLC circuits}
- WARNING
Group [H10D 84/201](#) is incomplete pending reclassification of documents from group [H10D 86/85](#).
Groups [H10D 86/85](#) and [H10D 84/201](#) should be considered in order to perform a complete search.
- N H10D 84/204
- • {of combinations of diodes or capacitors or resistors}
- Q H10D 84/206
- • • {of combinations of capacitors and resistors}
- WARNING
Group [H10D 84/206](#) is incomplete pending reclassification of documents from group [H10D 86/85](#).
Group [H10D 84/206](#) is also impacted by reclassification into groups [H10D 84/209](#) and [H10D 84/212](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N H10D 84/209
- • • {of only resistors}
- WARNING
Group [H10D 84/209](#) is incomplete pending reclassification of documents from groups [H10D 84/206](#) and [H10D 86/85](#).
Groups [H10D 84/206](#), [H10D 86/85](#) and [H10D 84/209](#) should be considered in order to perform a complete search.
- N H10D 84/212
- • • {of only capacitors}
- WARNING
Group [H10D 84/212](#) is incomplete pending reclassification of documents from groups [H10D 84/206](#) and [H10D 86/85](#).
Groups [H10D 84/206](#), [H10D 86/85](#) and [H10D 84/212](#) should be considered in order to perform a complete search.
- N H10D 84/215
- • • • {of only varactors}
- N H10D 84/217
- • • • {of only conductor-insulator-semiconductor capacitors}
- N H10D 84/221
- • • {of only diodes}
- Q H10D 84/40
- characterised by the integration of at least one component covered by groups [H10D 12/00](#) or [H10D 30/00](#) with at least one component covered by groups [H10D 10/00](#) or [H10D 18/00](#), e.g. integration of IGFETs with BJTs
- WARNING
Group [H10D 84/40](#) is incomplete pending reclassification of documents from group [H10D 84/401](#).
Group [H10D 84/40](#) is also impacted by reclassification into group [H10D 84/80](#).
Groups [H10D 84/401](#), [H10D 84/40](#) and [H10D 84/80](#) should be considered in order to perform a complete search.
- Q H10D 84/401
- • {Combinations of FETs or IGBTs with BJTs}
- WARNING
Group [H10D 84/401](#) is impacted by reclassification into group [H10D 84/40](#).
Groups [H10D 84/401](#) and [H10D 84/40](#) should be considered in order to perform a complete search.
- N H10D 84/403
- • • {Combinations of FETs or IGBTs with BJTs and with one or more of diodes, resistors or capacitors}

N	H10D 84/406	• • • {Combinations of FETs or IGBTs with vertical BJTs and with one or more of diodes, resistors or capacitors}
N	H10D 84/409	• • • {Combinations of FETs or IGBTs with lateral BJTs and with one or more of diodes, resistors or capacitors}
N	H10D 84/60	• characterised by the integration of at least one component covered by groups H10D 10/00 or H10D 18/00 , e.g. integration of BJTs (H10D 84/40 takes precedence)
N	H10D 84/611	• • {Combinations of BJTs and one or more of diodes, resistors or capacitors}
N	H10D 84/613	• • • {Combinations of vertical BJTs and one or more of diodes, resistors or capacitors}
N	H10D 84/615	• • • • {Combinations of vertical BJTs and one or more of resistors or capacitors}
N	H10D 84/617	• • • • {Combinations of vertical BJTs and only diodes}
N	H10D 84/619	• • • {Combinations of lateral BJTs and one or more of diodes, resistors or capacitors}
N	H10D 84/63	• • Combinations of vertical and lateral BJTs
N	H10D 84/641	• • {Combinations of only vertical BJTs (vertical complementary BJTs H10D 84/673)}
N	H10D 84/642	• • • {Combinations of non-inverted vertical BJTs of the same conductivity type having different characteristics, e.g. Darlington transistors}
N	H10D 84/643	• • • {Combinations of non-inverted vertical BJTs and inverted vertical BJTs}
Q	H10D 84/645	• • {Combinations of only lateral BJTs}
<p><u>WARNING</u></p> <p>Group H10D 84/645 is impacted by reclassification into group H10D 84/67. Groups H10D 84/645 and H10D 84/67 should be considered in order to perform a complete search.</p>		
N	H10D 84/65	• • Integrated injection logic
N	H10D 84/652	• • • {using vertical injector structures}
N	H10D 84/655	• • • {using field effect injector structures}
N	H10D 84/658	• • • {integrated in combination with analog structures}
N	H10D 84/67	• • Complementary BJTs
<p><u>WARNING</u></p> <p>Group H10D 84/67 is incomplete pending reclassification of documents from group H10D 84/645. Groups H10D 84/645 and H10D 84/67 should be considered in order to perform a complete search.</p>		
N	H10D 84/673	• • • {Vertical complementary BJTs}
N	H10D 84/676	• • {Combinations of only thyristors}
N	H10D 84/80	• characterised by the integration of at least one component covered by groups H10D 12/00 or H10D 30/00 , e.g. integration of IGFETs (H10D 84/40 takes precedence)
<p><u>WARNING</u></p> <p>Group H10D 84/80 is incomplete pending reclassification of documents from group H10D 84/40. Groups H10D 84/40 and H10D 84/80 should be considered in order to perform a complete search.</p>		

- Q H10D 84/811
- • {Combinations of field-effect devices and one or more diodes, capacitors or resistors}
- WARNING
Group [H10D 84/811](#) is impacted by reclassification into groups [H10D 84/813](#) and [H10D 84/817](#).
Groups [H10D 84/811](#), [H10D 84/813](#) and [H10D 84/817](#) should be considered in order to perform a complete search.
- N H10D 84/813
- • • {Combinations of field-effect devices and capacitor only}
- WARNING
Group [H10D 84/813](#) is incomplete pending reclassification of documents from group [H10D 84/811](#).
Groups [H10D 84/811](#) and [H10D 84/813](#) should be considered in order to perform a complete search.
- N H10D 84/817
- • • {Combinations of field-effect devices and resistors only}
- WARNING
Group [H10D 84/817](#) is incomplete pending reclassification of documents from group [H10D 84/811](#).
Groups [H10D 84/811](#) and [H10D 84/817](#) should be considered in order to perform a complete search.
- N H10D 84/82
- • of only field-effect components
- Q H10D 84/83
- • • of only insulated-gate FETs [IGFET]
- WARNING
Group [H10D 84/83](#) is impacted by reclassification into groups [H10D 84/8311](#), [H10D 84/8312](#), [H10D 84/83125](#), [H10D 84/83135](#), [H10D 84/83138](#), [H10D 84/8314](#), [H10D 84/8316](#), [H10D 84/832](#) - [H10D 84/833](#), [H10D 84/835](#), [H10D 84/836](#) and [H10D 84/837](#) - [H10D 84/839](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N H10D 84/8311
- • • • {the IGFETs characterised by having different channel structures}
- WARNING
Group [H10D 84/8311](#) is incomplete pending reclassification of documents from groups [H10D 84/83](#), [H10D 84/834](#), [H10D 84/84](#), [H10D 84/85](#), [H10D 84/853](#) and [H10D 84/856](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N H10D 84/8312
- • • • {the IGFETs characterised by having different source or drain region structures, e.g. IGFETs having symmetrical source or drain regions integrated with IGFETs having asymmetrical source or drain regions}
- WARNING
Group [H10D 84/8312](#) is incomplete pending reclassification of documents from groups [H10D 84/83](#), [H10D 84/834](#), [H10D 84/84](#), [H10D 84/85](#), [H10D 84/853](#) and [H10D 84/856](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N H10D 84/83125
- • • • {the IGFETs characterised by having shared source or drain regions}
- WARNING
Group [H10D 84/83125](#) is incomplete pending reclassification of documents from groups [H10D 84/83](#), [H10D 84/834](#) and [H10D 84/84](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N H10D 84/83135 . . . {the IGFETs characterised by having different gate conductor materials or different gate conductor implants}

WARNING

Group [H10D 84/83135](#) is incomplete pending reclassification of documents from groups [H10D 84/83](#), [H10D 84/834](#), [H10D 84/84](#), [H10D 84/85](#), [H10D 84/853](#) and [H10D 84/856](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N H10D 84/83138 . . . {the IGFETs characterised by having different shapes or dimensions of their gate conductors}

WARNING

Group [H10D 84/83138](#) is incomplete pending reclassification of documents from groups [H10D 84/83](#), [H10D 84/834](#), [H10D 84/84](#), [H10D 84/85](#), [H10D 84/853](#) and [H10D 84/856](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N H10D 84/8314 . . . {the IGFETs characterised by having gate insulating layers with different properties}

WARNING

Group [H10D 84/8314](#) is incomplete pending reclassification of documents from groups [H10D 84/83](#), [H10D 84/834](#), [H10D 84/84](#), [H10D 84/85](#), [H10D 84/853](#) and [H10D 84/856](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N H10D 84/8316 . . . {the IGFETs characterised by having gate sidewall spacers specially adapted for integration}

WARNING

Group [H10D 84/8316](#) is incomplete pending reclassification of documents from groups [H10D 84/83](#), [H10D 84/834](#), [H10D 84/84](#), [H10D 84/85](#), [H10D 84/853](#) and [H10D 84/856](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N H10D 84/832 . . . {comprising IGFETs having stacked nanowire, nanosheet or nanoribbon channels}

WARNING

Groups [H10D 84/832](#) and [H10D 84/833](#) are incomplete pending reclassification of documents from groups [H10D 84/83](#) and [H10D 84/834](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N H10D 84/833 . . . {comprising forksheet IGFETs}

- Q H10D 84/834 . . . {comprising FinFETs}

WARNING

Group [H10D 84/834](#) is impacted by reclassification into groups [H10D 84/8311](#), [H10D 84/8312](#), [H10D 84/83125](#), [H10D 84/83135](#), [H10D 84/83138](#), [H10D 84/8314](#), [H10D 84/8316](#), [H10D 84/832](#) - [H10D 84/833](#), [H10D 84/835](#), [H10D 84/836](#) and [H10D 84/837](#) - [H10D 84/839](#).

All groups listed in this Warning should be considered in order to perform a complete search.

N H10D 84/835 . . . {comprising LDMOS}

WARNING

Group [H10D 84/835](#) is incomplete pending reclassification of documents from groups [H10D 84/83](#), [H10D 84/834](#), [H10D 84/84](#), [H10D 84/853](#) and [H10D 84/856](#).

All groups listed in this Warning should be considered in order to perform a complete search.

N H10D 84/836 . . . {comprising EDMOS}

WARNING

Group [H10D 84/836](#) is incomplete pending reclassification of documents from groups [H10D 84/83](#), [H10D 84/834](#), [H10D 84/84](#), [H10D 84/853](#) and [H10D 84/856](#).

All groups listed in this Warning should be considered in order to perform a complete search.

N H10D 84/837 . . . {comprising vertical IGFETs}

WARNING

Groups [H10D 84/837](#) and [H10D 84/839](#) are incomplete pending reclassification of documents from groups [H10D 84/83](#), [H10D 84/834](#), [H10D 84/84](#), [H10D 84/853](#) and [H10D 84/856](#).

All groups listed in this Warning should be considered in order to perform a complete search.

N H10D 84/839 . . . {comprising VDMOS}

Q H10D 84/84 . . . Combinations of enhancement-mode IGFETs and depletion-mode IGFETs

WARNING

Group [H10D 84/84](#) is impacted by reclassification into groups [H10D 84/8311](#), [H10D 84/8312](#), [H10D 84/83125](#), [H10D 84/83135](#), [H10D 84/83138](#), [H10D 84/8314](#), [H10D 84/8316](#), [H10D 84/835](#), [H10D 84/836](#) and [H10D 84/837](#) - [H10D 84/839](#).

All groups listed in this Warning should be considered in order to perform a complete search.

Q H10D 84/85 . . . Complementary IGFETs, e.g. CMOS

WARNING

Group [H10D 84/85](#) is impacted by reclassification into groups [H10D 84/8311](#), [H10D 84/8312](#), [H10D 84/83135](#), [H10D 84/83138](#), [H10D 84/8314](#), [H10D 84/8316](#) and [H10D 84/851](#) - [H10D 84/852](#).

All groups listed in this Warning should be considered in order to perform a complete search.

N H10D 84/851 . . . {comprising IGFETs having stacked nanowire, nanosheet or nanoribbon channels}

WARNING

Groups [H10D 84/851](#) and [H10D 84/852](#) are incomplete pending reclassification of documents from groups [H10D 84/85](#) and [H10D 84/853](#).

All groups listed in this Warning should be considered in order to perform a complete search.

N H10D 84/852 . . . {comprising forksheet IGFETs}

- Q H10D 84/853 {comprising FinFETs}
- WARNING
Group [H10D 84/853](#) is impacted by reclassification into groups [H10D 84/8311](#), [H10D 84/8312](#), [H10D 84/83135](#), [H10D 84/83138](#), [H10D 84/8314](#), [H10D 84/8316](#), [H10D 84/835](#), [H10D 84/836](#), [H10D 84/837 - H10D 84/839](#) and [H10D 84/851 - H10D 84/852](#). All groups listed in this Warning should be considered in order to perform a complete search.
- N H10D 84/854 {comprising arrangements for preventing bipolar actions between the different IGFET regions, e.g. arrangements for latchup prevention}
- Q H10D 84/856 {the complementary IGFETs having different architectures than each other, e.g. high-voltage and low-voltage CMOS}
- WARNING
Group [H10D 84/856](#) is impacted by reclassification into groups [H10D 84/8311](#), [H10D 84/8312](#), [H10D 84/83135](#), [H10D 84/83138](#), [H10D 84/8314](#), [H10D 84/8316](#), [H10D 84/835](#), [H10D 84/836](#) and [H10D 84/837 - H10D 84/839](#). All groups listed in this Warning should be considered in order to perform a complete search.
- N H10D 84/857 {comprising an N-type well but not a P-type well}
- N H10D 84/858 {comprising a P-type well but not an N-type well}
- N H10D 84/859 {comprising both N-type and P-type wells, e.g. twin-tub}
- N H10D 84/86 . . of Schottky-barrier gate FETs
- N H10D 84/87 . . of PN-junction gate FETs
- N H10D 84/891 . {characterised by the integration of only components covered by [H10D 44/00](#), e.g. integration of charge-coupled devices [CCD] or charge injection devices [CID]}
- N H10D 84/895 . . {comprising bucket-brigade charge-coupled devices}
- N H10D 84/90 . Masterslice integrated circuits
- N H10D 84/901 . . {comprising bipolar technology}
- N H10D 84/903 . . {comprising field effect technology}
- N H10D 84/905 . . . {A3B5 or A3B6 gate arrays}
- N H10D 84/907 . . . {CMOS gate arrays}
- N H10D 84/909 {Microarchitecture}
- N H10D 84/911 {Basic cell P to N transistor counts}
- N H10D 84/912 {4-T CMOS basic cells}
- N H10D 84/914 {5-T CMOS basic cells}
- N H10D 84/916 {6-T CMOS basic cells}
- N H10D 84/918 {7-T CMOS basic cells}
- N H10D 84/921 {8-T CMOS basic cells}
- N H10D 84/922 {relative P to N transistor sizes}
- N H10D 84/924 {for current drive capability}
- N H10D 84/925 {for delay time adaptation}
- N H10D 84/927 {for capacitive loading}
- N H10D 84/929 {Isolations}
- N H10D 84/931 {FET isolation}
- N H10D 84/933 {LOCOS}

N	H10D 84/935	. . . . . {Degree of specialisation for implementing specific functions}
N	H10D 84/937	. . . . . {Implementation of digital circuits}
N	H10D 84/938	. . . . . {Implementation of memory functions}
N	H10D 84/941	. . . . . {Implementation of analog circuits}
N	H10D 84/942	. . . . . {Resistors and capacitors}
N	H10D 84/944	. . . . . {Hybrid analog or digital}
N	H10D 84/946	. . . . . {Embedded IO cells}
N	H10D 84/948	. . . . . {Transmission gates}
N	H10D 84/949	. . . . . {Porous cells, i.e. pass-through elements}
N	H10D 84/951	. . . . . {Technology used, i.e. design rules}
N	H10D 84/953	. . . . . {Sub-micron technology}
N	H10D 84/955	. . . . . {Twin-tub technology}
N	H10D 84/957	. . . . . {SOS or SOI technology}
N	H10D 84/959	. . . . . {Connectability characteristics, i.e. diffusion and polysilicon geometries}
N	H10D 84/961	. . . . . {Substrate and well contacts}
N	H10D 84/962	. . . . . {Horizontal or vertical grid line density}
N	H10D 84/964	. . . . . {Yield or reliability}
N	H10D 84/966	. . . . . {Gate electrode terminals or contacts}
N	H10D 84/968	. . . . {Macro-architecture}
N	H10D 84/971	. . . . . {Number of core or basic cells in the macro (RAM or ROM)}
N	H10D 84/972	. . . . . {Distribution functions, e.g. sea of gates}
N	H10D 84/974	. . . . . {Layout specifications, i.e. inner core regions}
N	H10D 84/975	. . . . . {Wiring regions or routing}
N	H10D 84/977	. . . . . {Avoiding clock-skew or clock-delays}
N	H10D 84/979	. . . . . {Data lines, e.g. buses}
N	H10D 84/981	. . . . . {Power supply lines}
N	H10D 84/983	. . . . {Levels of metallisation}
N	H10D 84/985	. . . . . {Two levels of metal}
N	H10D 84/987	. . . . . {Three levels of metal}
N	H10D 84/988	. . . . . {Four or more levels of metal}
N	H10D 84/991	. . . . {Latch-up prevention}
N	H10D 84/992	. . . . {Noise prevention, e.g. preventing crosstalk}
N	H10D 84/994	. . . . {Radiation hardened circuits}
N	H10D 84/996	. . {using combined field effect technology and bipolar technology}
N	H10D 84/998	. . {Input and output buffer/driver structures}

N H10D 86/00 **Integrated devices formed in or on insulating or conducting substrates, e.g. formed in silicon-on-insulator [SOI] substrates or on stainless steel or glass substrates**

NOTE

In this group, when the manufacture or treatment of a device is determined to be novel and non-obvious, the device itself is also classified.

N	H10D 86/01	. Manufacture or treatment
N	H10D 86/011	. . {comprising FinFETs}
N	H10D 86/021	. . {of multiple TFTs}

N	H10D 86/0212	• • • {comprising manufacture, treatment or coating of substrates}
N	H10D 86/0214	• • • {using temporary substrates}
N	H10D 86/0221	• • • {comprising manufacture, treatment or patterning of TFT semiconductor bodies}
N	H10D 86/0223	• • • • {comprising crystallisation of amorphous, microcrystalline or polycrystalline semiconductor materials}
N	H10D 86/0225	• • • • • {using crystallisation-promoting species, e.g. using a Ni catalyst}
N	H10D 86/0227	• • • • • {using structural arrangements to control crystal growth, e.g. placement of grain filters}
N	H10D 86/0229	• • • • • {characterised by control of the annealing or irradiation parameters}
N	H10D 86/0231	• • • {using masks, e.g. half-tone masks}
N	H10D 86/0241	• • • {using liquid deposition, e.g. printing}
N	H10D 86/0251	• • • {characterised by increasing the uniformity of device parameters}
N	H10D 86/03	• • wherein the substrate comprises sapphire, e.g. silicon-on-sapphire [SOS]
N	H10D 86/201	• {the substrates comprising an insulating layer on a semiconductor body, e.g. SOI (H10D 86/40 take precedence)}
N	H10D 86/215	• • {comprising FinFETs}
N	H10D 86/40	• characterised by multiple TFTs
N	H10D 86/411	• • {characterised by materials, geometry or structure of the substrates}
N	H10D 86/421	• • {having a particular composition, shape or crystalline structure of the active layer}
N	H10D 86/423	• • • {comprising semiconductor materials not belonging to the Group IV, e.g. InGaZnO}
N	H10D 86/425	• • • {having different crystal properties in different TFTs or within an individual TFT}
N	H10D 86/427	• • • {having different thicknesses of the semiconductor bodies in different TFTs}
N	H10D 86/431	• • {having different compositions, shapes, layouts or thicknesses of gate insulators in different TFTs}
N	H10D 86/441	• • {Interconnections, e.g. scanning lines}
N	H10D 86/443	• • • {adapted for preventing breakage, peeling or short circuiting}
N	H10D 86/451	• • {characterised by the compositions or shapes of the interlayer dielectrics}
N	H10D 86/471	• • {having different architectures, e.g. having both top-gate and bottom-gate TFTs}
N	H10D 86/481	• • {integrated with passive devices, e.g. auxiliary capacitors}
N	H10D 86/60	• • wherein the TFTs are in active matrices
N	H10D 86/80	• characterised by multiple passive components, e.g. resistors, capacitors or inductors
Q	H10D 86/85	• • characterised by only passive components

WARNING

Group [H10D 86/85](#) is impacted by reclassification into groups [H10D 84/201](#), [H10D 84/206](#), [H10D 84/209](#) and [H10D 84/212](#).

All groups listed in this Warning should be considered in order to perform a complete search.

N	H10D 87/00	Integrated devices comprising both bulk components and either SOI or SOS components on the same substrate
N	H10D 88/00	Three-dimensional [3D] integrated devices

- N H10D 88/01
- {Manufacture or treatment}
- WARNING
 Group [H10D 88/01](#) is incomplete pending reclassification of documents from groups [H10D 84/02](#), [H10D 84/032](#), [H10D 84/035](#), [H10D 84/05](#), [H10D 84/07](#) and [H10D 84/08](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- N H10D 88/101
- {comprising components on opposite major surfaces of semiconductor substrates}
- N H10D 89/00**
- Aspects of integrated devices not covered by groups [H10D 84/00](#) - [H10D 88/00](#)**
- N H10D 89/011
- {Division of wafers or substrates to produce devices, each consisting of a single electric circuit element}
- N H10D 89/013
- • {the wafers or substrates being semiconductor bodies}
- N H10D 89/015
- • {the wafers or substrates being other than semiconductor bodies, e.g. insulating bodies}
- N H10D 89/10
- Integrated device layouts
- N H10D 89/105
- • {adapted for thermal considerations}
- N H10D 89/211
- {Design considerations for internal polarisation (integrated injection logic [H10D 84/65](#))}
- N H10D 89/213
- • {in field-effect devices}
- N H10D 89/215
- • • {comprising arrangements for charge pumping or biasing substrates}
- N H10D 89/217
- • • {comprising arrangements for charge injection in static induction transistor logic [SITL] devices}
- N H10D 89/311
- • {in bipolar devices}
- N H10D 89/60
- Integrated devices comprising arrangements for electrical or thermal protection, e.g. protection circuits against electrostatic discharge [ESD]
- N H10D 89/601
- • {for devices having insulated gate electrodes, e.g. for IGFETs or IGBTs}
- N H10D 89/611
- • • {using diodes as protective elements}
- N H10D 89/711
- • • {using bipolar transistors as protective elements}
- N H10D 89/713
- • • • {including a PNP transistor and a NPN transistor, wherein each of said transistors has its base region coupled to the collector region of the other transistor, e.g. silicon controlled rectifier [SCR] devices}
- N H10D 89/811
- • • {using FETs as protective elements}
- N H10D 89/813
- • • • {specially adapted to provide an electrical current path other than the field-effect induced current path}
- N H10D 89/814
- • • • • {involving a parasitic bipolar transistor triggered by the electrical biasing of the gate electrode of the FET, e.g. gate coupled transistors}
- N H10D 89/815
- • • • • {involving a parasitic bipolar transistor triggered by the local electrical biasing of the layer acting as base region of said parasitic bipolar transistor}
- N H10D 89/817
- • • • {FETs in a Darlington configuration}
- N H10D 89/819
- • • • {Bias arrangements for gate electrodes of FETs, e.g. RC networks or voltage partitioning circuits (FETs in a Darlington configuration [H10D 89/817](#))}
- N H10D 89/911
- • • {using passive elements as protective elements}
- N H10D 89/921
- • • {characterised by the configuration of the interconnections connecting the protective arrangements, e.g. ESD buses}

N H10D 89/931 . . . {characterised by the dispositions of the protective arrangements}

N H10D 99/00 **Subject matter not provided for in other groups of this subclass**

Project: RP12333 (H10F)

N H10F **INORGANIC SEMICONDUCTOR DEVICES SENSITIVE TO INFRARED RADIATION, LIGHT, ELECTROMAGNETIC RADIATION OF SHORTER WAVELENGTH OR CORPUSCULAR RADIATION**

NOTES

1. This subclass covers inorganic radiation-sensitive semiconductor devices insofar as these devices are specially adapted for:

the conversion of the radiation energy into electrical energy; or
the control of electrical energy by such radiation.

2. In this subclass, infrared radiation includes wavelengths between about 700 nm and about 1 mm.

3. In this subclass, the periodic system used is the I to VIII Group system indicated in the Periodic Table under Note (3) of section [C](#).

N H10F 10/00 -
H10F 19/00

Photovoltaics

N H10F 10/00 **Individual photovoltaic cells, e.g. solar cells (electrolytic light-sensitive devices, e.g. dye-sensitised solar cells, [H01G 9/20](#))**

WARNING

Group [H10F 10/00](#) is incomplete pending reclassification of documents from group [H10F 99/00](#).

Groups [H10F 99/00](#) and [H10F 10/00](#) should be considered in order to perform a complete search.

- N H10F 10/10 . having potential barriers
- N H10F 10/11 . . Photovoltaic cells having point contact potential barriers ([H10F 10/18](#) takes precedence)
- N H10F 10/12 . . Photovoltaic cells having only metal-insulator-semiconductor [MIS] potential barriers
- N H10F 10/13 . . Photovoltaic cells having absorbing layers comprising graded bandgaps
- N H10F 10/14 . . Photovoltaic cells having only PN homojunction potential barriers
- N H10F 10/142 . . . comprising multiple PN homojunctions, e.g. tandem cells
- N H10F 10/1425 {Inverted metamorphic multi-junction [IMM] photovoltaic cells}
- N H10F 10/144 . . . comprising only Group III-V materials, e.g. GaAs, AlGaAs, or InP photovoltaic cells
- N H10F 10/146 . . . {Back-junction photovoltaic cells, e.g. having interdigitated base-emitter regions on the back side}
- N H10F 10/148 . . . {Double-emitter photovoltaic cells, e.g. bifacial photovoltaic cells}
- N H10F 10/16 . . Photovoltaic cells having only PN heterojunction potential barriers
- N H10F 10/161 . . . comprising multiple PN heterojunctions, e.g. tandem cells
- N H10F 10/162 . . . comprising only Group II-VI materials, e.g. CdS/CdTe photovoltaic cells
- N H10F 10/163 . . . comprising only Group III-V materials, e.g. GaAs/AlGaAs or InP/GaInAs photovoltaic cells
- N H10F 10/164 . . . comprising heterojunctions with Group IV materials, e.g. ITO/Si or GaAs/SiGe photovoltaic cells
- N H10F 10/165 the heterojunctions being Group IV-IV heterojunctions, e.g. Si/Ge, SiGe/Si or Si/SiC photovoltaic cells

- N H10F 10/166 the Group IV-IV heterojunctions being heterojunctions of crystalline and amorphous materials, e.g. silicon heterojunction [SHJ] photovoltaic cells
- N H10F 10/167 . . . comprising Group I-III-VI materials, e.g. CdS/CuInSe₂ [CIS] heterojunction photovoltaic cells
- N H10F 10/169 . . . {comprising Cu₂X/CdX heterojunctions, wherein X is a Group VI element, e.g. Cu₂O/CdO PN heterojunction photovoltaic cells}
- N H10F 10/17 . . Photovoltaic cells having only PIN junction potential barriers
- N H10F 10/172 . . . comprising multiple PIN junctions, e.g. tandem cells
- N H10F 10/174 . . . comprising monocrystalline or polycrystalline materials
- N H10F 10/18 . . Photovoltaic cells having only Schottky potential barriers
- N H10F 10/19 . . Photovoltaic cells having multiple potential barriers of different types, e.g. tandem cells having both PN and PIN junctions
- N H10F 19/00** **Integrated devices, or assemblies of multiple devices, comprising at least one photovoltaic cell covered by group [H10F 10/00](#), e.g. photovoltaic modules**
- WARNING
- Group [H10F 19/00](#) is incomplete pending reclassification of documents from group [H10F 99/00](#).
- Groups [H10F 99/00](#) and [H10F 19/00](#) should be considered in order to perform a complete search.
- N H10F 19/10 . . comprising photovoltaic cells in arrays in a single semiconductor substrate, the photovoltaic cells having vertical junctions or V-groove junctions
- N H10F 19/20 . . comprising photovoltaic cells in arrays in or on a single semiconductor substrate, the photovoltaic cells having planar junctions (having multiple thin-film photovoltaic cells deposited on the same substrate [H10F 19/31](#))
- N H10F 19/30 . . comprising thin-film photovoltaic cells
- N H10F 19/31 . . having multiple laterally adjacent thin-film photovoltaic cells deposited on the same substrate
- N H10F 19/33 . . . Patterning processes to connect the photovoltaic cells, e.g. laser cutting of conductive or active layers
- N H10F 19/35 . . . Structures for the connecting of adjacent photovoltaic cells, e.g. interconnections or insulating spacers
- N H10F 19/37 . . . comprising means for obtaining partial light transmission through the integrated devices, or the assemblies of multiple devices, e.g. partially transparent thin-film photovoltaic modules for windows
- N H10F 19/40 . . comprising photovoltaic cells in a mechanically stacked configuration
- N H10F 19/50 . . Integrated devices comprising at least one photovoltaic cell and other types of semiconductor or solid-state components ([H10F 19/75](#) takes precedence)
- N H10F 19/70 . . comprising bypass diodes (bypass diodes in a junction box [H02S 40/34](#))
- N H10F 19/75 . . the bypass diodes being integrated or directly associated with the photovoltaic cells, e.g. formed in or on the same substrate
- N H10F 19/80 . . Encapsulations or containers for integrated devices, or assemblies of multiple devices, having photovoltaic cells
- N H10F 19/804 . . {Materials of encapsulations}
- N H10F 19/807 . . {Double-glass encapsulation, e.g. photovoltaic cells arranged between front and rear glass sheets}
- N H10F 19/85 . . Protective back sheets

- N H10F 19/90
- Structures for connecting between photovoltaic cells, e.g. interconnections or insulating spacers (between thin-film photovoltaic cells on a single substrate [H10F 19/35](#))
- N H10F 19/902
- • {for series or parallel connection of photovoltaic cells}
- N H10F 19/904
- • • {characterised by the shapes of the structures}
- N H10F 19/906
- • • {characterised by the materials of the structures}
- N H10F 19/908
- • • {for back-contact photovoltaic cells}
- N H10F 30/00 - H10F 39/00**
- Radiation-controlled devices**
- N H10F 30/00**
- Individual radiation-sensitive semiconductor devices in which radiation controls the flow of current through the devices, e.g. photodetectors**
- WARNING**
- Group [H10F 30/00](#) is incomplete pending reclassification of documents from group [H10F 99/00](#).
Groups [H10F 99/00](#) and [H10F 30/00](#) should be considered in order to perform a complete search.
- N H10F 30/10
- the devices being sensitive to infrared radiation, visible or ultraviolet radiation, and having no potential barriers, e.g. photoresistors
- N H10F 30/15
- • {comprising amorphous semiconductors}
- N H10F 30/20
- the devices having potential barriers, e.g. phototransistors
- N H10F 30/21
- • the devices being sensitive to infrared, visible or ultraviolet radiation
- N H10F 30/22
- • • the devices having only one potential barrier, e.g. photodiodes
- N H10F 30/2205
- • • • {the potential barrier being a point contact}
- N H10F 30/221
- • • • the potential barrier being a PN homojunction
- N H10F 30/2212
- • • • • {the devices comprising active layers made of only Group II-VI materials, e.g. HgCdTe infrared photodiodes}
- N H10F 30/2215
- • • • • {the devices comprising active layers made of only Group III-V materials}
- N H10F 30/2218
- • • • • {the devices comprising active layers made of only Group IV-VI materials}
- N H10F 30/222
- • • • the potential barrier being a PN heterojunction
- N H10F 30/223
- • • • the potential barrier being a PIN barrier
- N H10F 30/2235
- • • • • {the devices comprising Group IV amorphous materials}
- N H10F 30/225
- • • • the potential barrier working in avalanche mode, e.g. avalanche photodiodes
- N H10F 30/2255
- • • • • {in which the active layers form heterostructures, e.g. SAM structures}
- N H10F 30/227
- • • • the potential barrier being a Schottky barrier
- N H10F 30/2275
- • • • • {being a metal-semiconductor-metal [MSM] Schottky barrier}
- N H10F 30/24
- • • the devices having only two potential barriers, e.g. bipolar phototransistors
- N H10F 30/245
- • • • {Bipolar phototransistors}
- N H10F 30/26
- • • the devices having three or more potential barriers, e.g. photothyristors
- N H10F 30/263
- • • • {Photothyristors}
- N H10F 30/2635
- • • • • {Static induction photothyristors}
- N H10F 30/28
- • • the devices being characterised by field-effect operation, e.g. junction field-effect phototransistors
- N H10F 30/282
- • • • Insulated-gate field-effect transistors [IGFET], e.g. MISFET [metal-insulator-semiconductor field-effect transistor] phototransistors

- N H10F 30/2823 . . . {the devices being conductor-insulator-semiconductor devices, e.g. diodes or charge-coupled devices [CCD] (Insulated-gate field-effect transistors [H10F 30/282](#))}
- N H10F 30/283 . . . {the devices having Schottky gates}
- N H10F 30/2837 . . . {CCDs having Schottky gates}
- N H10F 30/2843 . . . {Schottky gate FETs, e.g. photo MESFETs}
- N H10F 30/285 . . . {the devices having PN homojunction gates}
- N H10F 30/2857 . . . {CCDs having PN homojunction gates}
- N H10F 30/2863 . . . {Field-effect phototransistors having PN homojunction gates}
- N H10F 30/287 . . . {the devices having PN heterojunction gates}
- N H10F 30/2873 . . . {CCDs having PN heterojunction gates}
- N H10F 30/2877 . . . {Field-effect phototransistors having PN heterojunction gates}
- N H10F 30/288 . . {the devices being sensitive to multiple wavelengths, e.g. multi-spectrum radiation detection devices}
- N H10F 30/289 . . {the devices being transparent or semi-transparent devices}
- N H10F 30/29 . . the devices being sensitive to radiation having very short wavelengths, e.g. X-rays, gamma-rays or corpuscular radiation
- N H10F 30/292 . . Bulk-effect radiation detectors, e.g. Ge-Li compensated PIN gamma-ray detectors
- N H10F 30/2925 . . . {Li-compensated PIN gamma-ray detectors}
- N H10F 30/295 . . Surface barrier or shallow PN junction radiation detectors, e.g. surface barrier alpha-particle detectors
- N H10F 30/2955 . . . {Shallow PN junction radiation detectors}
- N H10F 30/298 . . the devices being characterised by field-effect operation, e.g. MIS type detectors
- N H10F 30/301 . {the devices being sensitive to very short wavelength, e.g. being sensitive to X-rays, gamma-rays or corpuscular radiation}
- N H10F 39/00** **Integrated devices, or assemblies of multiple devices, comprising at least one element covered by group [H10F 30/00](#), e.g. radiation detectors comprising photodiode arrays**
- WARNING**
- Groups [H10F 39/00](#) and [H10F 39/10](#) are incomplete pending reclassification of documents from group [H10F 99/00](#).
- Groups [H10F 99/00](#), [H10F 39/00](#) and [H10F 39/10](#) should be considered in order to perform a complete search.
- N H10F 39/011 . {Manufacture or treatment of image sensors covered by group [H10F 39/12](#)}
- N H10F 39/014 . . {of CMOS image sensors}
- N H10F 39/016 . . {of thin-film-based image sensors}
- N H10F 39/018 . . {of hybrid image sensors}
- N H10F 39/021 . . {of image sensors having active layers comprising only Group III-V materials, e.g. GaAs, AlGaAs or InP}
- N H10F 39/022 . . {of image sensors having active layers comprising only Group II-VI materials, e.g. CdS, ZnS or CdTe}
- N H10F 39/024 . . {of coatings or optical elements}
- N H10F 39/026 . . {Wafer-level processing}
- N H10F 39/028 . . {performed after manufacture of the image sensors, e.g. annealing, gettering of impurities, short-circuit elimination or recrystallisation}

N	H10F 39/10	• <i>Integrated devices</i>
N	H10F 39/103	• • {the at least one element covered by H10F 30/00 having potential barriers, e.g. integrated devices comprising photodiodes or phototransistors}
N	H10F 39/107	• • {having multiple elements covered by H10F 30/00 in a repetitive configuration, e.g. radiation detectors comprising photodiode arrays}
N	H10F 39/12	• • <i>Image sensors</i>
N	H10F 39/15	• • • <i>Charge-coupled device [CCD] image sensors</i>
N	H10F 39/151	• • • • {Geometry or disposition of pixel elements, address lines or gate electrodes}
N	H10F 39/1515	• • • • • {Optical shielding}
N	H10F 39/152	• • • • {One-dimensional array CCD image sensors}
N	H10F 39/153	• • • • {Two-dimensional or three-dimensional array CCD image sensors}
N	H10F 39/1532	• • • • • {Frame-interline transfer}
N	H10F 39/1534	• • • • • {Interline transfer}
N	H10F 39/1536	• • • • • {Frame transfer}
N	H10F 39/1538	• • • • • {Time-delay and integration}
N	H10F 39/154	• • • • {Charge-injection device [CID] image sensors (H10F 39/156 , H10F 39/157 take precedence)}
N	H10F 39/156	• • • • {CCD or CID colour image sensors}
N	H10F 39/157	• • • • {CCD or CID infrared image sensors}
N	H10F 39/1575	• • • • • {of the hybrid type}
N	H10F 39/158	• • • • {having arrangements for blooming suppression}
N	H10F 39/159	• • • • {comprising a photoconductive layer deposited on the CCD structure}
N	H10F 39/18	• • • <i>Complementary metal-oxide-semiconductor [CMOS] image sensors; Photodiode array image sensors</i>
N	H10F 39/182	• • • • {Colour image sensors}
N	H10F 39/1825	• • • • • {Multicolour image sensors having stacked structure, e.g. NPN, NPNPN or multiple quantum well [MQW] structures}
N	H10F 39/184	• • • • {Infrared image sensors}
N	H10F 39/1843	• • • • • {of the hybrid type}
N	H10F 39/1847	• • • • • {Multispectral infrared image sensors having a stacked structure, e.g. NPN, NPNPN or multiple quantum well [MQW] structures}
N	H10F 39/186	• • • • {having arrangements for blooming suppression}
N	H10F 39/1865	• • • • • {Overflow drain structures}
N	H10F 39/189	• • • • {X-ray, gamma-ray or corpuscular radiation imagers}
N	H10F 39/1892	• • • • • {Direct radiation image sensors}
N	H10F 39/1895	• • • • • {of the hybrid type}
N	H10F 39/1898	• • • • • {Indirect radiation image sensors, e.g. using luminescent members}
N	H10F 39/191	• • • {Photoconductor image sensors}
N	H10F 39/192	• • • • {Colour image sensors}
N	H10F 39/193	• • • • {Infrared image sensors}
N	H10F 39/1935	• • • • • {of the hybrid type}
N	H10F 39/194	• • • • {having arrangements for blooming suppression}
N	H10F 39/1945	• • • • • {Overflow drain structures}
N	H10F 39/195	• • • • {X-ray, gamma-ray or corpuscular radiation imagers}

- N H10F 39/196
- • • {Junction field effect transistor [JFET] image sensors; Static induction transistor [SIT] image sensors}
- N H10F 39/197
- • • {Bipolar transistor image sensors}
- N H10F 39/198
- • • {Contact-type image sensors [CIS]}
- N H10F 39/199
- • • {Back-illuminated image sensors}
- Q H10F 39/80
- {Constructional details of image sensors}
- WARNING
- Group [H10F 39/80](#) is impacted by reclassification into groups [H10F 39/802](#), [H10F 39/8023](#), [H10F 39/8027](#), [H10F 39/803](#), [H10F 39/8033](#), [H10F 39/8037](#), [H10F 39/80373](#), [H10F 39/80377](#), [H10F 39/804](#), [H10F 39/805](#), [H10F 39/8053](#), [H10F 39/8057](#), [H10F 39/806](#), [H10F 39/8063](#), [H10F 39/8067](#), [H10F 39/807](#), [H10F 39/809](#), [H10F 39/811](#), [H10F 39/812](#) and [H10F 39/813](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N H10F 39/802
- • {Geometry or disposition of elements in pixels, e.g. address-lines or gate electrodes}
- WARNING
- Groups [H10F 39/802](#) - [H10F 39/8027](#) are incomplete pending reclassification of documents from group [H10F 39/80](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N H10F 39/8023
- • • {Disposition of the elements in pixels, e.g. smaller elements in the centre of the imager compared to larger elements at the periphery}
- N H10F 39/8027
- • • {Geometry of the photosensitive area}
- N H10F 39/803
- • {Pixels having integrated switching, control, storage or amplification elements}
- WARNING
- Groups [H10F 39/803](#) - [H10F 39/80377](#) are incomplete pending reclassification of documents from group [H10F 39/80](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N H10F 39/8033
- • • {Photosensitive area}
- N H10F 39/8037
- • • {the integrated elements comprising a transistor}
- N H10F 39/80373
- • • • {characterised by the gate of the transistor}
- N H10F 39/80377
- • • • {characterised by the channel of the transistor, e.g. channel having a doping gradient}
- N H10F 39/804
- • {Containers or encapsulations}
- WARNING
- Group [H10F 39/804](#) is incomplete pending reclassification of documents from group [H10F 39/80](#).
Groups [H10F 39/80](#) and [H10F 39/804](#) should be considered in order to perform a complete search.
- N H10F 39/805
- • {Coatings}
- WARNING
- Groups [H10F 39/805](#) - [H10F 39/8057](#) are incomplete pending reclassification of documents from group [H10F 39/80](#).
All groups listed in this Warning should be considered in order to perform a complete search.

- N H10F 39/8053 • • • {Colour filters}
- N H10F 39/8057 • • • {Optical shielding}
- N H10F 39/806 • • {Optical elements or arrangements associated with the image sensors}
- WARNING
Groups [H10F 39/806](#) - [H10F 39/8067](#) are incomplete pending reclassification of documents from group [H10F 39/80](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N H10F 39/8063 • • • {Microlenses}
- N H10F 39/8067 • • • {Reflectors}
- N H10F 39/807 • • {Pixel isolation structures}
- WARNING
Group [H10F 39/807](#) is incomplete pending reclassification of documents from group [H10F 39/80](#).
Groups [H10F 39/80](#) and [H10F 39/807](#) should be considered in order to perform a complete search.
- N H10F 39/809 • • {of hybrid image sensors}
- WARNING
Group [H10F 39/809](#) is incomplete pending reclassification of documents from group [H10F 39/80](#).
Groups [H10F 39/80](#) and [H10F 39/809](#) should be considered in order to perform a complete search.
- N H10F 39/811 • • {Interconnections}
- WARNING
Group [H10F 39/811](#) is incomplete pending reclassification of documents from group [H10F 39/80](#).
Groups [H10F 39/80](#) and [H10F 39/811](#) should be considered in order to perform a complete search.
- N H10F 39/812 • • {Arrangements for transferring the charges in the image sensor perpendicular to the imaging plane, e.g. buried regions used to transfer generated charges to circuitry under the photosensitive region}
- WARNING
Group [H10F 39/812](#) is incomplete pending reclassification of documents from group [H10F 39/80](#).
Groups [H10F 39/80](#) and [H10F 39/812](#) should be considered in order to perform a complete search.
- N H10F 39/813 • • {Electronic components shared by multiple pixels, e.g. one amplifier shared by two pixels}
- WARNING
Group [H10F 39/813](#) is incomplete pending reclassification of documents from group [H10F 39/80](#).
Groups [H10F 39/80](#) and [H10F 39/813](#) should be considered in order to perform a complete search.
- N H10F 39/90 • Assemblies of multiple devices
- N H10F 39/95 • • comprising at least one integrated device covered by group [H10F 39/10](#), e.g. comprising integrated image sensors

N	H10F 55/00 - H10F 55/00	<u>Other devices</u>
N	H10F 55/00	<i>Radiation-sensitive semiconductor devices covered by groups H10F 10/00, H10F 19/00 or H10F 30/00 being structurally associated with electric light sources and electrically or optically coupled thereto</i>
N	H10F 55/10	• wherein the radiation-sensitive semiconductor devices control the electric light source, e.g. image converters, image amplifiers or image storage devices
N	H10F 55/15	• • wherein the radiation-sensitive devices and the electric light source are all semiconductor devices
N	H10F 55/155	• • • formed in, or on, a common substrate
N	H10F 55/16	• • {wherein the radiation-sensitive semiconductor devices have no potential barriers}
N	H10F 55/165	• • • {wherein the electric light source comprises semiconductor devices having potential barriers, e.g. light emitting diodes}
N	H10F 55/17	• • {wherein the radiation-sensitive semiconductor devices have potential barriers}
N	H10F 55/18	• {wherein the radiation-sensitive semiconductor devices and the electric light source share a common body having dual-functionality of light emission and light detection}
N	H10F 55/20	• wherein the electric light source controls the radiation-sensitive semiconductor devices, e.g. optocouplers
N	H10F 55/205	• • {wherein the radiation-sensitive semiconductor devices have no potential barriers, e.g. photoresistors}
N	H10F 55/207	• • • {wherein the electric light source comprises semiconductor devices having potential barriers, e.g. light emitting diodes}
N	H10F 55/208	• • • {Optical potentiometers}
N	H10F 55/25	• • wherein the radiation-sensitive devices and the electric light source are all semiconductor devices
N	H10F 55/255	• • • formed in, or on, a common substrate
N	H10F 55/26	• • {wherein the radiation-sensitive semiconductor devices have potential barriers}
N	H10F 71/00 - H10F 77/00	<u>Manufacture or treatment; Constructional details</u>
Q	H10F 71/00	<i>Manufacture or treatment of devices covered by this subclass (patterning processes to connect thin photovoltaic cells in integrated devices, or assemblies of multiple devices, having photovoltaic cells H10F 19/33; manufacture or treatment of encapsulations or containers for integrated devices, or assemblies of multiple devices, having photovoltaic cells H10F 19/80; manufacture or treatment of integrated devices, or assemblies of multiple devices, comprising at least one element in which radiation controls the flow of current H10F 39/00)</i>
		<u>WARNING</u>
		Group H10F 71/00 is impacted by reclassification into groups H10F 71/128 , H10F 71/129 , H10F 71/131 , H10F 71/132 , H10F 71/133 , H10F 71/134 , H10F 71/135 and H10F 71/136 .
		All groups listed in this Warning should be considered in order to perform a complete search.

- Q H10F 71/10
- the devices comprising amorphous semiconductor material
- WARNING
Group [H10F 71/10](#) is impacted by reclassification into groups [H10F 71/103](#), [H10F 71/1035](#), [H10F 71/107](#), [H10F 71/128](#), [H10F 71/129](#), [H10F 71/131](#), [H10F 71/132](#), [H10F 71/133](#), [H10F 71/134](#), [H10F 71/135](#), [H10F 71/136](#), [H10F 71/137](#), [H10F 71/1375](#), [H10F 71/138](#), [H10F 71/1385](#), [H10F 71/139](#) and [H10F 71/1395](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N H10F 71/103
- {including only Group IV materials}
- WARNING
Groups [H10F 71/103](#) and [H10F 71/1035](#) are incomplete pending reclassification of documents from group [H10F 71/10](#).
Groups [H10F 71/10](#), [H10F 71/103](#) and [H10F 71/1035](#) should be considered in order to perform a complete search.
- N H10F 71/1035
- • {having multiple Group IV elements, e.g. SiGe or SiC}
- N H10F 71/107
- {Continuous treatment of the devices, e.g. roll-to roll processes or multi-chamber deposition}
- WARNING
Group [H10F 71/107](#) is incomplete pending reclassification of documents from group [H10F 71/10](#).
Groups [H10F 71/10](#) and [H10F 71/107](#) should be considered in order to perform a complete search.
- N H10F 71/121
- {The active layers comprising only Group IV materials}
- N H10F 71/1212
- {consisting of germanium}
- N H10F 71/1215
- {comprising at least two Group IV elements, e.g. SiGe}
- N H10F 71/1218
- • {in microcrystalline form}
- N H10F 71/1221
- {comprising polycrystalline silicon}
- N H10F 71/1224
- {comprising microcrystalline silicon}
- N H10F 71/125
- {The active layers comprising only Group II-VI materials, e.g. CdS, ZnS or CdTe}
- N H10F 71/1253
- {comprising at least three elements, e.g. HgCdTe}
- N H10F 71/1257
- {comprising growth substrates not made of Group II-VI materials}
- N H10F 71/127
- {The active layers comprising only Group III-V materials, e.g. GaAs or InP}
- N H10F 71/1272
- {comprising at least three elements, e.g. GaAlAs or InGaAsP}
- N H10F 71/1274
- • {comprising nitrides, e.g. InGaN or InGaAlN}
- N H10F 71/1276
- {comprising growth substrates not made of Group III-V materials}
- N H10F 71/1278
- {comprising nitrides, e.g. GaN}
- N H10F 71/128
- {Annealing}
- WARNING
Group [H10F 71/128](#) is incomplete pending reclassification of documents from groups [H10F 71/00](#) and [H10F 71/10](#).
Groups [H10F 71/00](#), [H10F 71/10](#) and [H10F 71/128](#) should be considered in order to perform a complete search.

- N H10F 71/129
- {Passivating}
- WARNING
Group [H10F 71/129](#) is incomplete pending reclassification of documents from groups [H10F 71/00](#) and [H10F 71/10](#).
Groups [H10F 71/00](#), [H10F 71/10](#) and [H10F 71/129](#) should be considered in order to perform a complete search.
- N H10F 71/131
- {Recrystallisation; Crystallization of amorphous or microcrystalline semiconductors}
- WARNING
Group [H10F 71/131](#) is incomplete pending reclassification of documents from groups [H10F 71/00](#) and [H10F 71/10](#).
Groups [H10F 71/00](#), [H10F 71/10](#) and [H10F 71/131](#) should be considered in order to perform a complete search.
- N H10F 71/132
- {Gettering}
- WARNING
Group [H10F 71/132](#) is incomplete pending reclassification of documents from groups [H10F 71/00](#) and [H10F 71/10](#).
Groups [H10F 71/00](#), [H10F 71/10](#) and [H10F 71/132](#) should be considered in order to perform a complete search.
- N H10F 71/133
- {Providing edge isolation}
- WARNING
Group [H10F 71/133](#) is incomplete pending reclassification of documents from groups [H10F 71/00](#) and [H10F 71/10](#).
Groups [H10F 71/00](#), [H10F 71/10](#) and [H10F 71/133](#) should be considered in order to perform a complete search.
- N H10F 71/134
- {Irradiation with electromagnetic or particle radiation}
- WARNING
Group [H10F 71/134](#) is incomplete pending reclassification of documents from group [H10F 71/00](#).
Groups [H10F 71/00](#) and [H10F 71/134](#) should be considered in order to perform a complete search.
- N H10F 71/135
- {Application of a bias; Current injection}
- WARNING
Group [H10F 71/135](#) is incomplete pending reclassification of documents from groups [H10F 71/00](#) and [H10F 71/10](#).
Groups [H10F 71/00](#), [H10F 71/10](#) and [H10F 71/135](#) should be considered in order to perform a complete search.
- N H10F 71/136
- {Singulating, e.g. dicing}
- WARNING
Group [H10F 71/136](#) is incomplete pending reclassification of documents from group [H10F 71/00](#).
Groups [H10F 71/00](#) and [H10F 71/136](#) should be considered in order to perform a complete search.
- N H10F 71/137
- {Batch treatment of the devices}
- WARNING
Groups [H10F 71/137](#) and [H10F 71/1375](#) are incomplete pending reclassification of documents from group [H10F 71/10](#).

Groups [H10F 71/10](#), [H10F 71/137](#) and [H10F 71/1375](#) should be considered in order to perform a complete search.

- N H10F 71/1375 • • {Apparatus for automatic interconnection of photovoltaic cells in a module}
- N H10F 71/138 • {Manufacture of transparent electrodes, e.g. transparent conductive oxides [TCO] or indium tin oxide [ITO] electrodes}

WARNING

Groups [H10F 71/138](#) and [H10F 71/1385](#) are incomplete pending reclassification of documents from group [H10F 71/10](#).

Groups [H10F 71/10](#), [H10F 71/138](#) and [H10F 71/1385](#) should be considered in order to perform a complete search.

- N H10F 71/1385 • • {Etching transparent electrodes}
- N H10F 71/139 • {using temporary substrates}

WARNING

Groups [H10F 71/139](#) and [H10F 71/1395](#) are incomplete pending reclassification of documents from group [H10F 71/10](#).

Groups [H10F 71/10](#), [H10F 71/139](#) and [H10F 71/1395](#) should be considered in order to perform a complete search.

- N H10F 71/1395 • • {for thin-film devices}

N H10F 77/00 *Constructional details of devices covered by this subclass (constructional details of integrated devices, or assemblies of multiple devices, comprising at least one element in which radiation controls the flow of current [H10F 39/00](#))*

NOTE

When classifying in this group, the type of device itself, when it is determined to be novel and nonobvious, should be classified in groups [H10F 10/00](#), [H10F 19/00](#), [H10F 30/00](#) or [H10F 55/00](#).

- N H10F 77/10 • Semiconductor bodies
- N H10F 77/12 • • Active materials

NOTE

When classifying in this group, constituents of a material are considered irrespective of any dopants or other impurities.

- N H10F 77/121 • • • comprising only selenium or only tellurium
- N H10F 77/1215 • • • • {characterised by the dopants}
- N H10F 77/122 • • • comprising only Group IV materials
- N H10F 77/1223 • • • • characterised by the dopants
- N H10F 77/1226 • • • • comprising multiple Group IV elements, e.g. SiC
- N H10F 77/1227 • • • • • {characterised by the dopants}
- N H10F 77/1228 • • • • • {porous silicon}
- N H10F 77/123 • • • comprising only Group II-VI materials, e.g. CdS, ZnS or HgCdTe
- N H10F 77/1233 • • • • {characterised by the dopants}
- N H10F 77/1237 • • • • {having at least three elements, e.g. HgCdTe}
- N H10F 77/124 • • • comprising only Group III-V materials, e.g. GaAs
- N H10F 77/1243 • • • • {characterised by the dopants}
- N H10F 77/1246 • • • • {III-V nitrides, e.g. GaN}
- N H10F 77/1248 • • • • {having three or more elements, e.g. GaAlAs, InGaAs or InGaAsP}
- N H10F 77/12485 • • • • • {comprising nitride compounds, e.g. InGaN}

- N H10F 77/126 . . . {comprising only Group I-III-VI chalcopyrite materials, e.g. CuInSe_2 , CuGaSe_2 or CuInGaSe_2 [CIGS]}
- N H10F 77/1265 {characterised by the dopants}
- N H10F 77/127 . . . {comprising only Group IV-VI or only Group II-IV-VI chalcogenide materials, e.g. PbSnTe }
- N H10F 77/1275 {characterised by the dopants}
- N H10F 77/128 . . . {comprising only Group I-II-IV-VI kesterite materials, e.g. $\text{Cu}_2\text{ZnSnSe}_4$ or $\text{Cu}_2\text{ZnSnS}_4$ }
- N H10F 77/1285 {characterised by the dopants}
- N H10F 77/14 . . Shape of semiconductor bodies; Shapes, relative sizes or dispositions of semiconductor regions within semiconductor bodies
- N H10F 77/143 . . . {comprising quantum structures}
- N H10F 77/1433 {Quantum dots}
- N H10F 77/1437 {Quantum wires or nanorods}
- N H10F 77/146 . . . {Superlattices; Multiple quantum well structures}
- N H10F 77/1462 {comprising amorphous semiconductor layers}
- N H10F 77/1465 {including only Group IV materials, e.g. Si-SiGe superlattices}
- N H10F 77/1468 {Doped superlattices, e.g. N-I-P-I superlattices}
- N H10F 77/147 . . . {Shapes of bodies}
- N H10F 77/148 . . . {Shapes of potential barriers}
- N H10F 77/16 . . Material structures, e.g. crystalline structures, film structures or crystal plane orientations
- N H10F 77/162 . . . Non-monocrystalline materials, e.g. semiconductor particles embedded in insulating materials ([H10F 77/169](#) takes precedence)
- N H10F 77/1625 {Semiconductor nanoparticles embedded in semiconductor matrix}
- N H10F 77/164 Polycrystalline semiconductors
- N H10F 77/1642 {including only Group IV materials}
- N H10F 77/1645 {including microcrystalline silicon}
- N H10F 77/1648 {including microcrystalline Group IV-IV materials, e.g. microcrystalline SiGe}
- N H10F 77/166 Amorphous semiconductors
- N H10F 77/1662 {including only Group IV materials}
- N H10F 77/1665 {including Group IV-IV materials, e.g. SiGe or SiC}
- N H10F 77/1668 {presenting light-induced characteristic variations, e.g. Staebler-Wronski effect}
- N H10F 77/169 . . . Thin semiconductor films on metallic or insulating substrates
- N H10F 77/1692 {the films including only Group IV materials}
- N H10F 77/1694 {the films including Group I-III-VI materials, e.g. CIS or CIGS}
- N H10F 77/1696 {the films including Group II-VI materials, e.g. CdTe or CdS}
- N H10F 77/1698 {the metallic or insulating substrates being flexible}
- N H10F 77/1699 {the films including Group I-III-VI materials, e.g. CIS or CIGS on metal foils or polymer foils}
- N H10F 77/20 . Electrodes
- N H10F 77/206 . . {for devices having potential barriers}
- N H10F 77/211 . . . {for photovoltaic cells}
- N H10F 77/215 {Geometries of grid contacts}

- N H10F 77/219 . . . {Arrangements for electrodes of back-contact photovoltaic cells}
- N H10F 77/223 {for metallisation wrap-through [MWT] photovoltaic cells}
- N H10F 77/227 {for emitter wrap-through [EWT] photovoltaic cells, e.g. interdigitated emitter-base back-contacts}
- N H10F 77/241 . . . {comprising ring electrodes}
- N H10F 77/244 . . {made of transparent conductive layers, e.g. transparent conductive oxide [TCO] layers}
- N H10F 77/247 . . . {comprising indium tin oxide [ITO]}
- N H10F 77/251 . . . {comprising zinc oxide [ZnO]}
- N H10F 77/254 . . . {comprising a metal, e.g. transparent gold}
- N H10F 77/30 . Coatings (arrangements for preventing damage to photovoltaic cells caused by corpuscular radiation [H10F 77/80](#))
- N H10F 77/306 . . {for devices having potential barriers}
- N H10F 77/311 . . . {for photovoltaic cells}
- N H10F 77/315 {the coatings being antireflective or having enhancing optical properties}
- N H10F 77/331 . . . {for filtering or shielding light, e.g. multicolour filters for photodetectors}
- N H10F 77/334 {for shielding light, e.g. light blocking layers or cold shields for infrared detectors}
- N H10F 77/337 {using interference filters, e.g. multilayer dielectric filters}
- N H10F 77/40 . Optical elements or arrangements (surface textures [H10F 77/70](#))
- N H10F 77/407 . . {indirectly associated with the devices}
- N H10F 77/413 . . {directly associated or integrated with the devices, e.g. back reflectors (directly associated or integrated with photovoltaic cells [H10F 77/42](#))}
- N H10F 77/42 . . directly associated or integrated with photovoltaic cells, e.g. light-reflecting means or light-concentrating means
- N H10F 77/45 . . . Wavelength conversion means, e.g. by using luminescent material, fluorescent concentrators or up-conversion arrangements
- N H10F 77/48 . . . Back surface reflectors [BSR]
- N H10F 77/484 . . . {Refractive light-concentrating means, e.g. lenses}
- N H10F 77/488 . . . {Reflecting light-concentrating means, e.g. parabolic mirrors or concentrators using total internal reflection}
- N H10F 77/492 . . . {Spectrum-splitting means, e.g. dichroic mirrors}
- N H10F 77/496 . . {Luminescent members, e.g. fluorescent sheets (wavelength conversion means for photovoltaic cells [H10F 77/45](#))}
- N H10F 77/50 . Encapsulations or containers (for photovoltaic modules [H10F 19/80](#))
- N H10F 77/60 . Arrangements for cooling, heating, ventilating or compensating for temperature fluctuations
- N H10F 77/63 . . Arrangements for cooling directly associated or integrated with photovoltaic cells, e.g. heat sinks directly associated with the photovoltaic cells or integrated Peltier elements for active cooling
- N H10F 77/67 . . . including means to utilise heat energy directly associated with the photovoltaic cells, e.g. integrated Seebeck elements
- N H10F 77/68 . . . {using gaseous or liquid coolants, e.g. air flow ventilation or water circulation}
- N H10F 77/70 . Surface textures, e.g. pyramid structures
- N H10F 77/703 . . {of the semiconductor bodies, e.g. textured active layers}
- N H10F 77/707 . . {of the substrates or of layers on substrates, e.g. textured ITO layer on a glass substrate}

- N H10F 77/80 • Arrangements for preventing damage to photovoltaic cells caused by corpuscular radiation, e.g. for space applications
- N H10F 77/90 • Energy storage means directly associated or integrated with photovoltaic cells, e.g. capacitors integrated with photovoltaic cells
- N H10F 77/93 • {Interconnections}
- N H10F 77/933 • • {for devices having potential barriers}
- N H10F 77/935 • • • {for photovoltaic devices or modules}
- N H10F 77/937 • • • • {Busbar structures for modules}
- N H10F 77/939 • • • • {Output lead wires or elements}
- N H10F 77/95 • {Circuit arrangements}
- N H10F 77/953 • • {for devices having potential barriers}
- N H10F 77/955 • • • {for photovoltaic devices}
- N H10F 77/957 • • • {for position-sensitive photodetectors, e.g. lateral-effect photodiodes or quadrant photodiodes}
- N H10F 77/959 • • • {for devices working in avalanche mode}
- Q H10F 99/00** **Subject matter not provided for in other groups of this subclass**

WARNING

Group [H10F 99/00](#) is impacted by reclassification into groups [H10F 10/00](#), [H10F 19/00](#), [H10F 30/00](#), [H10F 39/00](#) and [H10F 39/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

Project: RP12457 (H10H)

N H10H **INORGANIC LIGHT-EMITTING SEMICONDUCTOR DEVICES HAVING POTENTIAL BARRIERS**

NOTES

1. This subclass covers inorganic light-emitting semiconductor devices that emit visible, infrared [IR] or ultraviolet [UV] light. This includes light-emitting diodes [LED] and superluminescent diodes [SLD].

2. This subclass does not cover semiconductor lasers, which are covered by group [H01S 5/00](#).

3. In this subclass, the periodic system used is the I to VIII group system indicated in the Periodic Table under Note (3) of section [C](#).

N H10H 20/00 **Individual inorganic light-emitting semiconductor devices having potential barriers, e.g. light-emitting diodes [LED]**

- Q H10H 20/01** • Manufacture or treatment

WARNING

Group [H10H 20/01](#) is impacted by reclassification into groups [H10H 20/011](#), [H10H 20/016](#), [H10H 20/0165](#), [H10H 20/017](#), [H10H 20/021](#), [H10H 20/032](#), [H10H 20/034](#), [H10H 20/036](#), [H10H 20/0362](#), [H10H 20/0363](#), [H10H 20/0364](#), [H10H 20/0365](#), [H10H 29/01](#), [H10H 29/011](#), [H10H 29/012](#), [H10H 29/02](#), [H10H 29/03](#), [H10H 29/032](#), [H10H 29/034](#), [H10H 29/036](#), [H10H 29/0361](#), [H10H 29/0362](#), [H10H 29/0363](#), [H10H 29/0364](#) and [H10H 29/0365](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N H10H 20/011
- • {of bodies, e.g. forming semiconductor layers}
- WARNING
Groups [H10H 20/011](#), [H10H 20/016](#), [H10H 20/0165](#) and [H10H 20/017](#) are incomplete pending reclassification of documents from group [H10H 20/01](#). All groups listed in this Warning should be considered in order to perform a complete search.
- N H10H 20/012
- • • {having light-emitting regions comprising only Group II-IV materials}
- N H10H 20/0125
- • • • {with a substrate not being Group II-VI materials}
- N H10H 20/013
- • • {having light-emitting regions comprising only Group III-V materials}
- N H10H 20/0133
- • • • {with a substrate not being Group III-V materials}
- N H10H 20/01335
- • • • • {the light-emitting regions comprising nitride materials}
- N H10H 20/0137
- • • • {the light-emitting regions comprising nitride materials}
- Q H10H 20/014
- • • {having light-emitting regions comprising only Group IV materials}
- WARNING
Group [H10H 20/014](#) is impacted by reclassification into group [H10H 20/0145](#). Groups [H10H 20/014](#) and [H10H 20/0145](#) should be considered in order to perform a complete search.
- N H10H 20/0145
- • • • {comprising polycrystalline, amorphous or porous Group IV materials}
- WARNING
Group [H10H 20/0145](#) is incomplete pending reclassification of documents from group [H10H 20/014](#). Groups [H10H 20/014](#) and [H10H 20/0145](#) should be considered in order to perform a complete search.
- N H10H 20/016
- • • {Thermal treatments}
- N H10H 20/0165
- • • • {for recrystallisation}
- N H10H 20/017
- • • {Etching}
- Q H10H 20/018
- • • {Bonding of wafers}
- WARNING
Group [H10H 20/018](#) is impacted by reclassification into group [H10H 20/019](#). Groups [H10H 20/018](#) and [H10H 20/019](#) should be considered in order to perform a complete search.
- N H10H 20/019
- • • {Removal of at least a part of a substrate on which semiconductor layers have been formed}
- WARNING
Group [H10H 20/019](#) is incomplete pending reclassification of documents from group [H10H 20/018](#). Groups [H10H 20/018](#) and [H10H 20/019](#) should be considered in order to perform a complete search.
- N H10H 20/021
- • {Singulating, e.g. dicing}
- WARNING
Group [H10H 20/021](#) is incomplete pending reclassification of documents from group [H10H 20/01](#). Groups [H10H 20/01](#) and [H10H 20/021](#) should be considered in order to perform a complete search.

- Q H10H 20/032 • • {of electrodes}
- WARNING
Group [H10H 20/032](#) is incomplete pending reclassification of documents from group [H10H 20/01](#).
Group [H10H 20/032](#) is also impacted by reclassification into group [H10H 29/032](#).
Groups [H10H 20/01](#), [H10H 20/032](#) and [H10H 29/032](#) should be considered in order to perform a complete search.
- Q H10H 20/034 • • {of coatings}
- WARNING
Group [H10H 20/034](#) is incomplete pending reclassification of documents from group [H10H 20/01](#).
Group [H10H 20/034](#) is also impacted by reclassification into group [H10H 29/034](#).
Groups [H10H 20/01](#), [H10H 20/034](#) and [H10H 29/034](#) should be considered in order to perform a complete search.
- Q H10H 20/036 • • {of packages}
- WARNING
Group [H10H 20/036](#) is incomplete pending reclassification of documents from group [H10H 20/01](#).
Group [H10H 20/036](#) is also impacted by reclassification into group [H10H 29/036](#).
Groups [H10H 20/01](#), [H10H 20/036](#) and [H10H 29/036](#) should be considered in order to perform a complete search.
- Q H10H 20/0361 • • • {of wavelength conversion means}
- WARNING
Group [H10H 20/0361](#) is impacted by reclassification into group [H10H 29/0361](#).
Groups [H10H 20/0361](#) and [H10H 29/0361](#) should be considered in order to perform a complete search.
- Q H10H 20/0362 • • • {of encapsulations}
- WARNING
Group [H10H 20/0362](#) is incomplete pending reclassification of documents from group [H10H 20/01](#).
Group [H10H 20/0362](#) is also impacted by reclassification into group [H10H 29/0362](#).
Groups [H10H 20/01](#), [H10H 20/0362](#) and [H10H 29/0362](#) should be considered in order to perform a complete search.
- Q H10H 20/0363 • • • {of optical field-shaping means}
- WARNING
Group [H10H 20/0363](#) is incomplete pending reclassification of documents from group [H10H 20/01](#).
Group [H10H 20/0363](#) is also impacted by reclassification into group [H10H 29/0363](#).
Groups [H10H 20/01](#), [H10H 20/0363](#) and [H10H 29/0363](#) should be considered in order to perform a complete search.

- Q H10H 20/0364 • • • {of interconnections}
- WARNING
 Group [H10H 20/0364](#) is incomplete pending reclassification of documents from group [H10H 20/01](#).
 Group [H10H 20/0364](#) is also impacted by reclassification into group [H10H 29/0364](#).
 Groups [H10H 20/01](#), [H10H 20/0364](#) and [H10H 29/0364](#) should be considered in order to perform a complete search.
- Q H10H 20/0365 • • • {of means for heat extraction or cooling}
- WARNING
 Group [H10H 20/0365](#) is incomplete pending reclassification of documents from group [H10H 20/01](#).
 Group [H10H 20/0365](#) is also impacted by reclassification into group [H10H 29/0365](#).
 Groups [H10H 20/01](#), [H10H 20/0365](#) and [H10H 29/0365](#) should be considered in order to perform a complete search.
- N H10H 20/042 • {Superluminescent diodes}
- N H10H 20/052 • {Light-emitting semiconductor devices having Schottky type light-emitting regions; Light emitting semiconductor devices having Metal-Insulator-Semiconductor type light-emitting regions}
- N H10H 20/062 • {Light-emitting semiconductor devices having field effect type light-emitting regions, e.g. light-emitting High-Electron Mobility Transistors}
- Q H10H 20/80 • Constructional details
- WARNING
 Group [H10H 20/80](#) is impacted by reclassification into groups [H10H 29/80](#), [H10H 29/8517](#) and [H10H 29/8552](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- N H10H 20/81 • • Bodies
- Q H10H 20/811 • • • having quantum effect structures or superlattices, e.g. tunnel junctions
- WARNING
 Group [H10H 20/811](#) is impacted by reclassification into group [H10H 20/812](#).
 Groups [H10H 20/811](#) and [H10H 20/812](#) should be considered in order to perform a complete search.
- N H10H 20/812 • • • within the light-emitting regions, e.g. having quantum confinement structures
- WARNING
 Group [H10H 20/812](#) is incomplete pending reclassification of documents from group [H10H 20/811](#).
 Groups [H10H 20/811](#) and [H10H 20/812](#) should be considered in order to perform a complete search.
- Q H10H 20/813 • • • having a plurality of light-emitting regions, e.g. multi-junction LEDs or light-emitting devices having photoluminescent regions within the bodies
- WARNING
 Group [H10H 20/813](#) is impacted by reclassification into groups [H10H 20/8131](#), [H10H 20/8132](#) and [H10H 20/8133](#).
 All groups listed in this Warning should be considered in order to perform a complete search.

- N H10H 20/8131 . . . {Stacked light-emitting regions}
- WARNING
Group [H10H 20/8131](#) is incomplete pending reclassification of documents from group [H10H 20/813](#).
Groups [H10H 20/813](#) and [H10H 20/8131](#) should be considered in order to perform a complete search.
- N H10H 20/8132 . . . {Laterally arranged light-emitting regions, e.g. nano-rods}
- WARNING
Groups [H10H 20/8132](#) and [H10H 20/8133](#) are incomplete pending reclassification of documents from group [H10H 20/813](#).
Groups [H10H 20/813](#), [H10H 20/8132](#) and [H10H 20/8133](#) should be considered in order to perform a complete search.
- N H10H 20/8133 . . . {having core-shell structures}
- N H10H 20/814 . . . having reflecting means, e.g. semiconductor Bragg reflectors
- N H10H 20/8142 . . . {forming resonant cavity structures}
- N H10H 20/815 . . . having stress relaxation structures, e.g. buffer layers
- N H10H 20/816 . . . having carrier transport control structures, e.g. highly-doped semiconductor layers or current-blocking structures
- N H10H 20/8162 . . . {Current-blocking structures}
- N H10H 20/817 . . . characterised by the crystal structures or orientations, e.g. polycrystalline, amorphous or porous
- N H10H 20/818 . . . within the light-emitting regions
- NOTE
When classifying in this group, classification is also made in group [H10H 20/822](#) in order to identify the chemical composition of the light-emitting region.
- N H10H 20/819 . . . characterised by their shape, e.g. curved or truncated substrates
- N H10H 20/82 . . . Roughened surfaces, e.g. at the interface between epitaxial layers
- N H10H 20/821 . . . of the light-emitting regions, e.g. non-planar junctions
- N H10H 20/8215 . . . {characterised by crystalline imperfections, e.g. dislocations; characterised by the distribution of dopants, e.g. delta-doping}
- N H10H 20/822 . . . Materials of the light-emitting regions
- NOTE
When classifying in this group, constituents of a material are considered irrespective of any dopants or other impurities.
- N H10H 20/823 . . . comprising only Group II-VI materials, e.g. ZnO
- N H10H 20/8232 . . . {characterised by the dopants}
- N H10H 20/824 . . . comprising only Group III-V materials, e.g. GaP
- N H10H 20/8242 . . . {characterised by the dopants}
- N H10H 20/825 . . . containing nitrogen, e.g. GaN
- N H10H 20/8252 . . . {characterised by the dopants}
- Q H10H 20/826 . . . comprising only Group IV materials
- WARNING
Group [H10H 20/826](#) is impacted by reclassification into group [H10H 20/8264](#).

Groups [H10H 20/826](#) and [H10H 20/8264](#) should be considered in order to perform a complete search.

- N H10H 20/8262 {characterised by the dopants}
- N H10H 20/8264 {comprising polycrystalline, amorphous or porous Group IV materials}

WARNING

Group [H10H 20/8264](#) is incomplete pending reclassification of documents from group [H10H 20/826](#).

Groups [H10H 20/826](#) and [H10H 20/8264](#) should be considered in order to perform a complete search.

- Q H10H 20/83 . . Electrodes

WARNING

Group [H10H 20/83](#) is impacted by reclassification into group [H10H 29/832](#).

Groups [H10H 20/83](#) and [H10H 29/832](#) should be considered in order to perform a complete search.

- Q H10H 20/831 . . . characterised by their shape

WARNING

Group [H10H 20/831](#) is impacted by reclassification into group [H10H 29/8321](#).

Groups [H10H 20/831](#) and [H10H 29/8321](#) should be considered in order to perform a complete search.

- N H10H 20/8312 {extending at least partially through the bodies}
- N H10H 20/8314 {extending at least partially onto an outer side surface of the bodies}
- N H10H 20/8316 {Multi-layer electrodes comprising at least one discontinuous layer}
- Q H10H 20/832 . . . characterised by their material

WARNING

Group [H10H 20/832](#) is impacted by reclassification into group [H10H 29/8322](#).

Groups [H10H 20/832](#) and [H10H 29/8322](#) should be considered in order to perform a complete search.

- Q H10H 20/833 Transparent materials

WARNING

Group [H10H 20/833](#) is impacted by reclassification into group [H10H 29/8323](#).

Groups [H10H 20/833](#) and [H10H 29/8323](#) should be considered in order to perform a complete search.

- Q H10H 20/835 {Reflective materials}

WARNING

Group [H10H 20/835](#) is impacted by reclassification into group [H10H 29/8325](#).

Groups [H10H 20/835](#) and [H10H 29/8325](#) should be considered in order to perform a complete search.

- Q H10H 20/84 . . Coatings, e.g. passivation layers or antireflective coatings

WARNING

Group [H10H 20/84](#) is impacted by reclassification into groups [H10H 29/842](#), [H10H 29/8517](#) and [H10H 29/8552](#).

All groups listed in this Warning should be considered in order to perform a complete search.

Q H10H 20/841

- • Reflective coatings, e.g. dielectric Bragg reflectors

WARNING

Group [H10H 20/841](#) is impacted by reclassification into group [H10H 29/8421](#).

Groups [H10H 20/841](#) and [H10H 29/8421](#) should be considered in order to perform a complete search.

Q H10H 20/85

- • Packages

WARNING

Group [H10H 20/85](#) is impacted by reclassification into groups [H10H 20/8504](#), [H10H 20/8508](#), [H10H 29/85](#), [H10H 29/8508](#), [H10H 29/8517](#) and [H10H 29/8552](#).

All groups listed in this Warning should be considered in order to perform a complete search.

N H10H 20/8502

- • {Surface mount technology [SMT] type packages}

WARNING

Group [H10H 20/8502](#) is incomplete pending reclassification of documents from group [H10H 20/8506](#).

Groups [H10H 20/8506](#) and [H10H 20/8502](#) should be considered in order to perform a complete search.

N H10H 20/8504

- • {Chip-scale type packages}

WARNING

Group [H10H 20/8504](#) is incomplete pending reclassification of documents from groups [H10H 20/85](#) and [H10H 20/8506](#).

Groups [H10H 20/85](#), [H10H 20/8506](#) and [H10H 20/8504](#) should be considered in order to perform a complete search.

Q H10H 20/8506

- • {Containers}

WARNING

Group [H10H 20/8506](#) is impacted by reclassification into groups [H10H 20/8502](#), [H10H 20/8504](#), [H10H 20/8508](#), [H10H 29/8506](#) and [H10H 29/8508](#).

All groups listed in this Warning should be considered in order to perform a complete search.

N H10H 20/8508

- • {Package substrates, e.g. submounts}

WARNING

Group [H10H 20/8508](#) is incomplete pending reclassification of documents from groups [H10H 20/85](#) and [H10H 20/8506](#).

Groups [H10H 20/85](#), [H10H 20/8506](#) and [H10H 20/8508](#) should be considered in order to perform a complete search.

Q H10H 20/851

- • Wavelength conversion means

WARNING

Group [H10H 20/851](#) is impacted by reclassification into group [H10H 29/851](#).

Groups [H10H 20/851](#) and [H10H 29/851](#) should be considered in order to perform a complete search.

- Q H10H 20/8511 . . . {characterised by their material, e.g. binder}
WARNING
 Group [H10H 20/8511](#) is impacted by reclassification into group [H10H 29/8511](#).
 Groups [H10H 20/8511](#) and [H10H 29/8511](#) should be considered in order to perform a complete search.
- Q H10H 20/8512 . . . {Wavelength conversion materials}
WARNING
 Group [H10H 20/8512](#) is impacted by reclassification into group [H10H 29/8512](#).
 Groups [H10H 20/8512](#) and [H10H 29/8512](#) should be considered in order to perform a complete search.
- Q H10H 20/8513 . . . {having two or more wavelength conversion materials}
WARNING
 Group [H10H 20/8513](#) is impacted by reclassification into group [H10H 29/8513](#).
 Groups [H10H 20/8513](#) and [H10H 29/8513](#) should be considered in order to perform a complete search.
- Q H10H 20/8514 . . . {characterised by their shape, e.g. plate or foil}
WARNING
 Group [H10H 20/8514](#) is impacted by reclassification into group [H10H 29/8514](#).
 Groups [H10H 20/8514](#) and [H10H 29/8514](#) should be considered in order to perform a complete search.
- Q H10H 20/8515 . . . {not being in contact with the bodies}
WARNING
 Group [H10H 20/8515](#) is impacted by reclassification into group [H10H 29/8515](#).
 Groups [H10H 20/8515](#) and [H10H 29/8515](#) should be considered in order to perform a complete search.
- Q H10H 20/8516 . . . {having a non-uniform spatial arrangement or non-uniform concentration, e.g. patterned wavelength conversion layer or wavelength conversion layer with a concentration gradient}
WARNING
 Group [H10H 20/8516](#) is impacted by reclassification into group [H10H 29/8516](#).
 Groups [H10H 20/8516](#) and [H10H 29/8516](#) should be considered in order to perform a complete search.
- Q H10H 20/852 . . . Encapsulations
WARNING
 Group [H10H 20/852](#) is impacted by reclassification into group [H10H 29/852](#).
 Groups [H10H 20/852](#) and [H10H 29/852](#) should be considered in order to perform a complete search.
- Q H10H 20/853 . . . characterised by their shape
WARNING
 Group [H10H 20/853](#) is impacted by reclassification into group [H10H 29/853](#).

Groups [H10H 20/853](#) and [H10H 29/853](#) should be considered in order to perform a complete search.

- Q H10H 20/854
- • • characterised by their material, e.g. epoxy or silicone resins
- WARNING
Group [H10H 20/854](#) is impacted by reclassification into group [H10H 29/854](#).
Groups [H10H 20/854](#) and [H10H 29/854](#) should be considered in order to perform a complete search.
- Q H10H 20/855
- • • Optical field-shaping means, e.g. lenses
- WARNING
Group [H10H 20/855](#) is impacted by reclassification into groups [H10H 29/855](#) and [H10H 29/8552](#).
Groups [H10H 20/855](#), [H10H 29/855](#) and [H10H 29/8552](#) should be considered in order to perform a complete search.
- Q H10H 20/856
- • • Reflecting means
- WARNING
Group [H10H 20/856](#) is impacted by reclassification into group [H10H 29/856](#).
Groups [H10H 20/856](#) and [H10H 29/856](#) should be considered in order to perform a complete search.
- Q H10H 20/857
- • • Interconnections, e.g. lead-frames, bond wires or solder balls
- WARNING
Group [H10H 20/857](#) is impacted by reclassification into groups [H10H 29/49](#), [H10H 29/857](#), [H10H 29/922](#) and [H10H 29/942](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- Q H10H 20/858
- • • Means for heat extraction or cooling
- WARNING
Group [H10H 20/858](#) is impacted by reclassification into group [H10H 29/858](#).
Groups [H10H 20/858](#) and [H10H 29/858](#) should be considered in order to perform a complete search.
- Q H10H 20/8581
- • • {characterised by their material}
- WARNING
Group [H10H 20/8581](#) is impacted by reclassification into group [H10H 29/8581](#).
Groups [H10H 20/8581](#) and [H10H 29/8581](#) should be considered in order to perform a complete search.
- Q H10H 20/8582
- • • {characterised by their shape}
- WARNING
Group [H10H 20/8582](#) is impacted by reclassification into group [H10H 29/8582](#).
Groups [H10H 20/8582](#) and [H10H 29/8582](#) should be considered in order to perform a complete search.

- Q H10H 20/8583 • • • {not being in contact with the bodies}
 WARNING
 Group [H10H 20/8583](#) is impacted by reclassification into group [H10H 29/8583](#).
 Groups [H10H 20/8583](#) and [H10H 29/8583](#) should be considered in order to perform a complete search.
- Q H10H 20/8584 • • • {electrically controlled, e.g. Peltier elements}
 WARNING
 Group [H10H 20/8584](#) is impacted by reclassification into group [H10H 29/8584](#).
 Groups [H10H 20/8584](#) and [H10H 29/8584](#) should be considered in order to perform a complete search.
- Q H10H 20/8585 • • • {being an interconnection}
 WARNING
 Group [H10H 20/8585](#) is impacted by reclassification into group [H10H 29/8585](#).
 Groups [H10H 20/8585](#) and [H10H 29/8585](#) should be considered in order to perform a complete search.
- Q H10H 20/8586 • • • {comprising fluids, e.g. heat-pipes}
 WARNING
 Group [H10H 20/8586](#) is impacted by reclassification into group [H10H 29/8586](#).
 Groups [H10H 20/8586](#) and [H10H 29/8586](#) should be considered in order to perform a complete search.
- Q H10H 20/862 • • {Resonant cavity structures (formed by reflecting means in the bodies [H10H 20/8142](#))}
 WARNING
 Group [H10H 20/862](#) is impacted by reclassification into group [H10H 29/862](#).
 Groups [H10H 20/862](#) and [H10H 29/862](#) should be considered in order to perform a complete search.
- Q H10H 20/872 • • {Periodic patterns for optical field-shaping, e.g. photonic bandgap structures}
 WARNING
 Group [H10H 20/872](#) is impacted by reclassification into group [H10H 29/872](#).
 Groups [H10H 20/872](#) and [H10H 29/872](#) should be considered in order to perform a complete search.
- Q H10H 20/882 • • {Scattering means ([H10H 20/82](#) takes precedence)}
 WARNING
 Group [H10H 20/882](#) is impacted by reclassification into group [H10H 29/882](#).
 Groups [H10H 20/882](#) and [H10H 29/882](#) should be considered in order to perform a complete search.
- N H10H 29/00 **Integrated devices, or assemblies of multiple devices, comprising at least one light-emitting semiconductor element covered by group [H10H 20/00](#)**
- N H10H 29/01 • • Manufacture or treatment
 WARNING
 Groups [H10H 29/01](#), [H10H 29/012](#), [H10H 29/02](#) and [H10H 29/03](#) are incomplete pending reclassification of documents from group [H10H 20/01](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N H10H 29/011
- {of integrated devices comprising at least one light-emitting semiconductor component covered by group [H10H 20/00](#)}
- WARNING
Group [H10H 29/011](#) is incomplete pending reclassification of documents from groups [H10H 20/01](#), [H10H 29/10](#), [H10H 29/14](#) and [H10H 29/142](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N H10H 29/012
- {of active-matrix LED displays}
- N H10H 29/02
- using pick-and-place processes
- N H10H 29/03
- using mass transfer of LEDs, e.g. by using liquid suspensions
- N H10H 29/032
- {of electrodes}
- WARNING
Group [H10H 29/032](#) is incomplete pending reclassification of documents from groups [H10H 20/01](#) and [H10H 20/032](#).
Groups [H10H 20/01](#), [H10H 20/032](#) and [H10H 29/032](#) should be considered in order to perform a complete search.
- N H10H 29/034
- {of coatings}
- WARNING
Group [H10H 29/034](#) is incomplete pending reclassification of documents from groups [H10H 20/01](#) and [H10H 20/034](#).
Groups [H10H 20/01](#), [H10H 20/034](#) and [H10H 29/034](#) should be considered in order to perform a complete search.
- N H10H 29/036
- {of packages}
- WARNING
Group [H10H 29/036](#) is incomplete pending reclassification of documents from groups [H10H 20/01](#) and [H10H 20/036](#).
Groups [H10H 20/01](#), [H10H 20/036](#) and [H10H 29/036](#) should be considered in order to perform a complete search.
- N H10H 29/0361
- {of wavelength conversion means}
- WARNING
Group [H10H 29/0361](#) is incomplete pending reclassification of documents from groups [H10H 20/01](#) and [H10H 20/0361](#).
Groups [H10H 20/01](#), [H10H 20/0361](#) and [H10H 29/0361](#) should be considered in order to perform a complete search.
- N H10H 29/0362
- {of encapsulations}
- WARNING
Group [H10H 29/0362](#) is incomplete pending reclassification of documents from groups [H10H 20/01](#) and [H10H 20/0362](#).
Groups [H10H 20/01](#), [H10H 20/0362](#) and [H10H 29/0362](#) should be considered in order to perform a complete search.
- N H10H 29/0363
- {of optical field-shaping means}
- WARNING
Group [H10H 29/0363](#) is incomplete pending reclassification of documents from groups [H10H 20/01](#) and [H10H 20/0363](#).

Groups [H10H 20/01](#), [H10H 20/0363](#) and [H10H 29/0363](#) should be considered in order to perform a complete search.

N H10H 29/0364

- • • {of interconnections}

WARNING

Group [H10H 29/0364](#) is incomplete pending reclassification of documents from groups [H10H 20/01](#) and [H10H 20/0364](#).

Groups [H10H 20/01](#), [H10H 20/0364](#) and [H10H 29/0364](#) should be considered in order to perform a complete search.

N H10H 29/0365

- • • {of means for heat extraction or cooling}

WARNING

Group [H10H 29/0365](#) is incomplete pending reclassification of documents from groups [H10H 20/01](#) and [H10H 20/0365](#).

Groups [H10H 20/01](#), [H10H 20/0365](#) and [H10H 29/0365](#) should be considered in order to perform a complete search.

Q H10H 29/10

- Integrated devices comprising at least one light-emitting semiconductor component covered by group [H10H 20/00](#) (active-matrix LED displays [H10H 29/30](#))

WARNING

Group [H10H 29/10](#) is impacted by reclassification into group [H10H 29/011](#).

Groups [H10H 29/10](#) and [H10H 29/011](#) should be considered in order to perform a complete search.

Q H10H 29/14

- • comprising multiple light-emitting semiconductor components

WARNING

Group [H10H 29/14](#) is incomplete pending reclassification of documents from group [H10H 29/142](#).

Group [H10H 29/14](#) is also impacted by reclassification into groups [H10H 29/011](#), [H10H 29/922](#), [H10H 29/942](#) and [H10H 29/962](#).

All groups listed in this Warning should be considered in order to perform a complete search.

Q H10H 29/142

- • • {Two-dimensional arrangements, e.g. asymmetric LED layout}

WARNING

Group [H10H 29/142](#) is impacted by reclassification into groups [H10H 29/011](#), [H10H 29/14](#), [H10H 29/30](#), [H10H 29/32](#), [H10H 29/34](#), [H10H 29/345](#), [H10H 29/352](#), [H10H 29/362](#), [H10H 29/37](#), [H10H 29/39](#), [H10H 29/41](#), [H10H 29/45](#), [H10H 29/49](#), [H10H 29/8517](#), [H10H 29/8552](#), [H10H 29/922](#), [H10H 29/942](#) and [H10H 29/962](#).

All groups listed in this Warning should be considered in order to perform a complete search.

N H10H 29/20

- Assemblies of multiple devices comprising at least one light-emitting semiconductor device covered by group [H10H 20/00](#) (active-matrix LED displays [H10H 29/30](#))

N H10H 29/24

- • comprising multiple light-emitting semiconductor devices

N H10H 29/30

- Active-matrix LED displays

NOTE

This group covers active-matrix displays where the emphasis of the invention concerns the LEDs, the layers closely related to the LEDs or constructional

details closely related to the LEDs, e.g. interconnections between the LEDs or their encapsulations.

WARNING

Groups [H10H 29/30](#), [H10H 29/32](#), [H10H 29/34](#), [H10H 29/345](#), [H10H 29/352](#), [H10H 29/362](#), [H10H 29/37](#), [H10H 29/39](#), [H10H 29/41](#) and [H10H 29/45](#) are incomplete pending reclassification of documents from group [H10H 29/142](#). All groups listed in this Warning should be considered in order to perform a complete search.

- | | | |
|---|-------------|--|
| N | H10H 29/32 | <ul style="list-style-type: none"> • • characterised by the geometry or arrangement of elements within a subpixel, e.g. arrangement of the transistor within its RGB subpixel |
| N | H10H 29/34 | <ul style="list-style-type: none"> • • characterised by the geometry or arrangement of subpixels within a pixel, e.g. relative disposition of the RGB subpixels |
| N | H10H 29/345 | <ul style="list-style-type: none"> • • {the area of the subpixels being different} |
| N | H10H 29/352 | <ul style="list-style-type: none"> • • {characterised by differences in geometry or arrangement of elements, subpixels or pixels in different regions of the display, e.g. at the central and peripheral regions} |
| N | H10H 29/362 | <ul style="list-style-type: none"> • • {comprising more than three subpixels, e.g. red-green-blue-white [RGBW]} |
| N | H10H 29/37 | <ul style="list-style-type: none"> • • Pixel-defining structures, e.g. banks between the LEDs |
| N | H10H 29/39 | <ul style="list-style-type: none"> • • Connection of the pixel electrodes to the driving transistors |
| N | H10H 29/41 | <ul style="list-style-type: none"> • • Insulating layers formed between the driving transistors and the LEDs |
| N | H10H 29/45 | <ul style="list-style-type: none"> • • comprising two substrates, each having active devices thereon, e.g. displays comprising LED arrays and driving circuitry on different substrates |
| N | H10H 29/49 | <ul style="list-style-type: none"> • • Interconnections, e.g. wiring lines or terminals (connection of the pixel electrodes to the driving transistors H10H 29/39) |

WARNING

Group [H10H 29/49](#) is incomplete pending reclassification of documents from groups [H10H 20/857](#) and [H10H 29/142](#). Groups [H10H 20/857](#), [H10H 29/142](#) and [H10H 29/49](#) should be considered in order to perform a complete search.

- | | | |
|---|------------|--|
| N | H10H 29/80 | <ul style="list-style-type: none"> • Constructional details |
|---|------------|--|

NOTE

Classification is made in group [H10H 29/80](#) when the constructional detail is relevant to integrated devices or assemblies comprising multiple devices. When the constructional detail is relevant to individual devices, then classification is made in group [H10H 20/80](#).

WARNING

Group [H10H 29/80](#) is incomplete pending reclassification of documents from group [H10H 20/80](#). Groups [H10H 20/80](#) and [H10H 29/80](#) should be considered in order to perform a complete search.

- | | | |
|---|-------------|--|
| N | H10H 29/832 | <ul style="list-style-type: none"> • • {Electrodes} |
|---|-------------|--|

WARNING

Group [H10H 29/832](#) is incomplete pending reclassification of documents from group [H10H 20/83](#). Groups [H10H 20/83](#) and [H10H 29/832](#) should be considered in order to perform a complete search.

- N H10H 29/8321 • • • {characterised by their shape}
- WARNING
Group [H10H 29/8321](#) is incomplete pending reclassification of documents from group [H10H 20/831](#).
Groups [H10H 20/831](#) and [H10H 29/8321](#) should be considered in order to perform a complete search.
- N H10H 29/8322 • • • {characterised by their materials}
- WARNING
Group [H10H 29/8322](#) is incomplete pending reclassification of documents from group [H10H 20/832](#).
Groups [H10H 20/832](#) and [H10H 29/8322](#) should be considered in order to perform a complete search.
- N H10H 29/8323 • • • • {Transparent materials}
- WARNING
Group [H10H 29/8323](#) is incomplete pending reclassification of documents from group [H10H 20/833](#).
Groups [H10H 20/833](#) and [H10H 29/8323](#) should be considered in order to perform a complete search.
- N H10H 29/8325 • • • • {Reflective materials}
- WARNING
Group [H10H 29/8325](#) is incomplete pending reclassification of documents from group [H10H 20/835](#).
Groups [H10H 20/835](#) and [H10H 29/8325](#) should be considered in order to perform a complete search.
- N H10H 29/842 • • {Coatings, e.g. passivation layers or antireflective coatings}
- WARNING
Group [H10H 29/842](#) is incomplete pending reclassification of documents from group [H10H 20/84](#).
Groups [H10H 20/84](#) and [H10H 29/842](#) should be considered in order to perform a complete search.
- N H10H 29/8421 • • • {Reflective coatings, e.g. dielectric Bragg reflectors}
- WARNING
Group [H10H 29/8421](#) is incomplete pending reclassification of documents from group [H10H 20/841](#).
Groups [H10H 20/841](#) and [H10H 29/8421](#) should be considered in order to perform a complete search.
- N H10H 29/85 • • Packages
- WARNING
Group [H10H 29/85](#) is incomplete pending reclassification of documents from group [H10H 20/85](#).
Groups [H10H 20/85](#) and [H10H 29/85](#) should be considered in order to perform a complete search.
- N H10H 29/8506 • • • {Containers}
- WARNING
Group [H10H 29/8506](#) is incomplete pending reclassification of documents from group [H10H 20/8506](#).

Groups [H10H 20/8506](#) and [H10H 29/8506](#) should be considered in order to perform a complete search.

N H10H 29/8508

- • • {Package substrates, e.g. submounts}

WARNING

Group [H10H 29/8508](#) is incomplete pending reclassification of documents from groups [H10H 20/85](#) and [H10H 20/8506](#).

Groups [H10H 20/85](#), [H10H 20/8506](#) and [H10H 29/8508](#) should be considered in order to perform a complete search.

N H10H 29/851

- • • Wavelength conversion means

WARNING

Group [H10H 29/851](#) is incomplete pending reclassification of documents from group [H10H 20/851](#).

Groups [H10H 20/851](#) and [H10H 29/851](#) should be considered in order to perform a complete search.

N H10H 29/8511

- • • • {characterised by their material, e.g. binder}

WARNING

Group [H10H 29/8511](#) is incomplete pending reclassification of documents from group [H10H 20/8511](#).

Groups [H10H 20/8511](#) and [H10H 29/8511](#) should be considered in order to perform a complete search.

N H10H 29/8512

- • • • • {Wavelength conversion materials}

WARNING

Group [H10H 29/8512](#) is incomplete pending reclassification of documents from group [H10H 20/8512](#).

Groups [H10H 20/8512](#) and [H10H 29/8512](#) should be considered in order to perform a complete search.

N H10H 29/8513

- • • • • {having two or more wavelength conversion materials}

WARNING

Group [H10H 29/8513](#) is incomplete pending reclassification of documents from group [H10H 20/8513](#).

Groups [H10H 20/8513](#) and [H10H 29/8513](#) should be considered in order to perform a complete search.

N H10H 29/8514

- • • • {characterised by their shape, e.g. plate or foil}

WARNING

Group [H10H 29/8514](#) is incomplete pending reclassification of documents from group [H10H 20/8514](#).

Groups [H10H 20/8514](#) and [H10H 29/8514](#) should be considered in order to perform a complete search.

N H10H 29/8515

- • • • {not being in contact with the bodies}

WARNING

Group [H10H 29/8515](#) is incomplete pending reclassification of documents from group [H10H 20/8515](#).

Groups [H10H 20/8515](#) and [H10H 29/8515](#) should be considered in order to perform a complete search.

- N H10H 29/8516 . . . {having a non-uniform spatial arrangement or non-uniform concentration, e.g. patterned wavelength conversion layer, wavelength conversion layer with a concentration gradient}
- WARNING
Group [H10H 29/8516](#) is incomplete pending reclassification of documents from group [H10H 20/8516](#).
Groups [H10H 20/8516](#) and [H10H 29/8516](#) should be considered in order to perform a complete search.
- N H10H 29/8517 . . . {Colour filters}
- WARNING
Group [H10H 29/8517](#) is incomplete pending reclassification of documents from groups [H10H 20/80](#), [H10H 20/84](#), [H10H 20/85](#) and [H10H 29/142](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N H10H 29/852 . . . Encapsulations
- WARNING
Group [H10H 29/852](#) is incomplete pending reclassification of documents from group [H10H 20/852](#).
Groups [H10H 20/852](#) and [H10H 29/852](#) should be considered in order to perform a complete search.
- N H10H 29/853 . . . characterised by their shape
- WARNING
Group [H10H 29/853](#) is incomplete pending reclassification of documents from group [H10H 20/853](#).
Groups [H10H 20/853](#) and [H10H 29/853](#) should be considered in order to perform a complete search.
- N H10H 29/854 . . . characterised by their material, e.g. epoxy or silicone resins
- WARNING
Group [H10H 29/854](#) is incomplete pending reclassification of documents from group [H10H 20/854](#).
Groups [H10H 20/854](#) and [H10H 29/854](#) should be considered in order to perform a complete search.
- N H10H 29/855 . . . Optical field-shaping means, e.g. lenses
- WARNING
Group [H10H 29/855](#) is incomplete pending reclassification of documents from group [H10H 20/855](#).
Groups [H10H 20/855](#) and [H10H 29/855](#) should be considered in order to perform a complete search.
- N H10H 29/8552 . . . {Light absorbing arrangements, e.g. black matrix}
- WARNING
Group [H10H 29/8552](#) is incomplete pending reclassification of documents from groups [H10H 20/80](#), [H10H 20/84](#), [H10H 20/85](#), [H10H 20/855](#) and [H10H 29/142](#).
All groups listed in this Warning should be considered in order to perform a complete search.

- N H10H 29/856 Reflecting means
WARNING
 Group [H10H 29/856](#) is incomplete pending reclassification of documents from group [H10H 20/856](#).
 Groups [H10H 20/856](#) and [H10H 29/856](#) should be considered in order to perform a complete search.
- N H10H 29/857 {Interconnections (of active-matrix LED displays [H10H 29/49](#))}
WARNING
 Group [H10H 29/857](#) is incomplete pending reclassification of documents from group [H10H 20/857](#).
 Groups [H10H 20/857](#) and [H10H 29/857](#) should be considered in order to perform a complete search.
- N H10H 29/858 {Means for heat extraction or cooling}
WARNING
 Group [H10H 29/858](#) is incomplete pending reclassification of documents from group [H10H 20/858](#).
 Groups [H10H 20/858](#) and [H10H 29/858](#) should be considered in order to perform a complete search.
- N H10H 29/8581 {characterised by their material}
WARNING
 Group [H10H 29/8581](#) is incomplete pending reclassification of documents from group [H10H 20/8581](#).
 Groups [H10H 20/8581](#) and [H10H 29/8581](#) should be considered in order to perform a complete search.
- N H10H 29/8582 {characterised by their shape}
WARNING
 Group [H10H 29/8582](#) is incomplete pending reclassification of documents from group [H10H 20/8582](#).
 Groups [H10H 20/8582](#) and [H10H 29/8582](#) should be considered in order to perform a complete search.
- N H10H 29/8583 {not being in contact with the bodies}
WARNING
 Group [H10H 29/8583](#) is incomplete pending reclassification of documents from group [H10H 20/8583](#).
 Groups [H10H 20/8583](#) and [H10H 29/8583](#) should be considered in order to perform a complete search.
- N H10H 29/8584 {electrically controlled, e.g. Peltier elements}
WARNING
 Group [H10H 29/8584](#) is incomplete pending reclassification of documents from group [H10H 20/8584](#).
 Groups [H10H 20/8584](#) and [H10H 29/8584](#) should be considered in order to perform a complete search.
- N H10H 29/8585 {being an interconnection}
WARNING
 Group [H10H 29/8585](#) is incomplete pending reclassification of documents from group [H10H 20/8585](#).

Groups [H10H 20/8585](#) and [H10H 29/8585](#) should be considered in order to perform a complete search.

- N H10H 29/8586
- • • {comprising fluids, e.g. heat-pipes}
- WARNING
Group [H10H 29/8586](#) is incomplete pending reclassification of documents from group [H10H 20/8586](#).
Groups [H10H 20/8586](#) and [H10H 29/8586](#) should be considered in order to perform a complete search.
- N H10H 29/862
- • {Resonant cavity structures}
- WARNING
Group [H10H 29/862](#) is incomplete pending reclassification of documents from group [H10H 20/862](#).
Groups [H10H 20/862](#) and [H10H 29/862](#) should be considered in order to perform a complete search.
- N H10H 29/872
- • {Periodic patterns for optical field-shaping, e.g. photonic bandgap structures}
- WARNING
Group [H10H 29/872](#) is incomplete pending reclassification of documents from group [H10H 20/872](#).
Groups [H10H 20/872](#) and [H10H 29/872](#) should be considered in order to perform a complete search.
- N H10H 29/882
- • {Scattering means}
- WARNING
Group [H10H 29/882](#) is incomplete pending reclassification of documents from group [H10H 20/882](#).
Groups [H10H 20/882](#) and [H10H 29/882](#) should be considered in order to perform a complete search.
- N H10H 29/922
- • {Parallel electrical configurations of multiple light-emitting semiconductor components or devices}
- WARNING
Group [H10H 29/922](#) is incomplete pending reclassification of documents from groups [H10H 20/857](#), [H10H 29/14](#) and [H10H 29/142](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N H10H 29/942
- • {Serial electrical configurations of multiple light-emitting semiconductor components or devices}
- WARNING
Group [H10H 29/942](#) is incomplete pending reclassification of documents from groups [H10H 20/857](#), [H10H 29/14](#) and [H10H 29/142](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N H10H 29/962
- • {Stacked configurations of light-emitting semiconductor components or devices, the components or devices emitting at different wavelengths}
- WARNING
Group [H10H 29/962](#) is incomplete pending reclassification of documents from groups [H10H 29/14](#) and [H10H 29/142](#).
Groups [H10H 29/14](#), [H10H 29/142](#) and [H10H 29/962](#) should be considered in order to perform a complete search.

N H10H 99/00 *Subject matter not provided for in other groups of this subclass*

Project: MP12406 (H10N)

U H10N 10/00 Thermoelectric devices comprising a junction of dissimilar materials, i.e. devices exhibiting Seebeck or Peltier effects (integrated devices or assemblies of multiple devices [H10N 19/00](#))

U H10N 10/80 • Constructional details

M H10N 10/82 • • ~~Connection of interconnections~~ *Interconnections*

U H10N 50/00 Galvanomagnetic devices (Hall-effect devices [H10N 52/00](#); integrated devices or assemblies of multiple devices [H10N 59/00](#))

WARNING

Group [H10N 50/00](#) is impacted by reclassification into group [H10N 50/20](#).

Groups [H10N 50/00](#) and [H10N 50/20](#) should be considered in order to perform a complete search.

U H10N 50/80 • Constructional details

M H10N 50/85 • • ~~Magnetic active materials~~ *Materials of the active region*

WARNING

Group [H10N 50/85](#) is impacted by reclassification into group [H10N 52/85](#).

Groups [H10N 50/85](#) and [H10N 52/85](#) should be considered in order to perform a complete search.

U H10N 52/00 Hall-effect devices (integrated devices or assemblies of multiple devices [H10N 59/00](#))

U H10N 52/80 • Constructional details

M H10N 52/85 • • ~~Magnetic active materials~~ *Materials of the active region*

WARNING

Group [H10N 52/85](#) is incomplete pending reclassification of documents from group [H10N 50/85](#).

Groups [H10N 50/85](#) and [H10N 52/85](#) should be considered in order to perform a complete search.

Project: Unknown (Y10S)

U Y10S 57/00 Textiles: spinning, twisting, and twining

M Y10S 57/902 • Reinforcing or ~~tire~~ *tyre* cords

U Y10S 83/00 Cutting

U Y10S 83/929 • Particular nature of work or product

M Y10S 83/951 • • Rubber ~~tire~~ *tyre*

U Y10S 152/00 Resilient tires and wheels

M Y10S 152/904 • Specified tread pattern for front ~~tire and rear tire~~ *tyre and rear tyre*

U Y10S 303/00 Fluid-pressure and analogous brake systems

M Y10S 303/07 • Small ~~tire~~ *tyre* digest

U Y10S 409/00 Gear cutting, milling, or planing

M Y10S 409/902 • ~~Tire~~ *Tyre* mold

U Y10S 429/00 Chemistry: electrical current producing apparatus, product, and process

- M Y10S 429/90 · Fuel cell including means for power conditioning, e.g. ~~Conversion to~~
 ~~ae~~*conversion to AC*
- U Y10S 451/00 Abrading**
- M Y10S 451/92 · ~~Tire~~*Tyre* "rounding"

Project: Unknown (Y10T)

- U Y10T 29/00 Metal working**
- U Y10T 29/49 · Method of mechanical manufacture
- U Y10T 29/49481 · · Wheel making
- U Y10T 29/49492 · · · Land wheel
- M Y10T 29/49538 · · · · ~~Tire~~*Tyre* making
- U Y10T 29/53 · Means to assemble or disassemble
- U Y10T 29/53478 · · with magazine supply
- U Y10T 29/53487 · · · Assembling means comprising hand-manipulatable implement
- M Y10T 29/53509 · · · · Means to assemble ~~tire-stud into tire~~*tyre stud into tyre* tread
- U Y10T 152/00 Resilient tires and wheels**
- U Y10T 152/10 · Tires, resilient
- U Y10T 152/10495 · · Pneumatic tire or inner tube
- M Y10T 152/10504 · · · Asymmetric ~~tire~~*tyre*
- U Y10T 407/00 Cutters, for shaping**
- U Y10T 407/18 · File or rasp
- M Y10T 407/181 · · ~~Tire~~*Tyre* rasp