

# CPC COOPERATIVE PATENT CLASSIFICATION

## C CHEMISTRY; METALLURGY

(NOTES omitted)

### CHEMISTRY

## C09 DYES; PAINTS; POLISHES; NATURAL RESINS; ADHESIVES; COMPOSITIONS NOT OTHERWISE PROVIDED FOR; APPLICATIONS OF MATERIALS NOT OTHERWISE PROVIDED FOR

### C09K MATERIALS FOR MISCELLANEOUS APPLICATIONS, NOT PROVIDED FOR ELSEWHERE

#### NOTES

1. This subclass covers also the use of specified materials in general or their use for the applications not specially provided for elsewhere.
2. In this subclass, the following term is used with the meaning indicated:
  - "materials" includes compositions.

#### 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:  
[C09K 11/78-C09K 11/86](#) covered by [C09K 11/77 - C09K 11/7798](#), [C09K 11/87](#), [C09K 11/88](#), [C09K 11/89](#)
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.

#### 3/00 Materials not provided for elsewhere

##### NOTE

When classifying in groups [C09K 3/10 - C09K 3/1028](#) the properties and uses of the material can be further indexed by using indexing codes chosen from [C09K 2003/1034 - C09K 2003/1096](#) and the chemical nature of the materials can be further indexed by using indexing codes chosen from [C09K 2200/00 - C09K 2200/0697](#)

|           |  |           |  |
|-----------|--|-----------|--|
|           |  | 2003/104  | . . . {Water-swellable materials}  |
|           |  | 2003/1043 | . . . {Non water-swellable materials}  |
|           |  | 2003/1046 | . . . {Water-absorbing materials}  |
|           |  | 2003/105  | . . . {Water-soluble materials}  |
|           |  | 2003/1053 | . . . {Elastomeric materials}  |
|           |  | 2003/1056 | . . . {Moisture-curable materials}   |
|           |  | 2003/1059 | . . . {Heat-curable materials}   |
|           |  | 2003/1062 | . . . {UV-curable materials}   |
|           |  | 2003/1065 | . . . {Anaerobically hardenable materials}   |
|           |  | 2003/1068 | . . . {Crosslinkable materials}  |
|           |  | 2003/1071 | . . . {Thixotropic materials}  |
|           |  | 2003/1075 | . . . {Injection-mouldable materials}  |
|           |  | 2003/1078 | . . . {Fire-resistant, heat-resistant materials}   |
|           |  | 2003/1081 | . . . {Water-proofed materials}  |
|           |  | 2003/1084 | . . . {Laminates}  |
|           |  | 2003/1087 | . . . {Materials or components characterised by specific uses}   |
|           |  | 2003/109  | . . . {Crown caps}   |
|           |  | 2003/1093 | . . . {Cables}   |
|           |  | 2003/1096 | . . . {Cylinder head gaskets}  |
|           |  | 3/12      | . Materials for stopping leaks, e.g. in radiators, in tanks ( <a href="#">filling pastes C09D 5/34</a> ) |
| 3/10      | . {Materials in mouldable or extrudable form} for sealing or packing joints or covers ( <a href="#">filling pastes C09D 5/34</a> ) |           |  |
| 3/1003    | . . {Pure inorganic mixtures}  |           |  |
| 3/1006    | . . {characterised by the chemical nature of one of its constituents}  |           |  |
| 3/1009    | . . . {Fluorinated polymers, e.g. PTFE}  |           |  |
| 3/1012    | . . . {Sulfur-containing polymers, e.g. polysulfides}  |           |  |
| 3/1015    | . . . {Polysaccharides or derivatives thereof}   |           |  |
| 3/1018    | . . . {Macromolecular compounds having one or more carbon-to-silicon linkages}   |           |  |
| 3/1021    | . . . {Polyurethanes or derivatives thereof}   |           |  |
| 3/1025    | . . {characterised by non-chemical features of one or more of its constituents}  |           |  |
| 3/1028    | . . . {Fibres}   |           |  |
| 3/1031    | . . {Sealing waxes, e.g. sealing letters, bottles, or the like}  |           |  |
| 2003/1034 | . . {Materials or components characterised by specific properties}   |           |  |
| 2003/1037 | . . . {Intumescent materials}  |           |  |

- 3/14 . . . . . Anti-slip materials; Abrasives {(products specifically intended for the fabrication of abrasive tools, blocks or papers, or for operations of the kind of sand-blasting and barrelling [B24B 31/14](#), [B24C 1/00](#); polishing compositions containing abrasive or grinding agents [C09G 1/02](#); polishing of semi-conductors [H01L](#); friction compositions for brakes or clutches [F16D 69/02](#))}
- NOTE**
- In this group, boron and silicon are considered as being metals. Likewise for associations of carbon with metals, e.g. carbides.
- 3/1409 . . . {Abrasive particles *per se* (preparation of diamond [C01B 32/25](#))}
- 3/1418 . . . . . {obtained by division of a mass agglomerated by sintering}
- 3/1427 . . . . . {obtained by division of a mass agglomerated by melting, at least partially, e.g. with a binder}
- 3/1436 . . . {Composite particles, e.g. coated particles}
- 3/1445 . . . . . {the coating consisting exclusively of metals}
- 3/1454 . . . {Abrasive powders, suspensions and pastes for polishing}
- 3/1463 . . . . . {Aqueous liquid suspensions}
- 3/1472 . . . . . {Non-aqueous liquid suspensions}
- 3/1481 . . . . . {Pastes, optionally in the form of blocks or sticks}
- 3/149 . . . {Antislip compositions}
- 3/16 . . . Anti-static materials
- 3/18 . . . for application to surfaces to minimize adherence of ice, mist or water thereto (rendering particulate materials free flowing, in general, e.g. making them hydrophobic [B01J 2/30](#)); Thawing or antifreeze materials for application to surfaces (used in liquids for heat-transfer, heat-exchange or heat-storage or for the production of heat or cold other than by combustion, e.g. radiator liquids, [C09K 5/00](#))
- 3/185 . . . {Thawing materials}
- 3/20 . . . as substitutes for glycerol in its non-chemical uses, e.g. as a base in toilet creams or ointments
- 3/22 . . . for dust-laying or dust-absorbing
- 3/24 . . . for simulating ice or snow
- 3/30 . . . for aerosols (aerosol containers [B65D 83/14](#))
- 3/32 . . . for absorbing liquids to remove pollution, e.g. oil, gasoline, fat
- 5/00 Heat-transfer, heat-exchange or heat-storage materials, e.g. refrigerants; Materials for the production of heat or cold by chemical reactions other than by combustion**
- 5/02 . . . Materials undergoing a change of physical state when used ([C09K 5/16](#), [C09K 5/20](#) take precedence)
- 5/04 . . . the change of state being from liquid to vapour or vice versa
- NOTE**
- When classifying in groups [C09K 5/042](#), [C09K 5/044](#) and [C09K 5/045](#) the chemical nature of the material can be further indexed by using indexing codes chosen from [C09K 2205/00](#) - [C09K 2205/48](#)
- 5/041 . . . . . {for compression-type refrigeration systems}
- 5/042 . . . . . {comprising compounds containing carbon and hydrogen only}
- 5/044 . . . . . {comprising halogenated compounds}
- 5/045 . . . . . {containing only fluorine as halogen}
- 5/047 . . . . . {for absorption-type refrigeration systems}
- 5/048 . . . . . {Boiling liquids as heat transfer materials}
- 5/06 . . . the change of state being from liquid to solid or vice versa
- 5/063 . . . . . {Materials absorbing or liberating heat during crystallisation; Heat storage materials}
- 5/066 . . . . . {Cooling mixtures; De-icing compositions}
- 5/08 . . . Materials not undergoing a change of physical state when used ([C09K 5/16](#), [C09K 5/20](#) take precedence)
- 5/10 . . . Liquid materials
- 5/12 . . . Molten materials, i.e. materials solid at room temperature, e.g. metals or salts
- 5/14 . . . Solid materials, e.g. powdery or granular
- 5/16 . . . Materials undergoing chemical reactions when used
- 5/18 . . . Non-reversible chemical reactions
- 5/20 . . . Antifreeze additives therefor, e.g. for radiator liquids (for application to surfaces [C09K 3/18](#); inhibiting corrosion by liquids [C23F 11/00](#))
- 8/00 Compositions for drilling of boreholes or wells; Compositions for treating boreholes or wells, e.g. for completion or for remedial operations**
- NOTE**
- {When classifying in groups [C09K 8/00](#)-[C09K 8/40](#) and [C09K 8/50](#)-[C09K 8/94](#), it is mandatory when appropriate to classify with indexing codes for aspects relating to compositions for drilling or treating boreholes or wells. The indexing codes are chosen from the groups [C09K 2208/00](#)-[C09K 2208/34](#)}
- 8/02 . . . Well-drilling compositions
- NOTE**
- In groups [C09K 8/02](#)-[C09K 8/38](#), in the absence of an indication to the contrary, classification is made in the last appropriate place.
- 8/03 . . . Specific additives for general use in well-drilling compositions
- 8/032 . . . . . {Inorganic additives}
- 8/035 . . . . . Organic additives
- 8/04 . . . Aqueous well-drilling compositions
- 8/05 . . . containing inorganic compounds only, e.g. mixtures of clay and salt
- 8/06 . . . Clay-free compositions (containing inorganic compounds only [C09K 8/05](#))
- 8/08 . . . . . containing natural organic compounds, e.g. polysaccharides, or derivatives thereof
- 8/10 . . . . . Cellulose or derivatives thereof
- 8/12 . . . . . containing synthetic organic macromolecular compounds or their precursors
- 8/14 . . . Clay-containing compositions (containing inorganic compounds [C09K 8/05](#))
- 8/145 . . . . . {characterised by the composition of the clay}
- 8/16 . . . . . characterised by the inorganic compounds other than clay
- 8/18 . . . . . characterised by the organic compounds

- 8/20 . . . . . Natural organic compounds or derivatives thereof, e.g. polysaccharides or lignin derivatives
- 8/203 . . . . . { Wood derivatives, e.g. lignosulfonate, tannin, tall oil, sulfite liquor }
- 8/206 . . . . . { Derivatives of other natural products, e.g. cellulose, starch, sugars }
- 8/22 . . . . . Synthetic organic compounds
- 8/24 . . . . . Polymers
- 8/26 . . . Oil-in-water emulsions
- 8/265 . . . . {containing inorganic additives }
- 8/28 . . . . containing organic additives
- 8/32 . . Non-aqueous well-drilling compositions, e.g. oil-based
- 8/34 . . . Organic liquids
- 8/36 . . . Water-in-oil emulsions
- 8/38 . . Gaseous or foamed well-drilling compositions
- 8/40 . Spacer compositions, e.g. compositions used to separate well-drilling from cementing masses
- 8/42 . Compositions for cementing, e.g. for cementing casings into boreholes; Compositions for plugging, e.g. for killing wells (compositions for plastering [C09K 8/50](#))
- 8/422 . . {specially adapted for sealing expandable pipes, e.g. of the non-hardening type }
- 8/424 . . {using "spacer" compositions }
- 8/426 . . {for plugging }
- 8/428 . . {for squeeze cementing, e.g. for repairing }
- 8/44 . . containing organic binders only
- 8/46 . . containing inorganic binders, e.g. Portland cement
- 8/467 . . . containing additives for specific purposes
- 8/473 . . . . Density reducing additives, e.g. for obtaining foamed cement compositions
- 8/48 . . . . Density increasing or weighting additives
- 8/487 . . . . Fluid loss control additives; Additives for reducing or preventing circulation loss
- 8/493 . . . . Additives for reducing or preventing gas migration
- 8/50 . Compositions for plastering borehole walls, i.e. compositions for temporary consolidation of borehole walls (compositions for consolidating loose sand or the like around wells [C09K 8/56](#))
- 8/501 . . {using spacer compositions }
- 8/502 . . Oil-based compositions
- 8/504 . . Compositions based on water or polar solvents ([C09K 8/502](#) takes precedence)
- 8/5045 . . . {containing inorganic compounds }
- 8/506 . . . containing organic compounds
- 8/508 . . . . macromolecular compounds { ([C09K 8/512](#) takes precedence) }
- 8/5083 . . . . . {obtained by reactions only involving carbon-to-carbon unsaturated bonds }
- 8/5086 . . . . . {obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds }
- 8/512 . . . . . containing cross-linking agents
- 8/514 . . . . . of natural origin, e.g. polysaccharides, cellulose ([C09K 8/512](#) takes precedence)
- 8/516 . . characterised by their form or by the form of their components, e.g. encapsulated material
- 8/518 . . . Foams
- 8/52 . Compositions for preventing, limiting or eliminating depositions, e.g. for cleaning
- 8/524 . . organic depositions, e.g. paraffins or asphaltenes
- 8/528 . . inorganic depositions, e.g. sulfates or carbonates
- 8/532 . . . Sulfur
- 8/536 . . characterised by their form or by the form of their components, e.g. encapsulated material
- 8/54 . Compositions for in situ inhibition of corrosion in boreholes or wells
- 8/56 . Compositions for consolidating loose sand or the like around wells without excessively decreasing the permeability thereof (compositions for plastering borehole walls [C09K 8/50](#); {Soil-conditioning materials or soil-stabilising materials in general [C09K 17/00](#)})
- 8/565 . . Oil-based compositions
- 8/57 . . Compositions based on water or polar solvents ([C09K 8/565](#) takes precedence)
- 8/572 . . . {containing inorganic compounds }
- 8/575 . . . containing organic compounds
- 8/5751 . . . . {Macromolecular compounds ([C09K 8/5756](#) takes precedence) }
- 8/5753 . . . . . {obtained by reactions only involving carbon-to-carbon unsaturated bonds }
- 8/5755 . . . . . {obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds }
- 8/5756 . . . . . {containing cross-linking agents }
- 8/5758 . . . . . {of natural origin, e.g. polysaccharides, cellulose ([C09K 8/5756](#) takes precedence) }
- 8/58 . Compositions for enhanced recovery methods for obtaining hydrocarbons, i.e. for improving the mobility of the oil, e.g. displacing fluids
- 8/582 . . characterised by the use of bacteria
- 8/584 . . characterised by the use of specific surfactants
- 8/588 . . characterised by the use of specific polymers { (polymeric surfactants [C09K 8/584](#)) }
- 8/592 . . Compositions used in combination with generated heat, e.g. by steam injection
- 8/594 . . Compositions used in combination with injected gas {, e.g. CO<sub>2</sub> or carbonated gas} ([C09K 8/592](#) takes precedence)
- 8/60 . Compositions for stimulating production by acting on the underground formation
- 8/601 . . {using spacer compositions }
- 8/602 . . {containing surfactants }
- 8/604 . . . {Polymeric surfactants }
- 8/605 . . {containing biocides }
- 8/607 . . {specially adapted for clay formations }
- 8/608 . . . {Polymer compositions }
- 8/62 . . Compositions for forming crevices or fractures
- 8/64 . . . Oil-based compositions
- 8/66 . . . Compositions based on water or polar solvents ([C09K 8/64](#) takes precedence)
- 8/665 . . . . {containing inorganic compounds (proppants [C09K 8/80](#)) }
- 8/68 . . . . containing organic compounds

**NOTE**

Documents classified in this group are also classified in groups

**C09K**

C09K 8/68  
(continued)

[C09K 8/88 - C09K 8/905](#) according to the specific compositions

[C09K 2211/00 - C09K 2211/188](#) relating to the chemical nature of the luminescent material

- 8/685 . . . . . {containing cross-linking agents}
- 8/70 . . . characterised by their form or by the form of their components, e.g. foams
- 8/703 . . . . . {Foams}
- 8/706 . . . . . {Encapsulated breakers}
- 8/72 . . . Eroding chemicals, e.g. acids
- 8/725 . . . . . {Compositions containing polymers}
- 8/74 . . . . . combined with additives added for specific purposes
- 8/76 . . . . . for preventing or reducing fluid loss
- 8/78 . . . . . for preventing sealing
- 8/80 . . Compositions for reinforcing fractures, e.g. compositions of proppants used to keep the fractures open
- 8/805 . . . {Coated proppants}
- 8/82 . . Oil-based compositions ([C09K 8/64](#) takes precedence)
- 8/84 . . Compositions based on water or polar solvents ([C09K 8/66](#), [C09K 8/82](#) take precedence)
- 8/845 . . . {containing inorganic compounds}
- 8/86 . . . containing organic compounds
- 8/88 . . . . . macromolecular compounds
- 8/882 . . . . . {obtained by reactions only involving carbon-to-carbon unsaturated bonds}
- 8/885 . . . . . {obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds}
- 8/887 . . . . . {containing cross-linking agents}
- 8/90 . . . . . of natural origin, e.g. polysaccharides, cellulose
- 8/905 . . . . . {Biopolymers}
- 8/92 . . characterised by their form or by the form of their components, e.g. encapsulated material ([C09K 8/70](#) takes precedence)
- 8/94 . . . Foams

**9/00 Tenebrescent materials, i.e. materials for which the range of wavelengths for energy absorption is changed as a result of excitation by some form of energy**

**NOTE**

When classifying in groups [C09K 9/02](#) the chemical nature of the tenebrescent material can be further indexed by using indexing codes chosen from [C09K 2211/00 - C09K 2211/188](#)

- 9/02 . Organic tenebrescent materials
- 11/00 Luminescent, e.g. electroluminescent, chemiluminescent materials**
- 11/01 . Recovery of luminescent materials
- 11/02 . Use of particular materials as binders, particle coatings or suspension media therefor
- 11/025 . . {non-luminescent particle coatings or suspension media}
- 11/04 . containing natural or artificial radioactive elements or unspecified radioactive elements
- 11/06 . containing organic luminescent materials

**NOTE**

{When classifying in this group it is desirable to add the indexing codes of groups

- 11/07 . . having chemically interreactive components, e.g. reactive chemiluminescent compositions
- 11/08 . containing inorganic luminescent materials

**NOTES**

1. In groups [C09K 11/08 - C09K 11/897](#), in the absence of an indication to the contrary, classification of materials is made in the last appropriate place
2. { In this group, magnesium is considered as an alkaline earth metal }

**WARNING**

Groups [C09K 11/0805 - C09K 11/0894](#), with the exception of [C09K 11/0883](#) for classifying nitrides, are no longer used for classification of new documents. The backlog of this group is being continuously reclassified to subgroups [C09K 11/54 - C09K 11/897](#)

- 11/0805 . . {Chalcogenides}
- 11/0811 . . . {with zinc or cadmium}
- 11/0816 . . . {with alkaline earth metals}
- 11/0822 . . . {with rare earth metals}
- 11/0827 . . {Halogenides ([C09K 11/0805](#) takes precedence)}
- 11/0833 . . . {with alkali or alkaline earth metals}
- 11/0838 . . {Aluminates; Silicates}
- 11/0844 . . {Germanates}
- 11/085 . . {Vanadates}
- 11/0855 . . {Phosphates}
- 11/0861 . . . {with alkaline earth metals}
- 11/0866 . . . . . {with halogens}
- 11/0872 . . . {with rare earth metals}
- 11/0877 . . {Borates}
- 11/0883 . . {Arsenides; Nitrides; Phosphides}
- 11/0888 . . {Sulfates}
- 11/0894 . . {Antimonates; Arsenates}
- 11/54 . . containing zinc or cadmium
- 11/55 . . containing beryllium, magnesium, alkali metals or alkaline earth metals
- 11/56 . . containing sulfur
- 11/562 . . . {Chalcogenides}
- 11/565 . . . . . {with zinc cadmium}
- 11/567 . . . . . {with alkaline earth metals}
- 11/57 . . containing manganese or rhenium
- 11/572 . . . {Chalcogenides}
- 11/574 . . . . . {with zinc or cadmium}
- 11/576 . . . . . {with alkaline earth metals}
- 11/578 . . . {Sulfates}
- 11/58 . . containing copper, silver or gold
- 11/582 . . . {Chalcogenides}
- 11/584 . . . . . {with zinc or cadmium}
- 11/586 . . . . . {with alkaline earth metals}
- 11/588 . . . {Sulfates}
- 11/59 . . containing silicon
- 11/592 . . . {Chalcogenides}
- 11/595 . . . . . {with zinc or cadmium}
- 11/597 . . . {Sulfates}
- 11/60 . . containing iron, cobalt or nickel
- 11/602 . . . {Chalcogenides}

|        |   |         |  |
|--------|---|---------|--|
| 11/605 | . . . . {with zinc or cadmium}  | 11/687  | . . . . {Borates}  |
| 11/607 | . . . {Silicates}   | 11/688  | . . . . {Sulfates}   |
| 11/61  | . . containing fluorine, chlorine, bromine, iodine or<br>unspecified halogen elements | 11/69   | . . . containing vanadium  |
| 11/611 | . . . {Chalcogenides}   | 11/691  | . . . . {Chalcogenides}  |
| 11/612 | . . . . {with zinc or cadmium}  | 11/693  | . . . . . {with zinc or cadmium}   |
| 11/613 | . . . . {with alkali or alkaline earth metals}  | 11/695  | . . . . . {with alkaline earth metals}                                   |
| 11/615 | . . . {Halogenides}   | 11/696  | . . . . {Halogenides}  |
| 11/616 | . . . . {with alkali or alkaline earth metals}  | 11/698  | . . . . {Aluminates; Silicates}  |
| 11/617 | . . . {Silicates}   | 11/70   | . . containing phosphorus  |
| 11/618 | . . . {Sulfates}  | 11/701  | . . . {Chalcogenides}  |
| 11/62  | . . containing gallium, indium or thallium  | 11/703  | . . . . {with zinc or cadmium}   |
| 11/621 | . . . {Chalcogenides}   | 11/705  | . . . {Halogenides ( <a href="#">C09K 11/701</a> takes<br>precedence)}   |
| 11/623 | . . . . {with zinc or cadmium}  | 11/706  | . . . {Aluminates; Silicates}  |
| 11/625 | . . . . {with alkaline earth metals}  | 11/708  | . . . {Borates}  |
| 11/626 | . . . {Halogenides ( <a href="#">C09K 11/621</a> takes<br>precedence)}                | 11/71   | . . . also containing alkaline earth metals                              |
| 11/628 | . . . . {with alkali or alkaline earth metals}  | 11/712  | . . . . {Halogenides}  |
| 11/63  | . . containing boron  | 11/715  | . . . . . {with alkali or alkaline earth metals}                         |
| 11/632 | . . . {Halogenides}   | 11/717  | . . . . {Aluminates; Silicates}  |
| 11/634 | . . . . {with alkali or alkaline earth metals}  | 11/72   | . . . also containing halogen, e.g. halophosphates                       |
| 11/636 | . . . {Silicates}   | 11/722  | . . . . {Chalcogenides}  |
| 11/638 | . . . {Sulfates}  | 11/725  | . . . . . {with alkaline earth metals}                                   |
| 11/64  | . . containing aluminium  | 11/727  | . . . . {Aluminates; Silicates}  |
| 11/641 | . . . {Chalcogenides}   | 11/73   | . . . . also containing alkaline earth metals                            |
| 11/642 | . . . . {with zinc or cadmium}  | 11/74   | . . containing arsenic, antimony or bismuth                              |
| 11/643 | . . . . {with alkaline earth metals}  | 11/7407 | . . . {Chalcogenides}  |
| 11/644 | . . . {Halogenides ( <a href="#">C09K 11/641</a> takes<br>precedence)}                | 11/7414 | . . . . {with zinc or cadmium}   |
| 11/645 | . . . . {with alkali or alkaline earth metals}  | 11/7421 | . . . . {with alkaline earth metals}                                     |
| 11/646 | . . . {Silicates}   | 11/7428 | . . . {Halogenides ( <a href="#">C09K 11/7407</a> takes<br>precedence)}  |
| 11/647 | . . . {Borates}   | 11/7435 | . . . . {with alkali or alkaline earth metals}                           |
| 11/648 | . . . {Sulfates}  | 11/7442 | . . . {Aluminates; Silicates}  |
| 11/65  | . . containing carbon ( <a href="#">in organic compounds<br/>C09K 11/06</a> )         | 11/745  | . . . {Germanates}   |
| 11/655 | . . . {Aluminates; Silicates}   | 11/7457 | . . . {Vanadates; Chromates; Molybdates;<br>Tungstates}                  |
| 11/66  | . . containing germanium, tin or lead   | 11/7464 | . . . {Phosphates}   |
| 11/661 | . . . {Chalcogenides}   | 11/7471 | . . . . {with alkaline earth metals}                                     |
| 11/662 | . . . . {with zinc or cadmium}  | 11/7478 | . . . . . {with halogens}  |
| 11/663 | . . . . {with alkaline earth metals}  | 11/7485 | . . . {Borates}  |
| 11/664 | . . . {Halogenides ( <a href="#">C09K 11/661</a> takes<br>precedence)}                | 11/7492 | . . . {Arsenides; Nitrides; Phosphides}                                  |
| 11/665 | . . . . {with alkali or alkaline earth metals}  | 11/75   | . . . containing antimony  |
| 11/666 | . . . {Aluminates; Silicates}   | 11/751  | . . . . {Chalcogenides}  |
| 11/667 | . . . {Borates}   | 11/752  | . . . . . {with zinc or cadmium}   |
| 11/668 | . . . {Sulfates}  | 11/753  | . . . . . {with alkaline earth metals}                                   |
| 11/67  | . . containing refractory metals  | 11/755  | . . . . {Halogenides ( <a href="#">C09K 11/751</a> takes<br>precedence)} |
| 11/671 | . . . {Chalcogenides}   | 11/756  | . . . . . {with alkali or alkaline earth metals}                         |
| 11/672 | . . . . {with zinc or cadmium}  | 11/757  | . . . . {Aluminates; Silicates}  |
| 11/673 | . . . . {with alkaline earth metals}  | 11/758  | . . . . {Vanadates; Chromates; Molybdates;<br>Tungstates}                |
| 11/674 | . . . {Halogenides ( <a href="#">C09K 11/671</a> takes<br>precedence)}                | 11/76   | . . . . also containing phosphorus and halogen, e.g.<br>halophosphates   |
| 11/675 | . . . . {with alkali or alkaline earth metals}  | 11/765  | . . . . . {Borates}  |
| 11/676 | . . . {Aluminates; Silicates}   | 11/77   | . . containing rare earth metals   |
| 11/677 | . . . {Germanates}  | 11/7701 | . . . {Chalcogenides}  |
| 11/678 | . . . {Borates}   | 11/7702 | . . . . {with zinc or cadmium}   |
| 11/679 | . . . {Sulfates}  | 11/7703 | . . . . {with alkaline earth metals}                                     |
| 11/68  | . . . containing chromium, molybdenum or tungsten                                     | 11/7704 | . . . {Halogenides ( <a href="#">C09K 11/7701</a> takes<br>precedence)}  |
| 11/681 | . . . . {Chalcogenides}   | 11/7705 | . . . . {with alkali or alkaline earth metals}                           |
| 11/682 | . . . . . {with zinc or cadmium}  |         |  |
| 11/684 | . . . . . {with alkaline earth metals}  |         |  |
| 11/685 | . . . . {Aluminates; Silicates}   |         |  |

11/7706 . . . {Aluminates}

**WARNING**

Group [C09K 11/7706](#) is impacted by reclassification into groups [C09K 11/77062](#) - [C09K 11/77068](#).

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

11/77062 . . . {Silicates}

**WARNING**

Group [C09K 11/77062](#) is incomplete pending reclassification of documents from group [C09K 11/7706](#).

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

11/77064 . . . {Aluminosilicates}

**WARNING**

Group [C09K 11/77064](#) is incomplete pending reclassification of documents from group [C09K 11/7706](#).

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

11/77066 . . . {Aluminium Nitrides or Aluminium Oxynitrides}

**WARNING**

Group [C09K 11/77066](#) is incomplete pending reclassification of documents from group [C09K 11/7706](#).

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

11/77067 . . . {Silicon Nitrides or Silicon Oxynitrides}

**WARNING**

Group [C09K 11/77067](#) is incomplete pending reclassification of documents from group [C09K 11/7706](#).

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

11/77068 . . . {Silicon Aluminium Nitrides or Silicon Aluminium Oxynitrides}

**WARNING**

Group [C09K 11/77068](#) is incomplete pending reclassification of documents from group [C09K 11/7706](#).

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

11/7707 . . . {Germanates}

11/7708 . . . {Vanadates; Chromates; Molybdates; Tungstates}

11/7709 . . . {Phosphates}

11/771 . . . . {with alkaline earth metals}

11/7711 . . . . . {with halogens}

11/7712 . . . {Borates}

11/7713 . . . {Sulfates}

11/7714 . . . {Antimonates; Arsenates}

11/7715 . . . {containing cerium}

11/7716 . . . . {Chalcogenides}

11/7717 . . . . . {with zinc or cadmium}

11/7718 . . . . . {with alkaline earth metals}

11/7719 . . . . {Halogenides ([C09K 11/7716](#) takes precedence)}

11/772 . . . . . {with alkali or alkaline earth metals}

11/7721 . . . . {Aluminates}

**WARNING**

Group [C09K 11/7721](#) is impacted by reclassification into groups [C09K 11/77212](#) - [C09K 11/77218](#).

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

11/77212 . . . . {Silicates}

**WARNING**

Group [C09K 11/77212](#) is incomplete pending reclassification of documents from group [C09K 11/7721](#).

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

11/77214 . . . . {Aluminosilicates}

**WARNING**

Group [C09K 11/77214](#) is incomplete pending reclassification of documents from group [C09K 11/7721](#).

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

11/77216 . . . . {Aluminium Nitrides or Aluminium Oxynitrides}

**WARNING**

Group [C09K 11/77216](#) is incomplete pending reclassification of documents from group [C09K 11/7721](#).

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

11/77217 . . . . {Silicon Nitrides or Silicon Oxynitrides}

**WARNING**

Group [C09K 11/77217](#) is incomplete pending reclassification of documents from group [C09K 11/7721](#).

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

- 11/77218 . . . . {Silicon Aluminium Nitrides or Silicon Aluminium Oxynitrides}  
**WARNING**  
 Group [C09K 11/77218](#) is incomplete pending reclassification of documents from group [C09K 11/7721](#).  
 All groups listed in this Warning should be considered in order to perform a complete search.
- 11/7722 . . . . {Vanadates; Chromates; Molybdates; Tungstates}  
 11/7723 . . . . {Phosphates}  
 11/7724 . . . . . {with alkaline earth metals}  
 11/7725 . . . . . {with halogens}  
 11/7726 . . . . {Borates}  
 11/7727 . . . . {Sulfates}  
 11/7728 . . . {containing europium}  
 11/7729 . . . . {Chalcogenides}  
 11/773 . . . . . {with zinc or cadmium}  
 11/7731 . . . . . {with alkaline earth metals}  
 11/7732 . . . . {Halogenides}  
 11/7733 . . . . . {with alkali or alkaline earth metals}  
 11/7734 . . . . {Aluminates}  
**WARNING**  
 Group [C09K 11/7734](#) is impacted by reclassification into groups [C09K 11/77342](#) - [C09K 11/77348](#).  
 All groups listed in this Warning should be considered in order to perform a complete search.
- 11/77342 . . . . {Silicates}  
**WARNING**  
 Group [C09K 11/77342](#) is incomplete pending reclassification of documents from group [C09K 11/7734](#).  
 All groups listed in this Warning should be considered in order to perform a complete search.
- 11/77344 . . . . {Aluminosilicates}  
**WARNING**  
 Group [C09K 11/77344](#) is incomplete pending reclassification of documents from group [C09K 11/7734](#).  
 All groups listed in this Warning should be considered in order to perform a complete search.
- 11/77346 . . . . {Aluminium Nitrides or Aluminium Oxynitrides}  
**WARNING**  
 Group [C09K 11/77346](#) is incomplete pending reclassification of documents from group [C09K 11/7734](#).  
 All groups listed in this Warning should be considered in order to perform a complete search.
- 11/77347 . . . . {Silicon Nitrides or Silicon Oxynitrides}  
**WARNING**  
 Group [C09K 11/77347](#) is incomplete pending reclassification of documents from group [C09K 11/7734](#).  
 All groups listed in this Warning should be considered in order to perform a complete search.
- 11/77348 . . . . {Silicon Aluminium Nitrides or Silicon Aluminium Oxynitrides}  
**WARNING**  
 Group [C09K 11/77348](#) is incomplete pending reclassification of documents from group [C09K 11/7734](#).  
 All groups listed in this Warning should be considered in order to perform a complete search.
- 11/7735 . . . . {Germanates}  
 11/7736 . . . . {Vanadates; Chromates; Molybdates; Tungstates}  
 11/7737 . . . . {Phosphates}  
 11/7738 . . . . . {with alkaline earth metals}  
 11/7739 . . . . . {with halogens}  
 11/774 . . . . {Borates}  
 11/7741 . . . . {Sulfates}  
 11/7742 . . . . {Antimonates; Arsenates}  
 11/7743 . . . {containing terbium}  
 11/7744 . . . . {Chalcogenides}  
 11/7745 . . . . . {with zinc or cadmium}  
 11/7746 . . . . . {with alkaline earth metals}  
 11/7747 . . . . {Halogenides ([C09K 11/7744](#) takes precedence)}  
 11/7748 . . . . . {with alkali or alkaline earth metals}  
 11/7749 . . . . {Aluminates}  
**WARNING**  
 Group [C09K 11/7749](#) is impacted by reclassification into groups [C09K 11/77492](#) - [C09K 11/77498](#).  
 All groups listed in this Warning should be considered in order to perform a complete search.
- 11/77492 . . . . {Silicates}  
**WARNING**  
 Group [C09K 11/77492](#) is incomplete pending reclassification of documents from group [C09K 11/7749](#).  
 All groups listed in this Warning should be considered in order to perform a complete search.

- 11/77494 . . . . {Aluminosilicates}  
**WARNING**  
 Group [C09K 11/77494](#) is incomplete pending reclassification of documents from group [C09K 11/7749](#).  
 All groups listed in this Warning should be considered in order to perform a complete search.
- 11/77496 . . . . {Aluminium Nitrides or Aluminium Oxynitrides}  
**WARNING**  
 Group [C09K 11/77496](#) is incomplete pending reclassification of documents from group [C09K 11/7749](#).  
 All groups listed in this Warning should be considered in order to perform a complete search.
- 11/77497 . . . . {Silicon Nitrides or Silicon Oxynitrides}  
**WARNING**  
 Group [C09K 11/77497](#) is incomplete pending reclassification of documents from group [C09K 11/7749](#).  
 All groups listed in this Warning should be considered in order to perform a complete search.
- 11/77498 . . . . {Silicon Aluminium Nitrides or Silicon Aluminium Oxynitrides}  
**WARNING**  
 Group [C09K 11/77498](#) is incomplete pending reclassification of documents from group [C09K 11/7749](#).  
 All groups listed in this Warning should be considered in order to perform a complete search.
- 11/775 . . . . {Germanates}  
 11/7751 . . . . {Vanadates; Chromates; Molybdates; Tungstates}  
 11/7752 . . . . {Phosphates}  
 11/7753 . . . . {with alkaline earth metals}  
 11/7754 . . . . {with halogens}  
 11/7755 . . . . {Borates}  
 11/7756 . . . {containing neodymium}  
 11/7757 . . . . {Halogenides}  
 11/7758 . . . . {Aluminates; Silicates}  
 11/7759 . . . {containing samarium}  
 11/776 . . . . {Chalcogenides}  
 11/7761 . . . . {with alkaline earth metals}  
 11/7762 . . . . {Halogenides ([C09K 11/776](#) takes precedence)}  
 11/7763 . . . . {with alkali or alkaline earth metals}  
 11/7764 . . . . {Aluminates; Silicates}  
 11/7765 . . . . {Vanadates; Chromates; Molybdates; Tungstates}  
 11/7766 . . . {containing two or more rare earth metals}  
 11/7767 . . . . {Chalcogenides}  
 11/7768 . . . . {with alkaline earth metals}
- 11/7769 . . . . {Oxides ([C09K 11/7768](#) takes precedence)}  
 11/777 . . . . {Oxyhalogenides}  
 11/7771 . . . . {Oxysulfides}  
 11/7772 . . . . {Halogenides ([C09K 11/7767](#) takes precedence)}  
 11/7773 . . . . {with alkali or alkaline earth metal}  
 11/7774 . . . . {Aluminates}  
**WARNING**  
 Group [C09K 11/7774](#) is impacted by reclassification into groups [C09K 11/77742](#) - [C09K 11/77748](#).  
 All groups listed in this Warning should be considered in order to perform a complete search.
- 11/77742 . . . . {Silicates}  
**WARNING**  
 Group [C09K 11/77742](#) is incomplete pending reclassification of documents from group [C09K 11/7774](#).  
 All groups listed in this Warning should be considered in order to perform a complete search.
- 11/77744 . . . . {Aluminosilicates}  
**WARNING**  
 Group [C09K 11/77744](#) is incomplete pending reclassification of documents from group [C09K 11/7774](#).  
 All groups listed in this Warning should be considered in order to perform a complete search.
- 11/77746 . . . . {Aluminium Nitrides or Aluminium Oxynitrides}  
**WARNING**  
 Group [C09K 11/77746](#) is incomplete pending reclassification of documents from group [C09K 11/7774](#).  
 All groups listed in this Warning should be considered in order to perform a complete search.
- 11/77747 . . . . {Silicon Nitrides or Silicon Oxynitrides}  
**WARNING**  
 Group [C09K 11/77747](#) is incomplete pending reclassification of documents from group [C09K 11/7774](#).  
 All groups listed in this Warning should be considered in order to perform a complete search.

- 11/77748 . . . . {Silicon Aluminium Nitrides or Silicon Aluminium Oxynitrides}
- WARNING**
- Group [C09K 11/77748](#) is incomplete pending reclassification of documents from group [C09K 11/7774](#).
- All groups listed in this Warning should be considered in order to perform a complete search.
- 11/7775 . . . . {Germanates}
- 11/7776 . . . . {Vanadates; Chromates; Molybdates; Tungstates}
- 11/7777 . . . . {Phosphates}
- 11/7778 . . . . . {with alkaline earth metals}
- 11/7779 . . . . . {with halogens}
- 11/778 . . . . {Borates}
- 11/7781 . . . . {Sulfates}
- 11/7782 . . . . {Antimonates; Arsenates}
- 11/7783 . . . {containing two or more rare earth metals one of which being europium}
- 11/7784 . . . . {Chalcogenides}
- 11/7785 . . . . . {with zinc or cadmium}
- 11/7786 . . . . . {with alkaline earth metals}
- 11/7787 . . . . . {Oxides ([C09K 11/7785](#) takes precedence)}
- 11/7788 . . . . . {Oxyhalogenides}
- 11/7789 . . . . . {Oxysulfides}
- 11/779 . . . . {Halogenides ([C09K 11/7784](#) takes precedence)}
- 11/7791 . . . . . {with alkali or alkaline earth metals}
- 11/7792 . . . . {Aluminates}
- WARNING**
- Group [C09K 11/7792](#) is impacted by reclassification into groups [C09K 11/77922](#) - [C09K 11/77928](#).
- All groups listed in this Warning should be considered in order to perform a complete search.
- 11/77922 . . . . {Silicates}
- WARNING**
- Group [C09K 11/77922](#) is incomplete pending reclassification of documents from group [C09K 11/7792](#).
- All groups listed in this Warning should be considered in order to perform a complete search.
- 11/77924 . . . . {Aluminosilicates}
- WARNING**
- Group [C09K 11/77924](#) is incomplete pending reclassification of documents from group [C09K 11/7792](#).
- All groups listed in this Warning should be considered in order to perform a complete search.

- 11/77926 . . . . {Aluminium Nitrides or Aluminium Oxynitrides}
- WARNING**
- Group [C09K 11/77926](#) is incomplete pending reclassification of documents from group [C09K 11/7792](#).
- All groups listed in this Warning should be considered in order to perform a complete search.
- 11/77927 . . . . {Silicon Nitrides or Silicon Oxynitrides}
- WARNING**
- Group [C09K 11/77927](#) is incomplete pending reclassification of documents from group [C09K 11/7792](#).
- All groups listed in this Warning should be considered in order to perform a complete search.
- 11/77928 . . . . {Silicon Aluminium Nitrides or Silicon Aluminium Oxynitrides}
- WARNING**
- Group [C09K 11/77928](#) is incomplete pending reclassification of documents from group [C09K 11/7792](#).
- All groups listed in this Warning should be considered in order to perform a complete search.
- 11/7793 . . . . {Germanates}
- 11/7794 . . . . {Vanadates; Chromates; Molybdates; Tungstates}
- 11/7795 . . . . {Phosphates}
- 11/7796 . . . . . {with alkaline earth metals}
- 11/7797 . . . . {Borates}
- 11/7798 . . . . {Antimonates; Arsenates}
- 11/87 . . . containing platina group metals
- 11/873 . . . {Chalcogenides}
- 11/876 . . . . {with zinc or cadmium}
- 11/88 . . . containing selenium, tellurium or unspecified chalcogen elements
- 11/881 . . . {Chalcogenides}
- 11/883 . . . . {with zinc or cadmium}
- 11/885 . . . . {with alkaline earth metals}
- 11/886 . . . . {with rare earth metals}
- 11/888 . . . {Borates}
- 11/89 . . . containing mercury
- 11/892 . . . {Chalcogenides}
- 11/895 . . . {Halogenides ([C09K 11/892](#) takes precedence)}
- 11/897 . . . . {with alkali or alkaline metals}
- 13/00 Etching, surface-brightening or pickling compositions** (for glass [C03C 15/00](#), {[C03C 25/66](#); for mortars, concrete, artificial or natural stone or ceramics [C04B 41/5338](#) } ; for metallic material [C23F](#), [C23G 1/00](#), [C25F 1/00](#); {for semi-conductors [H01L](#)})
- NOTE**
- In groups [C09K 13/02](#) - [C09K 13/12](#), in the absence of an indication to the contrary, materials are classified in the last appropriate place.

- 13/02 . containing an alkali metal hydroxide
- 13/04 . containing an inorganic acid
- 13/06 . . with organic material
- 13/08 . . containing a fluorine compound
- 13/10 . . containing a boron compound
- 13/12 . containing heavy metal salts in an amount of at least 50% of the non-solvent components

**15/00 Anti-oxidant compositions; Compositions inhibiting chemical change** ({for use in well-specified applications, [see the relevant places](#), e.g. in etching or pickling compositions [C09K 13/00](#), [C23G](#)}, in foodstuffs [A21D](#), [A23](#), {in association with organic compounds [C07C](#), [C07D](#)}, in macromolecular compositions [C08](#); in liquid fuels or lubricants [C10](#); in fats, fatty substances, fatty oils or waxes [C11B 5/00](#); in detergents [C11D](#); {coating or impregnating carbon or graphite based bodies to protect them from oxidation [C04B 41/45](#)}; corrosion inhibiting compositions for metallic material [C23F 11/00](#))

#### NOTE

In groups [C09K 15/02](#) - [C09K 15/34](#), in the absence of an indication to the contrary, a composition is classified in the last appropriate place.

- 15/02 . containing inorganic compounds
- 15/04 . containing organic compounds
- 15/06 . . containing oxygen
- 15/08 . . . containing a phenol or quinone moiety
- 15/10 . . containing sulfur
- 15/12 . . containing sulfur and oxygen
- 15/14 . . . containing a phenol or quinone moiety
- 15/16 . . containing nitrogen
- 15/18 . . . containing an amine or imine moiety
- 15/20 . . containing nitrogen and oxygen
- 15/22 . . . containing an amide or imide moiety
- 15/24 . . . containing a phenol or quinone moiety
- 15/26 . . containing nitrogen and sulfur
- 15/28 . . containing nitrogen, oxygen and sulfur
- 15/30 . . containing heterocyclic ring with at least one nitrogen atom as ring member
- 15/32 . . containing {two or more of} boron, silicon, phosphorus, selenium, tellurium or a metal
- 15/322 . . . {containing only phosphorus}
- 15/324 . . . . {containing phosphorus and sulfur}
- 15/326 . . . {containing only metals}
- 15/328 . . . {containing boron, silicon, selenium or tellurium}
- 15/34 . containing plant or animal materials of unknown composition

**17/00 Soil-conditioning materials or soil-stabilising materials** (specially adapted for boreholes or wells [C09K 8/00](#); fertilisers [C05](#); consolidating by placing solidifying or pore-filling substances in the soil [E02D 3/12](#))

#### NOTES

1. This group covers mixtures of soil-conditioning or soil-stabilising materials with fertilisers characterised by their soil-conditioning or soil-stabilising activity.

2. This group does not cover mixtures of soil-conditioning or soil-stabilising materials with fertilisers characterised by their fertilising activity which are covered by subclass [C05G](#).
3. For the purpose of classification in this group, the presence of fertilisers in the composition is not taken into account.
4. In groups [C09K 17/02](#) - [C09K 17/50](#), in the absence of an indication to the contrary, materials are classified in the last appropriate place.

- 17/02 . containing inorganic compounds only
- 17/04 . . applied in a physical form other than a solution or a grout, e.g. as granules or gases
- 17/045 . . . {applied as gases}
- 17/06 . . Calcium compounds, e.g. lime
- 17/08 . . Aluminium compounds, e.g. aluminium hydroxide
- 17/10 . . Cements, e.g. Portland cement
- 17/12 . . Water-soluble silicates, e.g. waterglass
- 17/14 . containing organic compounds only
- 17/16 . . applied in a physical form other than a solution or a grout, e.g. as platelets or granules
- 17/18 . . Prepolymers; Macromolecular compounds
- 17/20 . . . Vinyl polymers
- 17/22 . . . . Polyacrylates; Polymethacrylates
- 17/24 . . . Condensation polymers of aldehydes or ketones
- 17/26 . . . . Phenol-aldehyde condensation polymers
- 17/28 . . . . Urea-aldehyde condensation polymers
- 17/30 . . . Polyisocyanates; Polyurethanes
- 17/32 . . . of natural origin, e.g. cellulosic materials
- 17/34 . . . Bituminous materials
- 17/36 . . Compounds having one or more carbon-to-silicon linkages
- 17/38 . . . Siloxanes
- 17/40 . containing mixtures of inorganic and organic compounds
- 17/42 . . Inorganic compounds mixed with organic active ingredients, e.g. accelerators
- 17/44 . . . the inorganic compound being cement
- 17/46 . . . the inorganic compound being a water-soluble silicate
- 17/48 . . Organic compounds mixed with inorganic active ingredients, e.g. polymerisation catalysts
- 17/50 . . . the organic compound being of natural origin, e.g. cellulose derivatives
- 17/52 . Mulches

#### 19/00 Liquid crystal materials

##### NOTES

1. In groups [C09K 19/02](#) - [C09K 19/60](#), { with the exception of groups [C09K 19/0208](#) - [C09K 19/0283](#) }, in the absence of an indication to the contrary, materials are classified in the last appropriate place.
2. Mixtures containing two or more liquid crystal compounds covered individually by the same one of groups [C09K 19/04](#) - [C09K 19/40](#) are classified only in that group.
3. If liquid crystal components of the mixtures classified in groups [C09K 19/42](#) - [C09K 19/50](#) are of importance as such, they should also be

## C09K

C09K 19/00

(continued)

- classified according to the compounds in groups [C09K 19/04](#) - [C09K 19/40](#).
- 19/02 . . characterised by optical, electrical or physical properties of the components, in general
  - 19/0208 . . {Twisted Nematic (T.N.); Super Twisted Nematic (S.T.N.); Optical Mode Interference (O.M.I.)}
  - 19/0216 . . {Super Birefringence Effect (S.B.E.); Electrically Controlled Birefringence (E.C.B.)}
  - 19/0225 . . {Ferroelectric}
  - 19/0233 . . {Electroclinic}
  - 19/0241 . . {Ferrielectric; Ferromagnetic}
  - 19/025 . . {Ferronematic; Ferrosmetic}
  - 19/0258 . . {Flexoelectric}
  - 19/0266 . . {Antiferroelectrics}
  - 19/0275 . . {Blue phase}
  - 19/0283 . . {Cubic phase}
  - 19/0291 . . {antclinic}
  - 19/04 . . characterised by the chemical structure of the liquid crystal components {, e.g. by a specific unit}
  - 19/0403 . . {the structure containing one or more specific, optionally substituted ring or ring systems}
  - 2019/0407 . . . {containing a carbocyclic ring, e.g. dicyano-benzene, chlorofluoro-benzene or cyclohexanone}
  - 2019/0411 . . . {containing a chlorofluoro-benzene, e.g. 2-chloro-3-fluoro-phenylene-1,4-diyl}
  - 2019/0414 . . . {containing a heterocyclic ring}
  - 2019/0418 . . . {containing a dendromer structure; Dendritic liquid crystals}
  - 19/0422 . . {Sugars ([polysaccharides C09K 19/3819](#))}
  - 2019/0425 . . {characterized by a specific unit that results in a functional effect}
  - 2019/0429 . . . {the specific unit being a carbocyclic or heterocyclic discotic unit}
  - 2019/0433 . . . {the specific unit being a luminescent or electroluminescent unit}
  - 2019/0437 . . . {the specific unit being an optically active chain used as linking group between rings or as end group}
  - 2019/044 . . . {the specific unit being a perfluoro chain used as an end group}
  - 2019/0444 . . {characterized by a linking chain between rings or ring systems, a bridging chain between extensive mesogenic moieties or an end chain group}
  - 2019/0448 . . . {the end chain group being a polymerizable end group, e.g. -Sp-P or acrylate}
  - 2019/0451 . . . {the end chain group being a CH<sub>3</sub>CH=CHCH<sub>2</sub>CH<sub>2</sub>- chain}
  - 2019/0455 . . . {the linking chain being a -CF<sub>2</sub>CF<sub>2</sub>- , -CF<sub>2</sub>CF<sub>2</sub>CF<sub>2</sub>CF<sub>2</sub>- or -CH<sub>2</sub>CF<sub>2</sub>CF<sub>2</sub>CH<sub>2</sub>- chain}
  - 2019/0459 . . . {the linking chain being a -CF=CF- chain, e.g. 1,2-difluoroethen-1,2-diyl}
  - 2019/0462 . . . {the linking chain being a -CF<sub>2</sub>CF<sub>2</sub>O- chain}
  - 2019/0466 . . . {the linking chain being a -CF<sub>2</sub>O- chain}
  - 2019/047 . . . {the linking chain being a -CH<sub>2</sub>CF<sub>2</sub>O- chain}
  - 2019/0474 . . . {the linking chain being a -CHFO- chain}
  - 2019/0477 . . {characterized by the positioning of substituents on phenylene}
  - 2019/0481 . . . {Phenylene substituted in meta position}
  - 2019/0485 . . . {Phenylene substituted in ortho position}
  - 2019/0488 . . {characterized by a special bonding}
  - 2019/0492 . . . {the special bonding being an hydrogen bond}
  - 2019/0496 . . . {the special bonding being a specific pi-conjugated group}
  - 19/06 . . Non-steroidal liquid crystal compounds
  - 19/061 . . . {Linear compounds without any rings}
  - 19/062 . . . {containing one non-condensed benzene ring}
  - 19/063 . . . {containing one non-condensed saturated non-aromatic ring, e.g. cyclohexane ring}
  - 19/065 . . . {containing one non-condensed unsaturated non-aromatic ring, e.g. cyclohexene ring}
  - 19/066 . . . {containing one heterocyclic ring having oxygen as heteroatom}
  - 19/067 . . . {containing one heterocyclic ring having nitrogen as heteroatom}
  - 19/068 . . . {containing one heterocyclic ring having sulfur as heteroatom}
  - 19/08 . . . containing at least two non-condensed rings
  - 19/10 . . . . containing at least two benzene rings
  - 19/12 . . . . . at least two benzene rings directly linked, e.g. biphenyls
  - 2019/121 . . . . . {Compounds containing phenylene-1,4-diyl (-Ph-)}
  - 2019/122 . . . . . {Ph-Ph}
  - 2019/123 . . . . . {Ph-Ph-Ph}
  - 2019/124 . . . . . {Ph-Ph-Ph-Ph}
  - 2019/125 . . . . . {Ph-Ph-Ph-Ph-Ph or more Ph rings}
  - 19/126 . . . . . {Compounds containing at least one asymmetric carbon atom}
  - 2019/127 . . . . . {Compounds containing phenylene-1,3-diyl}
  - 2019/128 . . . . . {Compounds containing phenylene-1,2-diyl}
  - 19/14 . . . . . linked by a carbon chain
  - 19/16 . . . . . the chain containing carbon-to-carbon double bonds, e.g. stilbenes
  - 2019/161 . . . . . {Ph-CH=CH-Ph}
  - 2019/163 . . . . . {Ph-Ph-CH=CH-Ph}
  - 2019/165 . . . . . {Ph-Ph-CH=CH-Ph-Ph}
  - 2019/166 . . . . . {Ph-Ph-Ph-CH=CH-Ph}
  - 2019/168 . . . . . {Ph-CH=CH-Ph-CH=CH-Ph}
  - 19/18 . . . . . the chain containing carbon-to-carbon triple bonds, e.g. tolans
  - 2019/181 . . . . . {Ph-C≡C-Ph}
  - 2019/183 . . . . . {Ph-Ph-C≡C-Ph}
  - 2019/185 . . . . . {Ph-Ph-C≡C-Ph-Ph}
  - 2019/186 . . . . . {Ph-C≡C-C≡C-Ph}
  - 2019/188 . . . . . {Ph-C≡C-Ph-C≡C-Ph}
  - 19/20 . . . . . linked by a chain containing carbon and oxygen atoms as chain links, e.g. esters {or ethers}
  - 19/2007 . . . . . {the chain containing -COO- or -OCO-groups}
  - 19/2014 . . . . . {containing additionally a linking group other than -COO- or -OCO-, e.g. -CH<sub>2</sub>-CH<sub>2</sub>-, -CH=CH-, -C=C-; containing at least one additional carbon atom in the chain containing -COO- or -OCO- groups, e.g. -(CH<sub>2</sub>)<sub>m</sub>-COO-(CH<sub>2</sub>)<sub>n</sub>-}
  - 19/2021 . . . . . {Compounds containing at least one asymmetric carbon atom}

|           |           |   |           |           |  |
|-----------|-----------|---|-----------|-----------|--|
| 19/2028   | . . . . . | {containing additionally a linking group other than -COO- or -OCO-, e.g. -CH <sub>2</sub> -CH <sub>2</sub> -, -CH=CH-, -C=C-; containing at least one additional carbon atom in the chain containing -COO- or -OCO- groups, e.g. -COO-CH*-CH <sub>3</sub> } | 2019/3045 | . . . . . | {Cy-Ph-C <sub>2</sub> H <sub>4</sub> -Ph-Cy}   |
| 2019/2035 | . . . . . | {Ph-COO-Ph}   | 2019/3046 | . . . . . | {Cy-C <sub>2</sub> H <sub>4</sub> -Ph-C <sub>2</sub> H <sub>4</sub> -Cy}                             |
| 2019/2042 | . . . . . | {Ph-Ph-COO-Ph}  | 19/3048   | . . . . . | {in which at least two rings are linked by a carbon chain containing carbon to carbon double bonds}  |
| 2019/205  | . . . . . | {Ph-Ph-Ph-COO-Ph}   | 2019/305  | . . . . . | {Cy-CH=CH-Cy}  |
| 2019/2057 | . . . . . | {Ph-Ph-Ph-Ph-COO-Ph, or more Ph rings}  | 2019/3051 | . . . . . | {Cy-CH=CH-Cy-Ph}   |
| 2019/2064 | . . . . . | {Ph-Ph-COO-Ph-Ph}   | 2019/3053 | . . . . . | {Cy-CH=CH-Ph}  |
| 2019/2071 | . . . . . | {Ph-Ph-Ph-COO-Ph-Ph, or more Ph rings}  | 2019/3054 | . . . . . | {Cy-Cy-CH=CH-Ph}   |
| 2019/2078 | . . . . . | {Ph-COO-Ph-COO-Ph}  | 2019/3056 | . . . . . | {Cy-Ph-CH=CH-Ph}   |
| 2019/2085 | . . . . . | {Ph-CH=CH-Ph-COO-Ph}  | 2019/3057 | . . . . . | {Cy-Ph-Ph-CH=CH-Ph}  |
| 2019/2092 | . . . . . | {Ph-C≡C-Ph-COO-Ph}  | 19/3059   | . . . . . | {in which at least two rings are linked by a carbon chain containing carbon to carbon triple bonds}  |
| 19/22     | . . . . . | linked by a chain containing carbon and nitrogen atoms as chain links, e.g. Schiff bases  | 2019/306  | . . . . . | {Cy-C≡C-Cy}  |
| 19/24     | . . . . . | linked by a chain containing nitrogen-to-nitrogen bonds   | 2019/3062 | . . . . . | {Cy-C≡C-Ph}  |
| 19/26     | . . . . . | Azoxy compounds   | 2019/3063 | . . . . . | {Cy-Ph-C≡C-Ph}   |
| 19/28     | . . . . . | linked by a chain containing carbon and sulfur atoms as chain links, e.g. thioesters  | 2019/3065 | . . . . . | {Cy-Ph-Ph-C≡C-Ph}  |
| 19/30     | . . . . . | containing saturated or unsaturated non-aromatic rings, e.g. cyclohexane rings  | 19/3066   | . . . . . | {in which the rings are linked by a chain containing carbon and oxygen atoms, e.g. esters or ethers} |
| 19/3001   | . . . . . | {Cyclohexane rings}   | 19/3068   | . . . . . | {chain containing -COO- or -OCO-groups}  |
| 19/3003   | . . . . . | {Compounds containing at least two rings in which the different rings are directly linked (covalent bond)}  | 2019/3069 | . . . . . | {Cy-COO-Cy}  |
| 2019/3004 | . . . . . | {Cy-Cy}   | 2019/3071 | . . . . . | {Cy-Cy-COO-Cy}   |
| 2019/3006 | . . . . . | {Cy-Cy-Cy}  | 2019/3072 | . . . . . | {Cy-Cy-Cy-COO-Cy, or more Cy rings}  |
| 2019/3007 | . . . . . | {Cy-Cy-Cy-Cy or more Cy rings}  | 2019/3074 | . . . . . | {Cy-Cy-COO-Cy-Cy, or more Cy rings}  |
| 2019/3009 | . . . . . | {Cy-Ph}   | 2019/3075 | . . . . . | {Cy-COO-Ph}  |
| 2019/301  | . . . . . | {Cy-Cy-Ph}  | 2019/3077 | . . . . . | {Cy-Cy-COO-Ph}   |
| 2019/3012 | . . . . . | {Cy-Cy-Cy-Ph, or more Cy rings}   | 2019/3078 | . . . . . | {Cy-Cy-COO-Ph-Cy}  |
| 2019/3013 | . . . . . | {Cy-Ph-Cy}  | 2019/308  | . . . . . | {Cy-Cy-COO-Ph-Ph}  |
| 2019/3015 | . . . . . | {Cy-Cy-Ph-Cy}   | 2019/3081 | . . . . . | {Cy-Ph-COO-Cy}   |
| 2019/3016 | . . . . . | {Cy-Ph-Ph}  | 2019/3083 | . . . . . | {Cy-Ph-COO-Ph}   |
| 2019/3018 | . . . . . | {Ph-Cy-Ph}  | 2019/3084 | . . . . . | {Cy-Ph-COO-Ph-Cy}  |
| 2019/3019 | . . . . . | {Cy-Cy-Ph-Ph}   | 19/3086   | . . . . . | {in which at least two rings are linked by a chain containing nitrogen atoms}                        |
| 2019/3021 | . . . . . | {Cy-Ph-Ph-Cy}   | 19/3087   | . . . . . | {in which at least two rings are linked by a chain containing sulfur atoms}                          |
| 2019/3022 | . . . . . | {Cy-Ph-Cy-Ph}   | 2019/3089 | . . . . . | {Cy-S-Cy}  |
| 2019/3024 | . . . . . | {Ph-Cy-Cy-Ph}   | 2019/309  | . . . . . | {Cy-S-Ph}  |
| 2019/3025 | . . . . . | {Cy-Ph-Ph-Ph}   | 2019/3092 | . . . . . | {Cy-S-Ph-Ph}   |
| 2019/3027 | . . . . . | {Compounds comprising 1,4-cyclohexylene and 2,3-difluoro-1,4-phenylene}   | 2019/3093 | . . . . . | {Cy-Ph-S-Ph}   |
| 19/3028   | . . . . . | {in which at least two rings are linked by a carbon chain containing carbon to carbon single bonds}   | 2019/3095 | . . . . . | {in which the end group is the monoterpene menthyl}  |
| 2019/303  | . . . . . | {Cy-C <sub>2</sub> H <sub>4</sub> -Cy}  | 2019/3096 | . . . . . | {Cyclobutane rings}  |
| 2019/3031 | . . . . . | {Cy-Cy-C <sub>2</sub> H <sub>4</sub> -Cy}   | 19/3098   | . . . . . | {Unsaturated non-aromatic rings, e.g. cyclohexene rings}   |
| 2019/3033 | . . . . . | {Cy-Cy-Cy-C <sub>2</sub> H <sub>4</sub> -Cy}  | 19/32     | . . . . . | containing condensed ring systems, i.e. fused, bridged or spiro ring systems                         |
| 2019/3034 | . . . . . | {Cy-Cy-C <sub>2</sub> H <sub>4</sub> -Cy-Cy}  | 19/321    | . . . . . | {Compounds containing a bicyclo [2,2,2] octane ring}   |
| 2019/3036 | . . . . . | {Cy-C <sub>2</sub> H <sub>4</sub> -Ph}  | 19/322    | . . . . . | {Compounds containing a naphthalene ring or a completely or partially hydrogenated naphthalene ring} |
| 2019/3037 | . . . . . | {Cy-Cy-C <sub>2</sub> H <sub>4</sub> -Ph}   | 2019/323  | . . . . . | {containing a binaphthyl}  |
| 2019/3039 | . . . . . | {Cy-Cy-Cy-C <sub>2</sub> H <sub>4</sub> -Ph}  | 2019/324  | . . . . . | {containing a dihydronaphthalene}  |
| 2019/304  | . . . . . | {Cy-C <sub>2</sub> H <sub>4</sub> -Ph-Ph}   | 2019/325  | . . . . . | {containing a tetrahydronaphthalene, e.g. -2,6-diyl (tetralin)}                                      |
| 2019/3042 | . . . . . | {Cy-Cy-C <sub>2</sub> H <sub>4</sub> -Ph-Ph}  | 2019/326  | . . . . . | {containing a decahydronaphthalene, e.g. -2,6-diyl (decalin)}  |
| 2019/3043 | . . . . . | {Cy-Cy-C <sub>2</sub> H <sub>4</sub> -Ph-Cy}  | 2019/327  | . . . . . | {containing a spiro ring system}   |

## C09K

- 2019/328 . . . . {containing a triphenylene ring system}
- 19/34 . . . containing at least one heterocyclic ring
- 19/3402 . . . . {having oxygen as hetero atom (sugars  
C09K 19/0422)}
- 19/3405 . . . . {the heterocyclic ring being a five-  
membered ring}
- 2019/3408 . . . . . {Five-membered ring with oxygen(s) in  
fused, bridged or spiro ring systems}
- 19/3411 . . . . . {the heterocyclic ring being a three-  
membered ring}
- 2019/3413 . . . . . {Three-membered member ring with  
oxygen(s), e.g. oxirane in fused, bridged  
or spiro ring systems}
- 2019/3416 . . . . . {the heterocyclic ring being a four-  
membered ring, e.g. oxetane}
- 2019/3419 . . . . . {Four-membered ring with oxygen(s),  
e.g. oxetane, in fused, bridged or spiro  
ring systems}
- 2019/3422 . . . . . {the heterocyclic ring being a six-  
membered ring}
- 2019/3425 . . . . . {Six-membered ring with oxygen(s) in  
fused, bridged or spiro ring systems}
- 2019/3427 . . . . . {Six-membered ring with 3 or more  
oxygen atoms}
- 2019/343 . . . . . {the heterocyclic ring being a seven-  
membered ring}
- 2019/3433 . . . . . {Seven-membered ring with oxygen(s)  
in fused, bridged or spiro ring systems}
- 2019/3436 . . . . . {Seven-membered ring with 3 or more  
oxygen atoms}
- 2019/3438 . . . . . {Crown ethers}
- 19/3441 . . . . . {having nitrogen as hetero atom}
- 19/3444 . . . . . {the heterocyclic ring being a six-  
membered aromatic ring containing one  
nitrogen atom, e.g. pyridine}
- 19/3447 . . . . . {Pyridine condensed or bridged with  
another ring system, e.g. quinoline or  
acridine}
- 19/345 . . . . . {the heterocyclic ring being a six-  
membered aromatic ring containing two  
nitrogen atoms}
- 19/3452 . . . . . {Pyrazine}
- 19/3455 . . . . . {Pyridazine}
- 19/3458 . . . . . {Uncondensed pyrimidines}
- 19/3461 . . . . . {Pyrimidine-tolane}
- 19/3463 . . . . . {Pyrimidine with a carbon chain  
containing at least one asymmetric  
carbon atom, i.e. optically active  
pyrimidines}
- 19/3466 . . . . . {Pyrimidine with at least another  
heterocycle in the chain}
- 19/3469 . . . . . {Pyrimidine with a specific end-group  
other than alkyl, alkoxy or -C\*-}
- 19/3472 . . . . . {Pyrimidine condensed or bridged with  
another ring system}
- 19/3475 . . . . . {the heterocyclic ring being a six-  
membered aromatic ring containing at  
least three nitrogen atoms}
- 19/3477 . . . . . {the heterocyclic ring being a five-  
membered aromatic ring containing at  
least one nitrogen atom}
- 19/348 . . . . . {containing at least two nitrogen atoms}
- 19/3483 . . . . . {the heterocyclic ring being a non-  
aromatic ring}
- 19/3486 . . . . . {the heterocyclic ring containing  
nitrogen and oxygen atoms}
- 19/3488 . . . . . {the heterocyclic ring having more  
than 6 members, e.g. macrocycles,  
phthalocyanines}
- 19/3491 . . . . . {having sulfur as hetero atom}
- 19/3494 . . . . . {the heterocyclic ring containing sulfur  
and oxygen atoms}
- 19/3497 . . . . . {the heterocyclic ring containing sulfur  
and nitrogen atoms}
- 19/36 . . Steroidal liquid crystal compounds
- 19/38 . . Polymers
- 19/3804 . . . {with mesogenic groups in the main chain}
- 19/3809 . . . . {Polyesters; Polyester derivatives, e.g.  
polyamides}
- 19/3814 . . . . {Polyethers}
- 19/3819 . . . . {Polysaccharides or derivatives thereof}
- 19/3823 . . . . {containing heterocycles having at least one  
nitrogen as ring hetero atom}
- 19/3828 . . . . . {containing triazine rings}
- 19/3833 . . . {with mesogenic groups in the side chain}
- 19/3838 . . . . {Polyesters; Polyester derivatives}
- 19/3842 . . . . {Polyvinyl derivatives}
- 19/3847 . . . . . {Polyvinylethers}
- 19/3852 . . . . . {Poly(meth)acrylate derivatives}
- 19/3857 . . . . . {containing at least one asymmetric  
carbon atom}
- 19/3861 . . . . . {containing condensed ring systems}
- 19/3866 . . . . . {containing steroid groups}
- 19/3871 . . . . . {containing amino acid derivatives}
- 19/3876 . . . . . {Polyoxyalkylene polymers}
- 19/388 . . . . . {Polyepoxides}
- 19/3885 . . . . . {Polyurethanes}
- 19/389 . . . . . {Polypeptides}
- 19/3895 . . . . . {containing two or more mesogenic groups  
per monomer unit, e.g. polyitaconates,  
polymaleates}
- 19/40 . . . containing elements other than carbon, hydrogen,  
halogen, oxygen, nitrogen or sulfur, e.g. silicon,  
metals
- 19/402 . . . . {containing deuterium}
- 19/404 . . . . {containing boron or phosphorus}
- 19/406 . . . . {containing silicon}
- 19/408 . . . . . {Polysiloxanes}
- 19/42 . . . Mixtures of liquid crystal compounds covered  
by two or more of the preceding groups  
C09K 19/06 - C09K 19/40
- 19/44 . . . containing compounds with benzene rings  
directly linked
- 19/46 . . . containing esters
- 19/48 . . . containing Schiff bases
- 19/50 . . . containing steroidal liquid crystal compounds
- 19/52 . . . characterised by components which are not liquid  
crystals, e.g. additives {with special physical aspect:  
solvents, solid particles}
- 2019/521 . . . {Inorganic solid particles}
- 2019/523 . . . {Organic solid particles}
- 2019/525 . . . {Solvents}
- 2019/526 . . . {Gelling agents}
- 2019/528 . . . {Surfactants}
- 19/54 . . Additives having no specific mesophase  
{characterised by their chemical composition}
- 19/542 . . . {Macromolecular compounds}

|                |  |           |   |
|----------------|--|-----------|---|
| 19/544         | . . . . {as dispersing or encapsulating medium around the liquid crystal}  | 2200/026  | . . . . Kaolin  |
| 2019/546       | . . . . {creating a polymeric network}   | 2200/0265 | . . . Mica  |
| 2019/548       | . . . . {stabilizing the alignment; Polymer stabilized alignment}  | 2200/0269 | . . . Ceramics  |
| 19/56          | . . . Aligning agents  | 2200/0273 | . . Boron-containing compounds  |
| 19/58          | . . Dopants or charge transfer agents  | 2200/0278 | . . Fibres  |
| 19/582         | . . . {Electrically active dopants, e.g. charge transfer agents}   | 2200/0282 | . . . Carbon fibres   |
| 19/584         | . . . . {having a condensed ring system; macrocyclic compounds}  | 2200/0286 | . . . Asbestos  |
| 19/586         | . . . {Optically active dopants; chiral dopants}   | 2200/0291 | . . . Glass fibres  |
| 19/588         | . . . . {Heterocyclic compounds}   | 2200/0295 | . . . Ceramic fibres  |
| 19/60          | . . Pleochroic dyes  | 2200/04   | . Non-macromolecular organic compounds  |
| 19/601         | . . . {Azoic}  | 2200/0405 | . . Hydrocarbons  |
| 19/603         | . . . {Anthroquinonic}   | 2200/0411 | . . Halogen-containing compounds  |
| 19/605         | . . . {Azomethine dyes}  | 2200/0417 | . . Phosphorus-containing compounds   |
| 19/606         | . . . {Perylene dyes}  | 2200/0423 | . . Boron-containing compounds  |
| 19/608         | . . . {Quinoxaline dyes}   | 2200/0429 | . . Alcohols, phenols, ethers   |
| <b>21/00</b>   | <b>Fireproofing materials (for use in a particular application, see the relevant places, e.g. fireproofing of wood B27K, of polymers C08, of textiles D06M, of paper D21H; fireproof paints C09D 5/18)</b> | 2200/0435 | . . Aldehydes, ketones  |
|                | <b>NOTE</b>  | 2200/0441 | . . Carboxylic acids, salts, anhydrides or esters thereof                             |
|                | In groups C09K 21/02 - C09K 21/14, in the absence of an indication to the contrary, materials are classified in the last appropriate place.  | 2200/0447 | . . Fats, fatty oils, higher fatty acids or derivatives thereof                       |
| 21/02          | . Inorganic materials  | 2200/0452 | . . Carbohydrates or derivatives thereof  |
| 21/04          | . . containing phosphorus  | 2200/0458 | . . Nitrogen-containing compounds   |
| 21/06          | . Organic materials  | 2200/0464 | . . . Isocyanates   |
| 21/08          | . . containing halogen   | 2200/047  | . . . Amides, imides, imines, N-oxides  |
| 21/10          | . . containing nitrogen  | 2200/0476 | . . . Heterocyclic nitrogen compounds, e.g. melamine                                  |
| 21/12          | . . containing phosphorus  | 2200/0482 | . . . Peptides, proteins or derivatives thereof                                       |
| 21/14          | . Macromolecular materials   | 2200/0488 | . . Sulfur-containing compounds   |
| <b>2101/00</b> | <b>Agricultural use</b>  | 2200/0494 | . . Silicon-containing compounds  |
| <b>2103/00</b> | <b>Civil engineering use</b>   | 2200/06   | . Macromolecular organic compounds, e.g. prepolymers                                  |
| <b>2105/00</b> | <b>Erosion prevention</b>  | 2200/0602 | . . Polysaccharides or derivatives thereof  |
| <b>2107/00</b> | <b>Impermeabilisation</b>  | 2200/0605 | . . Lignin-containing compounds   |
| <b>2109/00</b> | <b>pH regulation</b>   | 2200/0607 | . . Rubber or rubber derivatives  |
| <b>2200/00</b> | <b>Chemical nature of materials in mouldable or extrudable form for sealing or packing joints or covers</b>  | 2200/061  | . . . Butyl rubber  |
| 2200/02        | . Inorganic compounds  | 2200/0612 | . . . Butadiene-acrylonitrile rubber  |
| 2200/0204      | . . Elements   | 2200/0615 | . . obtained by reactions only involving carbon-to-carbon unsaturated bonds           |
| 2200/0208      | . . . Carbon   | 2200/0617 | . . . Polyalkenes   |
| 2200/0213      | . . . Metals   | 2200/062  | . . . . Polyethylene  |
| 2200/0217      | . . Salts  | 2200/0622 | . . . Polyvinylalcohols, polyvinylacetates  |
| 2200/0221      | . . . Halogen-containing compounds   | 2200/0625 | . . . Polyacrylic esters or derivatives thereof                                       |
| 2200/0226      | . . . Nitrogen-containing compounds  | 2200/0627 | . . . . Nitrogen-containing polymers, e.g. polyacrylamide                             |
| 2200/023       | . . . Sulfur-containing compounds  | 2200/063  | . . . Polyacrylonitriles  |
| 2200/0234      | . . . Phosphorous-containing compounds   | 2200/0632 | . . . Polystyrenes  |
| 2200/0239      | . . Oxides, hydroxides, carbonates   | 2200/0635 | . . . Halogen-containing polymers, e.g. PVC   |
| 2200/0243      | . . Silica-rich compounds, e.g. silicates, cement, glass   | 2200/0637 | . . . . Fluoro-containing polymers, e.g. PTFE   |
| 2200/0247      | . . . Silica   | 2200/064  | . . . Coumarone polymers  |
| 2200/0252      | . . . Clays  | 2200/0642 | . . Copolymers containing at least three different monomers                           |
| 2200/0256      | . . . . Bentonite  | 2200/0645 | . . obtained otherwise than by reactions involving carbon-to-carbon unsaturated bonds |
|                |  | 2200/0647 | . . . Polyepoxides  |
|                |  | 2200/065  | . . . Polyurethanes   |
|                |  | 2200/0652 | . . . Polyisocyanates   |
|                |  | 2200/0655 | . . . Polyesters  |
|                |  | 2200/0657 | . . . Polyethers  |
|                |  | 2200/066  | . . . . Polyester-polyethers  |
|                |  | 2200/0662 | . . . . Polyether-polyol  |
|                |  | 2200/0665 | . . . Polyurea  |
|                |  | 2200/0667 | . . . Polyamides, polyimides  |

- 2200/067 . . . Condensation polymers of aldehydes or ketones
- 2200/0672 . . . Phenol-aldehyde condensation polymers
- 2200/0675 . . . Melamine-formaldehyde condensation polymers
- 2200/0677 . . . Urea-formaldehyde condensation polymers
- 2200/068 . . Containing also other elements than carbon, oxygen or nitrogen in the polymer main chain
- 2200/0682 . . . Containing sulfur
- 2200/0685 . . . Containing silicon
- 2200/0687 . . Natural resins, e.g. rosin
- 2200/069 . . Bituminous materials, e.g. tar, pitch
- 2200/0692 . . Fibres
- 2200/0695 . . . Polyamide fibres
- 2200/0697 . . . Cellulose fibres
  
- 2205/00 Aspects relating to compounds used in compression type refrigeration systems**
- 2205/10 . Components
- 2205/102 . . Alcohols
- 2205/104 . . Carboxylic acid esters
- 2205/106 . . Carbon dioxide
- 2205/108 . . Aldehydes or ketones
- 2205/11 . . Ethers
- 2205/112 . . . Halogenated ethers
- 2205/114 . . . Cyclic ethers
- 2205/116 . . . Halogenated cyclic ethers
- 2205/12 . . Hydrocarbons
- 2205/122 . . . Halogenated hydrocarbons
- 2205/124 . . . Fluorinated cyclic hydrocarbons
- 2205/126 . . . Unsaturated fluorinated hydrocarbons
- 2205/128 . . . Perfluorinated hydrocarbons ([C09K 2205/124](#), [C09K 2205/126](#) take precedence)
- 2205/13 . . Inert gases
- 2205/132 . . containing nitrogen
- 2205/134 . . containing sulfur
- 2205/22 . All components of a mixture being fluoro compounds
- 2205/24 . Only one single fluoro component present
- 2205/32 . The mixture being azeotropic
- 2205/34 . The mixture being non-azeotropic
- 2205/40 . Replacement mixtures
- 2205/41 . . Type R11
- 2205/42 . . Type R12
- 2205/43 . . Type R22
- 2205/44 . . Type R13B1
- 2205/45 . . Type R500
- 2205/46 . . Type R501
- 2205/47 . . Type R502
- 2205/48 . . Type R503
  
- 2208/00 Aspects relating to compositions of drilling or well treatment fluids**
- 2208/02 . Spotting, i.e. using additives for releasing a stuck drill
- 2208/04 . Hulls, shells or bark containing well drilling or treatment fluids
- 2208/06 . Structured surfactants, i.e. well drilling or treating fluids with a lamellar or spherulitic phase
- 2208/08 . Fiber-containing well treatment fluids
- 2208/10 . Nanoparticle-containing well treatment fluids
- 2208/12 . Swell inhibition, i.e. using additives to drilling or well treatment fluids for inhibiting clay or shale swelling or disintegrating
  
- 2208/14 . Double emulsions, i.e. oil-in-water-in-oil emulsions or water-in-oil-in-water emulsions
- 2208/18 . Bridging agents, i.e. particles for temporarily filling the pores of a formation; Graded salts
- 2208/20 . Hydrogen sulfide elimination
- 2208/22 . Hydrates inhibition by using well treatment fluids containing inhibitors of hydrate formers
- 2208/24 . Bacteria or enzyme containing gel breakers
- 2208/26 . Gel breakers other than bacteria or enzymes
- 2208/28 . Friction or drag reducing additives
- 2208/30 . Viscoelastic surfactants [VES]
- 2208/32 . Anticorrosion additives
- 2208/34 . Lubricant additives
  
- 2211/00 Chemical nature of organic luminescent or tenebrescent compounds**
- 2211/10 . Non-macromolecular compounds
- 2211/1003 . . Carbocyclic compounds
- 2211/1007 . . . Non-condensed systems
- 2211/1011 . . . Condensed systems
- 2211/1014 . . . bridged by heteroatoms, e.g. N, P, Si or B
- 2211/1018 . . Heterocyclic compounds
- 2211/1022 . . . bridged by heteroatoms, e.g. N, P, Si or B
- 2211/1025 . . . characterised by ligands
- 2211/1029 . . . . containing one nitrogen atom as the heteroatom
- 2211/1033 . . . . . with oxygen
- 2211/1037 . . . . . with sulfur
- 2211/104 . . . . . with other heteroatoms
- 2211/1044 . . . . containing two nitrogen atoms as heteroatoms
- 2211/1048 . . . . . with oxygen
- 2211/1051 . . . . . with sulfur
- 2211/1055 . . . . . with other heteroatoms
- 2211/1059 . . . . containing three nitrogen atoms as heteroatoms
- 2211/1062 . . . . . with oxygen
- 2211/1066 . . . . . with sulfur
- 2211/107 . . . . . with other heteroatoms
- 2211/1074 . . . . containing more than three nitrogen atoms as heteroatoms
- 2211/1077 . . . . . with oxygen
- 2211/1081 . . . . . with sulfur
- 2211/1085 . . . . . with other heteroatoms
- 2211/1088 . . . . containing oxygen as the only heteroatom
- 2211/1092 . . . . containing sulfur as the only heteroatom
- 2211/1096 . . . . containing other heteroatoms
- 2211/14 . Macromolecular compounds
- 2211/1408 . . Carbocyclic compounds
- 2211/1416 . . . Condensed systems
- 2211/1425 . . . Non-condensed systems
- 2211/1433 . . . bridged by heteroatoms, e.g. N, P, Si or B
- 2211/1441 . . Heterocyclic
- 2211/145 . . . containing oxygen as the only heteroatom
- 2211/1458 . . . containing sulfur as the only heteroatom
- 2211/1466 . . . containing nitrogen as the only heteroatom
- 2211/1475 . . . containing nitrogen and oxygen as heteroatoms
- 2211/1483 . . . containing nitrogen and sulfur as heteroatoms
- 2211/1491 . . . containing other combinations of heteroatoms
- 2211/18 . Metal complexes
- 2211/181 . . of the alkali metals and alkaline earth metals
- 2211/182 . . of the rare earth metals, i.e. Sc, Y or lanthanide

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- 2211/183 . . of the refractory metals, i.e. Ti, V, Cr, Zr, Nb, Mo, Hf, Ta or W
- 2211/185 . . of the platinum group, i.e. Os, Ir, Pt, Ru, Rh or Pd
- 2211/186 . . of the light metals other than alkali metals and alkaline earth metals, i.e. Be, Al or Mg
- 2211/187 . . of the iron group metals, i.e. Fe, Co or Ni
- 2211/188 . . of other metals not provided for in one of the previous groups

### **2219/00 Aspects relating to the form of the liquid crystal [LC] material, or by the technical area in which LC material are used**

- 2219/01 . in the form of fibres, e.g. fibres after polymerisation of LC precursor
- 2219/03 . in the form of films, e.g. films after polymerisation of LC precursor
- 2219/11 . used in the High Frequency technical field
- 2219/13 . used in the technical field of thermotropic switches
- 2219/15 . used as a medium, in which chemical reactions take place
- 2219/17 . used as a medium, in which detection of chemical compounds takes place

### **2323/00 Functional layers of liquid crystal optical display excluding electroactive liquid crystal layer characterised by chemical composition**

- 2323/02 . Alignment layer characterised by chemical composition
- 2323/021 . . Inorganic, e.g. glass or silicon oxide
- 2323/023 . . Organic silicon compound, e.g. organosilicon
- 2323/025 . . Polyamide
- 2323/027 . . Polyimide
- 2323/0271 . . . Polyimidfluoride
- 2323/0273 . . . Polyimidmetalo
- 2323/03 . Viewing layer characterised by chemical composition
- 2323/031 . . Polarizer or dye
- 2323/033 . . Silicon compound, e.g. glass or organosilicon
- 2323/035 . . Ester polymer, e.g. polycarbonate, polyacrylate or polyester
- 2323/04 . Charge transferring layer characterised by chemical composition, i.e. conductive
- 2323/05 . Bonding or intermediate layer characterised by chemical composition, e.g. sealant or spacer
- 2323/051 . . Inorganic, e.g. glass or silicon oxide
- 2323/053 . . Organic silicon compound, e.g. organosilicon
- 2323/055 . . Epoxy
- 2323/057 . . Ester polymer, e.g. polycarbonate, polyacrylate or polyester
- 2323/059 . . Unsaturated aliphatic polymer, e.g. vinyl
- 2323/06 . Substrate layer characterised by chemical composition
- 2323/061 . . Inorganic, e.g. ceramic, metallic or glass