C08J

WORKING-UP; GENERAL PROCESSES OF COMPOUNDING; AFTER-TREATMENT NOT COVERED BY SUBCLASSES C08B, C08C, C08F, C08G (mechanical aspects B29; layered products, manufacture thereof B32B; treatment of macromolecular material specially adapted to enhance its filling properties in mortars, concrete or artificial stone C04B16/04, C04B18/20, C04B20/00 ; treatment of texiles D06)

Definition statement

This subclass/group covers:

- Processes of treating or compounding macromolecular substances as covered by C08J 3/00,
- Manufacture of articles or shaped materials containing macromolecular substances as covered by C08J 5/00,
- Chemical treatment or coating of shaped articles made of macromolecular substances as covered by C08J 7/00,
- Working-up of macromolecular substances to porous or cellular articles or materials or after-treatment thereof as covered by C08J 9/00,
- Recovery or working-up of waste materials as covered by C08J 11/00.

References relevant to classification in this subclass

This subclass/group does not cover:

Mechanical aspects of working-up	B29C
Working-up of compositions comprising more than 50% of mineral filler	C04B
Adhesive processes in general	C09J 5/00

Informative references

Attention is drawn to the following places, which may be of interest for search:

Layered products, manufacture thereof	B32B

Special rules of classification within this subclass

- In this subclass, the polymer involved in the working-up is specified using Indexing Codes of the group C08J 2300/00-C08J 2399/00.
- When the presence of one or several additional polymers, present in minority, is of relevance, this additional polymer is specified using Indexing Codes of the group C08J 2400/00-C08J 2499/00.

C08J 3/00

Process of treating or compounding macromolecular substances

Definition statement

This subclass/group covers:

The chemical aspect of making solutions, dispersions or lattices, powdering or granulating, plasticizing, compounding with additives, cross linking, vulcanising and treatment by wave energy or particle radiation

Relationship between large subject matter areas

Multiple classification

The way of preparing solutions, emulsions, classified in C08J 3/02, can be part of the preparation and characterisation of paints and should also be classified in C09D 7/00.

The use of a specific emulsifying agent classified in B01F 17/00 could apply to the emulsification of polymers and be also classified in C08J 3/02.

References relevant to classification in this group

This subclass/group does not cover:

Cosmetic or similar preparations: characterized by their physical form	A61K 8/00
Mechanical aspects of mixing, emulsifying and dispersing	B01F
Catalyst carrier	B01J 32/00
Protection of catalyst (coating)	B01J 33/00
Making granules	B29B 9/00

Mechanical aspects of cross linking	B29C 35/00
Chemical modification of rubber	C08C
Making solution dispersion or lattices by solution, emulsion or suspension polymerisation	C08F 2/00
Post polymerisation treatment of polymer emulsions or solutions	C08F 6/00
Cross linking aspects not classifiable in these groups	C08G, C08F, C08K
Treatment by wave energy or irradiation of shaped articles	C08J 7/12
Plasticising macromolecules characterized by the plasticizer	C08K 5/00, C08K 3/00
Encapsulation of additives	C08K 9/00

Examples of places where the subject matter of this group is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

Medicinal preparations characterized by the non-active ingredient, e.g. characterization by their physical form	A61K 47/48
Treatment of inorganic materials other than fibrous filler in order to enhance their filling or pigmenting properties	C09C
Pigment paste	C09D 17/00
Preparation method of toner particles	G03G 9/08

Informative references

Attention is drawn to the following places, which may be of interest for search:

Chemical aspects of absorbent pads	A61L 15/16

Special rules of classification within this group

C08J 3/122 takes precedence over C08J 3/124, C08J 3/14 and C08J 3/16.

This class could also be associated with C08J 3/02, as it is relevant for the process for making solution or emulsion.

In C08J 3/22, the additive added as master batch could also be a polymer.

This class could also be associated to C08J 3/20, i.e. compounding polymer with additive.

C08J 5/00

Manufacture of articles or shaped materials containing macromolecular substances (shaping of foodstuffs A23P; manufacture of semi-permeable membranes B01D67/00 to B01D71/00; mechanical features, see the relevant classes, e.g. B29)

Definition statement

This subclass/group covers:

- Direct processing of dispersions, e.g. latex, to articles.

- Reinforcing macromolecular compounds with fibrous and/or nanosized materials.

- Bonding of a preformed macromolecular material to the same or other solid material.

-Manufacturing of films and sheets.

-Manufacture of shaped structures of ion- exchange resin, e.g. membranes.

-Impregnating materials with prepolymers, e.g. manufacturing of prepregs.

Relationship between large subject matter areas

Multiple classification:

The chemical aspect of making polymer composites with loose or coherent fibrous material classified in C08J 5/04 could be associated with

B29C 70/00: mechanical aspect of making such composites in a specific process for making composites;

C08K 7/00 or C08K 9/00: compounded polymer compositions characterized

by the fibrous material.

C08J 5/04 refers to the process of reinforcing a polymer matrix, while C08K 7/00 and C08K 9/00 to a compounded composition characterized by the fibrous material.

References relevant to classification in this group

This subclass/group does not cover:

Shaping of foodstuffs	A23P
Membranes for dialysis, osmosis or filtration, e.g. semi-permeable membranes	B01D 67/00, B01D 69/00, B01D 71/00
Ion-exchange in general	B01J 39/18 - B01J 39/22, B01J 47/12
Anion-exchange in general	B01J 41/12 - B01J 41/16
Amphoteric ion-exchange	B01J 43/00
Regeneration of ion-exchangers	B01J 49/00
Micro structural technology	B81
Treatment of rubber latex	C08C 1/00
Treatment of polymer emulsions	C08F 6/14
Nanosized additives; Use of ingredients characterised by shape	C08K 7/00
Surface modified additives	C08K 9/00
Other nonwoven fabrics	D04H 13/00
Finishing of textiles	D06M

Examples of places where the subject matter of this group is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

Medicinal preparations characterized by the non-active ingredient: characterization by their physical form	A61K 47/48

Treatment of inorganic materials other than fibrous filler in order to enhance their filling or pigmenting properties	C09C
Pigment paste	C09D 17/00
Adhesive processes	C09J 5/00
Fuel cells with polymeric electrolyte material	H01M 8/1018

Informative references

Attention is drawn to the following places, which may be of interest for search:

Multilayer films	B32B 27/00
After treatment of threads during manufacturing	D01F
Fuel cells with polymeric electrolyte material	H01M 8/1018

Special rules of classification within this group

IPC groups C08J 5/14 (Manufacture of abrasive or friction articles or materials) and C08J 5/16 (Manufacture of articles or materials having reduced friction) are not used and have been transferred to respectively C09K 3/14 and C10M.

C08J 5/005

[N: Reinforced macromolecular compounds with nanosized materials, e.g. nanoparticles, nanofibres, nanotubes, nanowires, nanorods or nanolayered materials (use of ingredients characterised by shape C08K7/00; nanotechnology for materials and surface science B82Y30/00)]

Definition statement:

This subclass/group covers:

The reinforcement of polymers with nanofillers as structuring agent

References relevant to classification in this group

This subclass/group does not cover:

Use of ingredients characterised by shape	C08K 7/00
Nanotechnology for materials and surface science	B82Y 30/00

Special rules of classification within this group

For polymers comprising nanoadditives without reinforcing structure, documents are classified in C08K.

C08J 5/02

Direct processing of dispersions, e.g. latex, to articles

Definition statement

This subclass/group covers:

The direct processing of latex, e.g. for hand gloves.

Relationship between large subject matter areas

The treatment of latexes in general is to be classified in C08F 6/14, for rubber latex it should be classified in C08C 1/00.

C08J 5/04

Reinforcing macromolecular compounds with loose or coherent fibrous material (after-treatment of threads during manufacture D01F; [N: finishing of textiles D06M])

Definition statement:

This subclass/group covers:

The reinforcement of macromolecular compounds (thermoplastic) with loose or coherent fibrous material (no continuous fibres)

Relationship between large subject matter areas

The difference between C08J 5/04 and C08K 7/00 is made on the basis of

explicit disclosure of composite which should be distinguished from reinforced plastics. A document will be classified in C08K 7/00 when it concerns only reinforcement of plastics like polyamide with glass fibres.

References relevant to classification in this group

This subclass/group does not cover:

After-treatment of threads during manufacture	D01F
Finishing of textiles	D06M

C08J 5/18

Manufacture of films or sheets

Definition statement:

This subclass/group covers:

The manufacture of self standing films or sheets:

References relevant to classification in this group

This subclass/group does not cover:

Films which are only coated layers	C09D
Coating of shaped articles made of polymers with polymeric layers	C08J 7/04
Process for making films only characterized by the use of specific apparatus, e.g. extruding, blow moulding or thermoforming	B29C, B29C

Informative references

Attention is drawn to the following places, which may be of interest for search:

Producing flat articles, e.g. films or sheets	B29D 7/01
Wrappers or flexible covers; Packaging materials of special type or	B65D 65/00 - B65D 65/466

form, e.g. wrappers or envelopes with shock-absorbing properties	
Shaping by stretching, e.g. drawing through a die, characterized by the choice of materials	B29C 55/005
Layered products essentially comprising synthetic resin	B32B 27/00 - B32B 27/42

Special rules of classification within this subgroup

- The type of polymer used to make the film is indicated using Indexing Codes of the group group C08J 2300/00-C08J 2399/00.
- When the presence of one or several additional polymers, present in minority, is of relevance, this additional polymer is specified using Indexing Codes of the group C08J 2400/00-C08J 2499/00.

Example: Polypropylene films are classified in C08J 5/18 and C08J 2323/12.

C08J 5/20

Manufacture of shaped of ion-exchange resins

Definition statement

This subclass/group covers:

The product of manufacture of ion-exchange membranes based on inorganic and/or organic macromolecules; usually processes of making polyelectrolytes are classified here.

Informative references

Attention is drawn to the following places, which may be of interest for search:

Use of macromolecular compounds as cation exchangers	B01J 39/20
Use of macromolecular compounds as anion exchangers	B01J 41/14

Special rules of classification within this subgroup

Please see the Rules under C08J 5/18.

C08J 5/22

Films, membranes, or diaphragms [N: (ion-exchange in general, B01J39/18-B01J39/22, B01J41/12-B01J41/16, B01J43/00, B01J45/00, B01J47/12 to B01J49/00; fuel cells with polymeric electrolyte material H01M8/1018)]

Definition statement

This subclass/group covers:

Membranes of which at least the ion exchanging parts are inorganic, i.e. mixtures of non-polymeric ion-exchange compounds, e.g. inorganic salts and at least one polymer.

Membranes based on cellulose, covered by C08J 5/2212.

Methods for incorporating reinforcement supports or filling bodies are classified, where the support of filling body has no ion-exchange activity covered by C08J 5/2206.

Ion-exchanging fibrous fabrics are considered as heterogeneous membranes covered by C08J 5/2275; they include composite membranes, mixtures of two or more (ion exchange) polymers.

Reactions which change the nature of the ion-exchanging groups, introduction of ion-exchanging groups, after-treatment with membrane having been already been formed, covered by C08J 5/2287.

References relevant to classification in this group

This subclass/group does not cover:

Ion-exchange in general	B01J 39/18-B01J 39/22, B01J 41/12-B01J 41/16, B01J 43/00, B01J 45/00, B01J 47/12-B01J 49/00
Processes of separation using semi-permeable membranes, e.g. reverse osmosis, microfiltration or ultrafiltration	B01D 61/00-B01D 61/58
Semi-permeable membranes of macromolecular compounds	B01D 71/08-B01D 7/82
Electrolyte membranes which are characterized only by the construction, e.g. porosity or presence of specific electrolytes, the	H01M 8/00

polymer being not specific	
Fuel cells with polymeric electrolyte material	H01M 8/1018

Informative references

Attention is drawn to the following places, which may be of interest for search:

Fuel cells with solid polymeric electrolyte materials	H01M 8/1018

Special rules of classification within this group

Groups. e.g. -G02F, which do not have ion-exchanging properties, but which may, by simple hydrolysis in an alkaline, neutral or acid medium, be transformed into ion-exchanging groups, e.g. -G02H, are considered as such.

Membranes obtained by homogeneous melting or from a solution are considered as homogeneous, even if the membrane contains (after solidification of the melt or the solution) heterogeneous elements, e.g. filling bodies, supports for example in the form of fabrics, or the like, i.e. the ion exchange resin forms the membrane.

Quaternising reactions are not considered as after-treatments.

Please see also the Rules under C08J 5/18.

C08J 5/2206

[N: based on macromolecular compounds]

Definition statement

This subclass/group covers:

Ion-exchange membranes based on organic and/or inorganic polymers.

Methods for incorporating reinforcement supports or filling bodies, the support or filling body having no ion exchange activity.

Informative references

Attention is drawn to the following places, which may be of interest for search:

Fuel cells with solid polymeric electrolyte materials	H01M 8/1018

Special rules of classification within this subgroup

Please see the Rules under C08J 5/18.

C08J 5/2212

[N: Natural macromolecular compounds]

Definition statement

This subclass/group covers:
Ion-exchange membranes based on natural polymers, e.g. celullose.

Special rules of classification within this subgroup

Please see the Rules under C08J 5/18.

C08J 5/2218

[N: Synthetic macromolecular compounds]

Definition statement

This subclass/group covers:
Ion-exchange membranes based on synthetic organic polymers.

Special rules of classification within this subgroup

Please see the Rules under C08J 5/18.

C08J 5/2225

[N: containing fluorine]

Definition statement

This subclass/group covers:
Ion-exchange membranes based on synthetic organic polymers containing fluorine.

Special rules of classification within this subgroup

Please see the Rules under C08J 5/18.

C08J 5/2231

[N: based on macromolecular compounds obtained by reactions involving unsaturated carbon-to-carbon bonds]

Definition statement

This subclass/group covers:

Ion-exchange membranes based on synthetic polymers obtained by addition polymerization (C08F) reactions.

C08J 5/2237

[N: containing fluorine]

Definition statement

This subclass/group covers:

Ion-exchange membranes based on synthetic polymers obtained by addition polymerization (C08F) reactions and containing fluorine.

Special rules of classification within this subgroup

Please see the Rules under C08J 5/18.

C08J 5/2243

[N: obtained by introduction of active groups capable of ion-exchange into compounds of the type C08J5/2231]

Definition statement

This subclass/group covers:

Ion-exchange membranes obtained by introduction of active groups of ion-exchange groups into compounds of the type C08J 5/2231.

Special rules of classification within this subgroup

Please see the Rules under C08J 5/18.

Groups, e.g. SO2F, which do not have ion-exchanging properties, but which may, by simple hydrolysis in an alkaline, neutral or acid medium, be transformed into ion-exchanging groups, e.g. SO2H, are considered as such.

C08J 5/225

[N: containing fluorine]

Definition statement

This subclass/group covers:

Ion-exchange membranes obtained by introduction of active groups of ion-exchange groups into compounds of the type C08J 5/2231 containing fluorine.

Special rules of classification within this subgroup

Please see the Rules under C08J 5/18.

C08J 5/2256

[N: based on macromolecular compounds obtained by reactions other than those involving carbon-to-carbon bonds, e.g. obtained by polycondensation]

Definition statement

This subclass/group covers:

Ion-exchange membranes based on polymers obtained by step polymerization (C08G) reactions (condensation or polyaddition polymerization).

Special rules of classification within this subgroup

Please see the Rules under C08J 5/18.

C08J 5/2262

[N: Ion-exchange membranes based on macromolecular compounds obtained by reactions other than those involving carbon-to-carbon bonds, e.g. obtained by polycondensation, and containing fluorine]

Definition statement

This subclass/group covers:

Ion-exchange membranes based on polymers obtained by step polymerization (C08G) reactions (condensation or polyaddition polymerisation) and containing fluorine.

Special rules of classification within this subgroup

Please see the Rules under C08J 5/18.

C08J 5/2268

[N: based on macromolecular compounds obtained by reactions involving both unsaturated carbon-to-carbon bonds, and by reactions not involving this type of bond, e.g. obtained by polycondensation]

Definition statement

This subclass/group covers:

Ion-exchange membranes obtained by step polymerization (C08G) and addition polymerization (C08F) reactions (both types of reaction are present)

Informative references

Attention is drawn to the following places, which may be of interest for search:

Please see the Rules under C08J 5/18.

C08J 5/2275

[N: Heterogeneous membranes]

Definition statement

This subclass/group covers:

- Heterogeneous or composite ion-exchange membranes.

- Ion-exchanging fibrous fabrics, which are considered as heterogeneous membranes; they include composite membranes, mixtures of two or more (ion exchange) polymers.

- Membranes obtained by homogeneous melting or from a solution, which are considered as homogeneous, even if the membrane contains (after solidification of the melt or the solution) heterogeneous elements, e.g. filling bodies, supports e.g. in the form of fabrics, or the like, i.e. the ion exchange resin forms the membrane.

Informative references

Attention is drawn to the following places, which may be of interest for search:

Composite membranes; Ultra-thin membranes	B01D 69/12-B01D 69/148

Special rules of classification within this subgroup

Please see the Rules under C08J 5/18.

C08J 5/2281

[N: fluorine containing heterogeneous membranes]

Definition statement

This subclass/group covers:

Heterogeneous or composite ion-exchange membranes containing fluorine

Informative references

Attention is drawn to the following places, which may be of interest for search:

Composite membranes; Ultra-thin membranes	B01D 69/12-B01D 69/148

Special rules of classification within this subgroup

Please see the Rules under C08J 5/18.

C08J 5/2287

[N: After-treatment]

Definition statement

This subclass/group covers:

- After-treatment of already formed ion-exchange membranes.

- Reactions which change the nature of the ion-exchanging groups, introduction of ion-exchanging groups

- After-treatment, the membrane having been already formed

Informative references

Attention is drawn to the following places, which may be of interest for search:

Processes specially adapted for manufacturing semi-permeable membranes for separation processes or apparatus	B01D 67/0002, K18F 2/00

Special rules of classification within this subgroup

Please see the Rules under C08J 5/18.

Quaternising reactions are not considered as after-treatments.

C08J 5/2293

[N: After-treatment of fluorine-containing membranes]

Definition statement

This subclass/group covers:

After-treatment of already formed fluorine containing ion-exchange membranes.

Informative references

Attention is drawn to the following places, which may be of interest for search:

Processes specially adapted for manufacturing semi-permeable membranes for separation processes or apparatus	B01D 67/0002, K18F 2/00

Special rules of classification within this subgroup

Please see the Rules under C08J 5/18.

Reactions which change the nature of the ion-exchanging groups, introduction of ion-exchanging groups, after-treatment (where the membrane has already been formed) are classified in C08J 5/2287 or in C08J 5/22D1.

Quaternising reactions are not considered as after-treatments.

C08J 5/24

Impregnating materials with prepolymers which can be polymerised in situ, e.g. manufacture of prepregs

Definition statement

This subclass/group covers:

Prepregs, i.e. reinforcement material preimpregnated with a resin matrix.

Informative references

Attention is drawn to the following places, which may be of interest for search:

Layered products characterised by the presence of two or more layers, wherein one layer is a fibrous or filamentary layer impregnated with or embedded in a plastic subtance	B32B 5/28

Special rules of classification within this subgroup

Please see the Rules under C08J 5/18.

The following Indexing Codes can be used:

D10B 2505/02: Reinforcing materials; Prepregs

D10B 2505/022: for tyres

C08J 7/00

Chemical treatment or coating of shaped articles made of macromolecular substances

Definition statement

This subclass/group covers:

Chemical treatment or coating of polymeric substrates. The characteristic feature of this group, -as opposed to C09D- is the nature of the substrate, which has to be always polymeric.

Relationship between large subject matter areas

C08J 7/00 relates to processes of treating or coating polymeric substrates only.

C09D relates to coating compositions.

B05D relates to processes for applying liquids or other fluent materials to surfaces in general.

References relevant to classification in this group

This subclass/group does not cover:

Coating with metallic material	C23C
Electrolytic deposition of metals	C25
Treating textile materials	D06

Informative references

Attention is drawn to the following places, which may be of interest for search:

Coating compositions	C09D
Processes for applying liquids or other fluent materials to surfaces in general	B05D

Special rules of classification within this group

- The treatment of specific polymers is indicated using Indexing Codes of the group group C08J 2300/00-C08J 2399/00.
- When the presence of one or several additional polymers, present in minority, is of relevance, this additional polymer is specified using Indexing Codes of the group C08J 2400/00-C08J 2499/00.

Example - Surface treatment of a polypropylene film is classified in C08J 7/00 and C08J 2323/12.

C08J 7/02

with solvents, e.g. swelling agents

Definition statement

This subclass/group covers:

Treatment of polymeric substrates with solvents or swelling agents.

Informative references

Attention is drawn to the following places, which may be of interest for search:

Recovery or working-up of waste materials using selective solvents for polymer components.	C08J 11/08
After-treatment of articles without altering their shape; using liquids, e.g. solvents, swelling agents.	B2971/00C

Special rules of classification within this group

Please see the Rules under C08J 7/00.

C08J 7/04

Coating

Definition statement

This subclass/group covers:
Coating of polymeric substrates in general.

Relationship between large subject matter areas

Please see the Rules under C08J 7/00.

References relevant to classification in this group

This subclass/group does not cover:
Please the References under under C08J 7/00.

Informative references

Attention is drawn to the following places, which may be of interest for search:

Coating compositions per se	C09D 101/00-C09D 210/00
Coating compositions based on organic non-macromolecular compounds having at least one polymerisable carbon-to-carbon unsaturated bond	C09D 4/00

Special rules of classification within this group

Please see the Rules under C08J 7/00.

C08J 7/042

[N: with two or more layers, where at least one layer of a composition contains a polymer binder]

Definition statement

This subclass/group covers:

Multiple coatings on a polymeric substrate, where at least one layer of a composition contains a polymer binder.

Relationship between large subject matter areas

Please see the Relationship under under C08J 7/00.

References relevant to classification in this group

This subclass/group does not cover:

Layered products essentially comprising synthetic resin	B32B 27/00

Special rules of classification within this group

- The treatment of specific polymers is indicated using Indexing Codes of the group group C08J 2300/00-C08J 2399/00.
- When the presence of one or several additional polymers, present in minority, is of relevance, this additional polymer is specified using Indexing Codes of the group C08J 2400/00-C08J 2499/00.

Example - Coating of a polypropylene film with a polyurethane layer and a polyepoxy layer is classified in C08J 7/00 and C08J 2323/12 and C08J 2475/04 and M08463/00.

C08J 7/045

[N: with at least one layer of inorganic material and at least one layer of a composition containing a polymer binder]

Definition statement

This subclass/group covers:

Multiple coatings on a polymeric substrate with at least one layer of inorganic material and at least one layer of a composition containing a polymer binder.

Relationship between large subject matter areas

Please the Relationship under under C08J 7/00.

References relevant to classification in this group

This subclass/group does not cover:

See corresponding note under C08J 7/00.

Informative references

Attention is drawn to the following places, which may be of interest for search:

Please the References under under C08J 7/00.

Special rules of classification within this group

Please see the Rules under C08J 7/00.

C08J 7/047

with only one layer of a composition containing a polymer binder

Definition statement

This subclass/group covers:

Coating a polymeric substrate with a single layer containing an unspecified polymer binder.

References relevant to classification in this group

This subclass/group does not cover:

Multiple coatings on a polymeric substrate	C09D 7/04D

Informative references

Attention is drawn to the following places, which may be of interest for search:

Coating compositions based on unspecified macromolecular compounds	C09D 201/00 - C09D 201/10

Special rules of classification within this group

- The coating of a specific polymeric substrate with a layer of an unspecified polymer binder is using Indexing Codes of the group group C08J 2300/00-C08J 2399/00.
- When the presence of one or several additional polymers, present in

minority, is of relevance, this additional polymer is specified using Indexing Codes of the group C08J 2400/00-C08J 2499/00.

Example -1: Coating of a polycarbonate substrate with a protective polymeric layer is classified in C08J 7/047 and C08J 2369/00;

When both the substrate and the coating are unspecified the classification C08J 7/047 alone is used.

Example -2: Coating a polycarbonate substrate with a polyurethane layer is classified in C08J 7/047 and C08J 2369/00 and C08J 2475/04

C08J 7/06

with compositions not containing macromolecular substances

Definition statement

This subclass/group covers:

Coating, impregnating, adsorbing or absorbing a polymeric substrate with low-molecular weight compounds; mainly inorganic compounds. No metallization!

References relevant to classification in this group

This subclass/group does not cover:

Coating with metallic material	C23C

Informative references

Attention is drawn to the following places, which may be of interest for search:

Coating compositions based on inorganic substances.	C09D 1/00-C09D 1/12

Special rules of classification within this group

Please see the Rules under C08J 7/00.

C08J 7/065

low-molecular weight organic substances

Definition statement

This subclass/group covers:

Coating, impregnating, adsorbing or absorbing of a polymeric substrate with low-molecular weight organic substances e.g. absorption of dyes in the surface of the article;

Treatment of a polymer substrate with antimicrobial agent.

Informative references

Attention is drawn to the following places, which may be of interest for search:

Features of coating compositions; non-macromolecular additives	C09D 7/1233

Special rules of classification within this group

Please see the Rules under C08J 7/00.

C08J 7/08

Heat treatment

Definition statement

This subclass/group covers:

Thermal treatment of polymer substrates with heat, e.g. flame.

Informative references

Attention is drawn to the following places, which may be of interest for search:

Surface shaping by flame treatment e.g. hot gases	B29C 59/08 , B29C 59/085

Special rules of classification within this group

Please see the Rules under C08J 7/00.

C08J 7/12

Chemical modification

Definition statement

This subclass/group covers:

Chemical modification of a polymeric surface.

Informative references

Attention is drawn to the following places, which may be of interest for search:

Chemical modification by after-treatment	C08F 8/00-C08F 8/50, C08G 2/30, C08G 59/14, C08G 63/46, C08G 63/91, C08G 64/42, C08G 65/32, C08G 65/48, C08G 69/48, C08G 75/0286, C08G 77/38, C08G 85/004
Chemical modification of membranes	B01D 67/0093

Special rules of classification within this group

Please see the Rules under C08J 7/00.

Glossary of terms

In this subclass/group, the following terms (or expressions) are used with the meaning indicated:

Chemical etching	Chemical modification of a polymeric surface

C08J 7/123

[N: Treatment by wave energy or particle radiation]

Definition statement

This subclass/group covers:

Treatment of polymeric substrates with electromagnetic radiation, e.g. corona, plasma, X-rays or #-rays.

Relationship between large subject matter areas

C08J 7/123 vs C08J 3/28

C08J 7/123 refers to the treatment of a polymeric surface with electromagnetic radiation, while C08J 3/28 refers to the treatment of the bulk

of a polymer with electromagnetic radiation.

Informative references

Attention is drawn to the following places, which may be of interest for search:

Pretreatment of polymeric substrates with plasma	B05D 3/144
Surface shaping of articles by plasma treatment	B29C 59/14
Surface shaping of articles by wave energy or particle radiation	B29C 59/16, B29C 59/165
Treatment (the bulk) of a macromolecular compound by wave energy or radiation	C08J 3/28

Special rules of classification within this group

Please see the Rules under C08J 7/00.

Synonyms and Keywords

In patent documents the following expressions are often used as synonyms.

Particle radiation treatment	Plasma treatment Electron beam treatmentElectronic irradiation
Wave energy treatment	Corona discharge Glow discharge Ultraviolet treatmentUV treatment

C08J 7/126

[N: Halogenation]

Definition statement

This subclass/group covers:

Halogenation (e.g. chlorination or fluorination) of polymeric surfaces.

Informative references

Attention is drawn to the following places, which may be of interest for search:

Chemical modification by after-treatment halogenation	C08F 8/20

Special rules of classification within this group

See corresponding note under C08J 7/00.

Synonyms and Keywords

Chlorination	Chloration
Fluorination	Fluoration

C08J 7/14

with acids, their salts or anhydrides

Definition statement

This subclass/group covers:

Chemical modification of a polymeric surface with acids, their salts or anhydrides to apply functional groups onto the surface of the treated article.

Informative references

Attention is drawn to the following places, which may be of interest for search:

Please the References under under C08J 7/00.

Special rules of classification within this group

Please see the Rules under C08J 7/00.

C08J 7/16

with polymerisable compounds

Definition statement

This subclass/group covers:

Polymerization of monomer(s) on top of a polymeric surface.

Informative references

Attention is drawn to the following places, which may be of interest for search:

Coating compositions, e.g. paints, varnishes or lacquers, based on organic non-macromolecular compounds having at least one polymerisable carbon-to-carbon unsaturated bond	C09D 4/00-C09D 4/06

Special rules of classification within this group

Please see the Rules under C08J 7/00.

C08J 7/18

using wave energy or particle radiation

Definition statement

This subclass/group covers:

Polymerization of monomer(s) on top of a polymeric surface using wave energy or particle radiation.

Informative references

Attention is drawn to the following places, which may be of interest for search:

Plasma-deposition of organic layers	B05D 7/24E

Special rules of classification within this group

Please see the Rules under C08J 7/00.

Synonyms and Keywords

Please see the Synonyms or Keywords under C08J 7/02A.

C08J 9/00

Working-up of macromolecular substances to porous or cellular articles or materials; After-treatment thereof.

Definition statement

This subclass/group covers:

- The organic, inorganic or polymeric additives used during the preparation of a polymeric foam (C08J 9/00), - The blowing or foaming agents involved (C08J 9/02 - C08J 9/149),

- The foaming processes (C08J 9/16 - C08J 9/35),

- The post-treatment of the foam (C08J 9/36 - C08J 9/42).

Relationship between large subject matter areas

- Documents essentially dealing with the mechanical aspects of the foaming process are classified in group B29C 44/00.

- Documents essentially dealing with medical applications are classified in A61L

References relevant to classification in this group

This subclass/group does not cover:

Sponges for cleaning purposes	A47L 13/16
Medical applications	A61L
Manufacture of microcapsules or microballoons	B01J 13/02
Mechanical aspects of foaming	B29C 44/00
Foams containing more than 50% inorganic filler	C04B
Synthesis and blends of organic blowing agents	C07C
Polyurethane foams only characterized by the reactants, e.g. polyol or isocyanate	C08G 18/00
Use of a filler in a non foamed polymer composition	C08K
Polymer blends per se	C08L
Propellants for aerosols	C09K 3/30

Examples of places where the subject matter of this group is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

Use of foams for bandages, dressings or absorbent pads	A61L 15/00
Materials for prostheses	A61L 27/00
Membranes	B01D 67/00 - B01D 71/00
Porous films	C08J 5/18

Special rules of classification within this group

In the absence of an indication to the contrary, classification is made in the last appropriate place. Example: Halogenated phosphoric compound as additive is classified in C08J 9/0038

Documents belonging to several subgroups are also classified in the "one dot less" subgroup. Example: The combination of brominated flame retardant and phosphoric compound is classified in C08J 9/0019, C08J 9/0038 and C08J 9/0014.

The use of water as sole blowing agent for (poly)isocyanate-containing foams is regarded as trivial. It is not classified in C08J.

Foams are subdivided according to the involved polymer(s) using the C08L IPC scheme:

When a foam is a.o. characterized by the involved polymer(s),

then Indexing Codes of the C08J 2300/00-C08J 2399/00 are given, in order to specify said polymer(s).

The structure of the C08J 2300/00 classification is mainly based on the classification of C08L.

Exemple: C08J 2325/06 corresponds to C08L 25/06 (polystyrene) Additionally, C08J 2300/00 to M08J 330/00 specify polymers which are broadly defined.

When a document deals with one single polymer or several alternative polymers, but no polymer blend, then an Indexing Code of the C08J 2300/00 range is used.

Examples: The use of an alkane blowing agent for expanding polystyrene is

classified in C08J 9/141 and C08J 2325/06.

The use of alkane blowing agent for expanding polystyrene or polyethylene is classified in C08J 9/141, and C08J 2325/06 and C08J 2323/06.

Further subdivisions:

C08J 9/0061

This subgroup is only allocated when, in addition to a "main" polymer, a second or third polymer is present in the foamable blend. This second or third polymer is always in minority, compared to the main polymer.

- - Please see the Rules under C08J 9/00.

As above, the "main" polymer is indexed using C08J 2300/00-C08J 2399/00..

- - The polymeric component in minority is indexed using C08J 2400/00-C08J 2499/00..

Example: A foam from a blend or 80% polystyrene and 20% PMMA is classified in C08J 9/0061, C08J 2325/06 and C08J 2433/12.

- When overlapping ranges of two polymers are claimed or exclusively exemplified, then "mirror classification" is given.

Example: A foamable blend of 80-20% polystyrene and 20-80% polyethylene is classified in C08J 9/0061 and C08J 2425/06 and C08J 2323/06, and C08J 2423/06 and C08J 2325/06.

Common sense says any C08J 2300/00-M08L 399/00 can be used in combination with any C08J 2400/00-C08J 2499/00 to define the invention.

- Second and/or third polymers, only present in very low proportions may be ignored, provided their presence is not the key of the invention.

- Foam compositions wherein only the polymer in minority is defined are classified in C08J 9/0061 and C08J 2400/00-C08J 2499/00.

Example: Foam comprising 10% polystyrene in 90% of an other polymer is classified in C08J 9/0061 and C08J 2425/06.

C08J 9/224

In these subgroups, Indexing Codes of the C08J 2400/00-C08J 2499/00 are used to designate the polymer used for coating, binding or impregnating the foam (particle). The foam itself receives a C08J 2300/00-C08J 2399/00 code.

C08J 9/33

In these subgroup, Indexing Codes of the C08J 2400/00-C08J 2499/00 are used to designate the foam fragments. The foamable (C08J 9/35) or unfoamable matrix (C08J 9/33) is specified using C08J 2300/00-C08J

2399/00.

C08J 9/26

Indexing Codes C08J 2201/04 to C08J 2201/0484 are used in C08J 9/26, for specifying the solid to be extracted.

Indexing Codes C08J 2201/05 to C08J 2201/0545 are used in C08J 9/28, for specifying the first step of the separation process (cooling, evaporation, precipitation).

Glossary of terms

In this subclass/group, the following terms (or expressions) are used with the meaning indicated:

Blowing agent	Substance which is either gaseous at ambient temperature or capable of reversibly becoming gaseous upon heating (C08J 9/12 or subgroups). This strict distinction is however not always respected in patents.
Foaming agent	Material that will decompose to release a gas under certain conditions (C08J 9/06 or subgroups)
Integral foams	Foams characterized by a dense or slightly expanded skin on a foamed core
Open cells foam orfoam with open pores	Foam where more than 50% or the pores are open
Porogen	Compound which is removed after solidification of the polymer composition (C08J 9/26, C08J 9/28)
Syntactic foams	Foams containing expandable and/or non expandable hollow particles (C08J 9/32)

Synonyms and Keywords

In patent documents the following expressions are often used as synonyms:

- Expandable compositions and expanded products are often regarded as similar and thus classified in the same subgroup.

- A foam composition is expandable or foamable.

- A foam (p)article can be porous cellular, expanded, foamed, pre- or post-foamed, pre- or post-expanded.

- A foam contains pores, cavities or cells, which can be closed, open or interconnected.

- A foam is porous, macroporous, microporous (1-100 microns diameter) or nanoporous (1-100 nanometers).

- The pores distribution can be for e.g. unimodal, bimodal or trimodal.

- Porous polymeric aerogels, organogels or xerogels can be regarded as foams.

C08J 9/236

using binding agents

Definition statement

This subclass/group covers:

Expandable or expanded particles coated by a thin binding agent.

C08J 9/32

from compositions containing microballoons, e.g. syntactic foams (making microballoons B01J13/02)

Definition statement

This subclass/group covers:

Foams containing expandable microspheres, e.g. Expancel ® , as well as inorganic microspheres, microballoons or cenospheres.

References relevant to classification in this group

This subclass/group does not cover:

Foams dealing with expandable particles like expandable polystyrene	C08J 9/16 to C08J 9/24
Making microballoons	B01J 13/02

C08J 9/33

Agglomerating foam fragments, e.g. waste foam

Definition statement

This subclass/group covers:

Foam fragments in a unfoamed matrix.

C08J 9/35

Composite foams, i.e. continuous macromolecular foams containing discontinuous cellular particles or fragments

Definition statement

This subclass/group covers:

Foam fragments in a foamed matrix.

C08J 11/00

Recovery or working-up of waste materials (polymerisation processes involving purification or recycling of waste polymers or their depolymerisation products C08B, C08C, C08F, C08G, C08H; mechanical treatments B29)

Definition statement

This subclass/group covers:

Physical and chemical recycling of waste polymers. with the purpose of recovering monomer(s), oligomer(s) and/or polymers with the purpose of making new polymers (same or different).

References relevant to classification in this group

This subclass/group does not cover:

Polymerisation processes involving purification or recycling of waste polymers or their depolymerisation products	C08B, C08C, C08F, C08G, C08H
Mechanical treatments	B29

Informative references

Attention is drawn to the following places, which may be of interest for search:

Collecting, recovering, recycling or	B05B 15/12

eliminating the paint sludge from the washing liquid	
Recovering or eliminating the paint sludge from washing liquid	B05B 15/12
Recovery of plastics or other constituents of waste material containing plastics, e.g. mechanical aspects of recycling	B29B 17/00
Layered products made from or containing mainly scrap material	B32B 27/00B
Layered products made of or containing mainly scrap material	B32B 27/00B
Agglomerating foam fragments, e.g. waste foam	C08J 9/33
Use of waste materials, e.g. treated or untreated sewage sludge	C08K 11/005
Compositions of (unvulcanized) reclaimed rubber	C08L 17/00
Compositions of precrosslinked rubber or scrap rubber or used vulcanised rubber	C08L 19/003
Paint detackifiers or coagulants, e.g. for the treatment of oversprays in paint spraying installations	C09D 7/008
Chemical paint or ink removers	C09D 9/00-C09D 9/04

Special rules of classification within this group

- The treatment of specific polymers is indicated using Indexing Codes of the group C08J 2300/00-C08J 2399/00.
- When the presence of one or several additional polymers, present in minority, is of relevance, this additional polymer is specified using Indexing Codes of the group C08J 2400/00-C08J 2499/00.

Example - Recycling of saturated polyesters is classified in C08J 11/00 and C08J 2367/02.

Synonyms and Keywords

In patent documents the following expressions/words are often used as synonyms in combination with the corresponding polymer:

"recycle(-ing)"; "reclaim(-ing)"; "discard(-ing)"; "recuperate(-ing)"; "rejuvenate(-ing)"; "reutilize(-ing)"; "regenerate(-ing)"; "salvage(-ing)"; "waste"; "scrap"; "recover(-ing)"; "reject(ed)"; "post-consumed".

C08J 11/02

of solvents, plasticisers or unreacted monomers

Definition statement

This subclass/group covers:

Cleaning or purifying waste polymers by removing residual monomers, solvents, plasticizers, and the like.

Informative references

Attention is drawn to the following places, which may be of interest for search:

Post polymerisation treatment of polymer obtained by reactions involving carbon to carbon unsaturated bonds; Purification	C08F 6/00-C08F 6/28
Treatment of polymeric surfaces with solvents or swelling agents	C08J 7/02

Special rules of classification within this group

Please see the Rules under C08J 11/00.

C08J 11/04

of polymers

Definition statement

This subclass/group covers:

After-treatment of waste polymers involving mainly chemical modification of

polymers, use of functional compatibilizers, and the like.

Informative references

Attention is drawn to the following places, which may be of interest for search:

Chemical modification of membranes	B01D 67/0093
After treatment of addition polymers (obtained by reactions involving polymers obtained by reactions involving carbon to carbon unsaturated bonds; purification)	C08F 8/00 - C08F 8/50
After treatment of condensation/ polyaddition polymers	C08G 2/30, C08G 59/14, C08G 63/46, C08G 63/91, C08G 64/42, C08G 65/32, C08G 65/48, C08G 69/48, C08G 75/0286, C08G 77/38, C08G 85/004

Special rules of classification within this group

Please see the Rules under C08J 11/00.

C08J 11/06

without chemical reactions

Definition statement

This subclass/group covers:
Physical recovery or recycling of polymers.

Informative references

Attention is drawn to the following places, which may be of interest for search:

Recovery or recycling of polymers by mechanical means	B29B 17/00-B29B 17/0412
Post polymerization treatment of polymers obtained by reactions involving carbon to carbon unsaturated bonds; Purification	C08F 8/06-C08F 6/28
Agglomerating foam fragments, e.g. waste foam	C08J 9/33

Compositions of (unvulcanized) reclaimed rubber	C08L 17/00
Compositions of scrap (vulcanized) rubber	C08L 19/003

Special rules of classification within this group

Please see the Rules under C08J 11/00.

C08J 11/08

using selective solvents for polymer components.

Definition statement

This subclass/group covers:

Recovery, extracting or recycling of polymer components from a waste mixture using selective solvents.

Informative references

Attention is drawn to the following places, which may be of interest for search:

Working-up tar for by extraction with selective solvents	C10C 1/18
Treatment of polymeric substrates with solvents or swelling agents	C08J 7/02
Working-up pitch, asphalt, bitumen by selective extraction	C10C 3/08

Special rules of classification within this group

Please see the Rules under C08J 11/00.

C08J 11/10

by chemically breaking down the molecular chains of polymers or breaking of crosslinks, e.g. devulcanisation

Definition statement

This subclass/group covers:

Depolymerization of waste polymers.

Informative references

Attention is drawn to the following places, which may be of interest for search:

Depolymerisation to the original monomer	C07
Depolymerisation of halogenated hydrocarbon polymers	C07C 17/367
Depolymerisation of polyesters	(C07C 51/09, C07C 63/26)
Depolymerisation of polyamides	C07D 201/12
Depolymerisation of rubber	C08C 19/08
Production of liquid hydrocarbon mixtures from rubber or rubber waste	C10G 1/10

Special rules of classification within this group

Please see the Rules under C08J 11/00.

C08J 11/105

by treatment with enzymes

Definition statement

This subclass/group covers:

Decomposing or depolymerizing of waste polymers with enzymes or micro-organisms.

Informative references

Attention is drawn to the following places, which may be of interest for search:

Preparation of polyesters of hydroxy-carboxylic acids by using micro-organisms	C12P 7/625
Processes for making harmful chemical substances harmless by	A62D 3/02

biological methods, i.e. processes using enzymes or micro-organisms	

Special rules of classification within this group

Please see the Rules under C08J 11/00.

C08J 11/12

by dry-heat treatment

Definition statement

This subclass/group covers:

Recovery or recycling of chemical compounds by thermal decomposition of waste polymers, e.g. by pyrolysis or incineration.

References relevant to classification in this group

This subclass/group does not cover:

Destructive distillation of carbonaceous materials for production of gas, coke, tar or similar matters	C10B

Informative references

Attention is drawn to the following places, which may be of interest for search:

Destructive distillation of synthetic polymeric materials. e.g. tyres	C10B 53/07
Production of liquid hydrocarbon mixtures from rubber or rubber waste	C10G 1/10

Special rules of classification within this group

Please see the Rules under C08J 11/00.

Synonyms and Keywords

In patent documents the following expressions/words "---", "---" and "---" are often used as synonyms in combination with the corresponding polymer.

"pyrolyis", incineration, "thermal decomposition", "cracking".

C08J 11/14

by treatment with steam or water

Definition statement

This subclass/group covers:

Hydrolysis of waste polymers with water or steam or water in supercritical state.

Special rules of classification within this group

Please see the Rules under C08J 11/00.

Synonyms and Keywords

In patent documents the following expressions/words "---", "---" and "---" are often used as synonyms in combination with the corresponding polymer.

"hydrolysis", "decomposition or depolymerization in water".

C08J 11/16

by treatment with inorganic material

Definition statement

This subclass/group covers:

Depolymerization of waste polymers using using inorganic materials such as catalysts.

Special rules of classification within this group

Please see the Rules under C08J 11/00.

Group C08J 11/14 takes precedence over group C08J 11/16.

C08J 11/18

by treatment with organic material

Definition statement

This subclass/group covers:
Depolymerization of waste polymers with organic materials.

Special rules of classification within this group

Please see the Rules under C08J 11/00.

Synonyms and Keywords

In patent documents the following expressions/words "---", "---" and "---" are often used as synonyms in combination with the corresponding polymer.

"solvolysis"

C08J 11/20

by treatment with hydrocarbons or halogenated hydrocarbons

Definition statement

This subclass/group covers:
Depolymerisation of waste polymers with halogenated hydrocarbons.

C08J 11/22

by treatment with organic oxygen-containing compounds

Definition statement

This subclass/group covers:
Depolymerisation of waste polymers with oxygen containing compounds, e.g. peroxides.

Special rules of classification within this group

Please see the Rules under C08J 11/00.

C08J 11/24

containing hydroxyl groups

Definition statement

This subclass/group covers:
Depolymerisation of waste polymers by alcoholysis or glycloysis.

Special rules of classification within this group

Please see the Rules under C08J 11/00.

Synonyms and Keywords

In patent documents the following expressions/words are often used as synonyms in combination with the corresponding polymer:

"alcoholysis", "glycolysis.

C08J 11/26

containing carboxylic acid groups, their anhydrides or esters

Definition statement

This subclass/group covers:

Depolymerisation of waste polymers with organic compounds containing carboxylic acid groups, their anhydrides or ester.

Special rules of classification within this group

Please see the Rules under C08J 11/00.

C08J 11/28

by treatment with organic compounds containing nitrogen, sulfur or phosphorus

Definition statement

This subclass/group covers:

Depolymerisation of waste polymers with organic compounds containing nitrogen, sulphur or phosphorous; e.g. (cyclo)aliphatic amines, thiocarbamates, and the like.

Special rules of classification within this group

Please see the Rules under C08J 11/00.

C08J 99/00

Subject matter not provided for in other groups of this subclass