C08J

WORKING-UP; GENERAL PROCESSES OF COMPOUNDING; AFTER-TREATMENT NOT COVERED BY SUBCLASSES C08B, C08C, C08F, C08G or C08H (working, e.g. shaping, of plastics B29)

Definition statement

This place covers:

- Chemical aspects of processes for treating, compounding, working-up or recovery of macromolecular substances unless the treatment, compounding, working-up or recovery is provided for elsewhere as indicated below in the relationship section.
- Chemical features of manufacture, treatment or coating of articles or shaped materials containing macromolecular substances unless the manufacture, treatment or coating is provided for elsewhere as indicated below in the relationship section.
- Chemical aspects of working-up of macromolecular substances to porous or cellular articles or materials and after-treatment thereof unless provided for elsewhere as indicated below in the relationship section.
- Chemical aspects of recovery or working-up of waste materials, i.e. macromolecular materials (e.g. polymers), solvents and unreacted monomers, unless provided for elsewhere as indicated below in the relationship section.

Relationships with other classification places

C08J covers general processes or treatments that are not already covered by subclasses C08B, C08C, C08F, C08G and C08H.

C08J is residual to subclasses C08B, C08C, C08F, C08G and C08H in relation to after-treatment of macromolecular substances or polymers, and therefore does not cover:

- Processes specially adapted for treating macromolecular substances or polymers for which after-treatments are specifically mentioned in C08B, C08C, C08F, C08G and C08H (e.g. C08F 6/00).
- Polymerisation processes involving purification or recycling of waste polymers or depolymerisation products of specified macromolecular substances.
- Foamed polymeric products of isocyanates or isothiocyanates characterised by the monomers or catalysts used (C08G 18/00).

B29 covers mechanical aspects of working up, after-treatment and compounding of plastics or materials in a plastic state. If a process for working up, after-treatment and compounding of plastics contains both chemical and mechanical aspects, it should be classified in both B29 and C08J.

When classifying in this subclass, additional classification(s) are made from subclass C08L, relating to essential or characterising materials used.

References

Informative references

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

Mechanical aspects of working-up	B29C
Layered products, manufacture thereof	B32B
Working-up of compositions comprising more than 50% of mineral filler	C04B
Adhesive processes in general	C09J 5/00
Treatment of textiles	D06

Special rules of classification

Reference B29 is non-limiting in the subclass C08J. CPC will be updated/corrected once this inconsistency is resolved in IPC.

- In this subclass, at each hierarchical level, in the absence of an indication to the contrary, classification is made in the last appropriate place.
- In this subclass, the polymer involved in the working-up is specified using Indexing symbols 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 symbols of the group C08J 2400/00-C08J 2499/00.

C08J 3/00

Processes of treating or compounding macromolecular substances

Definition statement

This place covers:

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

Relationships with other classification places

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 C09K 23/00 could apply to the emulsification of polymers and also be classified in C08J 3/02.

References

Application-oriented references

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

Medicinal preparations characterised by the non-active ingredient, e.g. characterisation by their physical form	A61K 47/50
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:

Treatment by wave energy or irradiation of shaped articles	C08J 7/123, C08J 7/18
Cosmetic or similar preparations characterised by their physical form	A61K 8/00
Chemical aspects of, or use of materials for, bandages, dressings or absorbent pads	A61L 15/00
Mechanical aspects of mixing, emulsifying and dispersing	B01F
Protection of catalysts, e.g. by coating	B01J 33/00

Making granules	B29B 9/00
Mechanical aspects of cross–linking or vulcanising	B29C 35/00
Treatment or chemical modification of rubbers	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
Crosslinking aspects not classifiable in these groups	C08G, C08F, C08K
Plasticising macromolecules or compounding with additives characterised by the plasticiser or additive	C08K 5/00, C08K 3/00
Encapsulation or pre-treatment of additives	C08K 9/00

Special rules of classification

- C08J 3/122 takes precedence over C08J 3/124, C08J 3/126, and C08J 3/128.
- This subgroup could also be associated with C08J 3/02, as it is relevant for the process of making a solution or emulsion.
- In C08J 3/22, the additive added as master batch could also be a polymer.
- This subgroup could also be associated with C08J 3/20, i.e. compounding polymer with additive.

C08J 3/12

Powdering or granulating

References

Informative references

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

Nanocapsules for medical purposes	A61K 9/51
Making granules	B29B 9/00

C08J 3/124

{Treatment for improving the free-flowing characteristics}

References

Informative references

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

Agglomerates, granulates or microbeadlets for medical purposes	A61K 9/16
Process or devices for granulating using non-sticking agents	B01J 2/30
Auxiliary treatment of particles	B29B 9/16

C08J 3/126

{Polymer particles coated by polymer, e.g. core shell structures}

References

Informative references

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

Process or devices for granulating material followed by coating of the granules	B01J 2/003

C08J 3/16

by coagulating dispersions {(C08J 3/122 takes precedence)}

References

Limiting references

This place does not cover:

Pulverisation by spraying	C08J 3/122

Informative references

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

Coagulation of polymer emulsions	C08F 6/22

C08J 3/18

Plasticising macromolecular compounds (plasticisers C08K)

Definition statement

This place covers:

This group covers the process of treating polymers with plasticisers in order to modify thermal and mechanical properties of the polymer.

Relationships with other classification places

Plasticisers are classified in C08K.

Special rules of classification

Reference C08K is non-limiting in the main group C08J 3/18. CPC will be updated/corrected once this inconsistency is resolved in IPC.

C08J 3/24

Crosslinking, e.g. vulcanising, of macromolecules (mechanical aspects B29C 35/00; crosslinking agents C08K)

References

Limiting references

This place does not cover:

Crosslinking agents	C08K

Informative references

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

Compounding polymers with additives	C08J 3/20
Mechanical aspects of crosslinking	B29C 35/00

Special rules of classification

Reference B29C 35/00 is non-limiting in the subgroup C08J 3/24. CPC will be updated/corrected once this inconsistency is resolved in IPC.

C08J 3/241

{Preventing premature crosslinking by physical separation of components, e.g. encapsulation}

References

Informative references

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

Use of pretreated ingredients	C08K 9/00

C08J 5/00

Manufacture of articles or shaped materials containing macromolecular substances (manufacture of semi-permeable membranes B01D 67/00 - B01D 71/00)

Definition statement

This place 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.

References

Limiting references

This place does not cover:

Membranes for dialysis, osmosis or filtration, e.g. semi-permeable membranes	B01D 67/00 - B01D 71/00

Application-oriented references

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

Medicinal preparations characterised by the non-active ingredient being chemically bound to the active ingredient	A61K 47/50
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:

Shaping of foodstuffs	A23P
Cation exchange	B01J 39/18 - B01J 39/22
Anion-exchange	B01J 41/12 - B01J 41/16
Amphoteric ion-exchange	B01J 43/00
Regeneration of ion-exchangers	B01J 49/00
Layered products comprising a layer of synthetic resin	B32B 27/00
Microstructural technology	B81
Treatment of rubber latex	C08C 1/00
Treatment of polymer emulsions	C08F 6/14
Use of ingredients characterised by shape	C08K 7/00
Surface modified additives	C08K 9/00
After treatment of threads during manufacturing	D01F 11/00
Other nonwoven fabrics	D04H 13/00
Finishing of textiles	D06M

C08J 5/005

{Reinforced macromolecular compounds with nanosized materials, e.g. nanoparticles, nanofibres, nanotubes, nanowires, nanorods or nanolayered materials}

Definition statement

This place covers:

The reinforcement of polymers with nanofillers as a structuring agent.

Relationships with other classification places

Polymers comprising nanoadditives without reinforcing structure are classified in C08K.

References

Informative references

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

Nanotechnology for materials and surface science	B82Y 30/00
Use of ingredients characterised by shape	C08K 7/00
Nanostructured additives	C08K 2201/011

C08J 5/02

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

Definition statement

This place covers:

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

Relationships with other classification places

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

Definition statement

This place covers:

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

Relationships with other classification places

- Mechanical aspect of making such composites in a specific process for making composites are classified in B29C 70/00.
- Compounded polymer compositions or reinforced plastics characterised by the fibrous material are classified in C08K 7/00 or C08K 9/00 (e.g. reinforcement of plastics like polyamide with glass fibres in an amount generally lower than 50% (volume or weight) is classified in C08K 7/00).

References

Informative references

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

Chemical after-treatment of artificial filaments during manufacture	D01F 11/00
Finishing of textiles	D06M

C08J 5/12

Bonding of a preformed macromolecular material to the same or other solid material such as metal, glass, leather, e.g. using adhesives

References

Informative references

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

Joining or sealing of preformed parts	B29C 65/00

C08J 5/124

{using adhesives based on a macromolecular component}

References

Informative references

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

Adhesive compositions	C09J 4/00, C09J 101/00 - C09J 201/00

C08J 5/18

Manufacture of films or sheets

Definition statement

This place covers:

The manufacture of self-standing monolayers, films or sheets characterised by chemical features or parameters; the films per se and the manufactured products thereof.

Self-standing films are films that are different from films made by coating on a substrate.

Porous or microporous films when the pores are obtained mechanically.

Relationships with other classification places

- Adhesive sheets are classified in C09J 7/00.
- Optical sheets are classified in G02B.
- Prepregs are classified in C08J 5/24.
- Mechanical aspects of the formation of films, e.g. extrusion, blow-moulding, are classified in B29C.

References

Informative references

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

Coating of shaped articles made of polymers with polymeric layers	C08J 7/04
Process for making films only characterised by the use of specific apparatus, e.g. extruding, blow moulding or thermoforming	B29C
Shaping by stretching, e.g. drawing through a die, characterised by the choice of materials	B29C 55/005
Producing flat articles, e.g. films or sheets	B29D 7/01
Layered products comprising a layer of synthetic resin	B32B 27/00
Wrappers or flexible covers; Packaging materials of special type or form	B65D 65/00
Films which are only coated layers	C09D

Special rules of classification

- The type of polymer used to make the film is indicated using an Indexing symbol of groups 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 an Indexing symbol of groups 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 structures of ion-exchange resins

Definition statement

This place covers:

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

This group covers the manufacturing process as well as the obtained products.

References

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

Please see the Rules under C08J 5/18.

C08J 5/22

Films, membranes or diaphragms

Definition statement

This place 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.

References

Informative references

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

Processes of separation using semi-permeable membranes, e.g. reverse osmosis, microfiltration or ultrafiltration	B01D 61/00
Semi-permeable membranes of macromolecular compounds	B01D 71/08 - B01D 71/82
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 47/15, B01J 49/00
Electrolyte membranes which are characterised only by the construction, e.g. porosity or presence of specific electrolytes, the polymer not being specific	H01M 8/00
Fuel cells with polymeric electrolyte material	H01M 8/1018

Special rules of classification

- Groups e.g. $–SO_2F$, that do not have ion-exchanging properties, but may, by simple hydrolysis in an alkaline, neutral or acid medium, be transformed into ion-exchanging groups, e.g. $–SO_2H$, are considered as ion-exchanging groups.
- 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 in the form of fabrics, or the like.
- Quaternising reactions are not considered as after-treatments.
- Membranes based on cellulose are classified in C08J 5/2212.
- Methods for incorporating reinforcement supports or filling bodies where the support or filling body has no ion-exchange activity are classified in C08J 5/2206.
- Ion-exchanging fibrous fabrics are considered as heterogeneous membranes and are classified in C08J 5/2275; they include composite membranes and mixtures of two or more (ion exchange) polymers.
- Reactions that change the nature of the ion-exchanging groups, introduction of ion-exchanging groups, and after-treatment of a membrane that has already been formed are classified in C08J 5/2287.

See also the Rules under C08J 5/18.

C08J 5/2206

{based on organic and/or inorganic macromolecular compounds}

Definition statement

This place 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.

References

Informative references

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

Fuel cells with solid polymeric electrolyte materials	H01M 8/10

Special rules of classification

Please see the Rules under C08J 5/18.

C08J 5/2212

{Natural macromolecular compounds}

Definition statement

This place covers:

Ion-exchange membranes based on natural polymers, e.g. celullose.

Special rules of classification

Please see the Rules under C08J 5/18.

C08J 5/2218

{Synthetic macromolecular compounds}

Definition statement

This place covers:

Ion-exchange membranes based on synthetic organic polymers.

Special rules of classification

Please see the Rules under C08J 5/18.

C08J 5/2225

{containing fluorine}

Definition statement

This place covers:

Ion-exchange membranes based on synthetic organic polymers containing fluorine.

Special rules of classification

Please see the Rules under C08J 5/18.

C08J 5/2231

{based on macromolecular compounds obtained by reactions involving unsaturated carbon-to-carbon bonds}

Definition statement

This place covers:

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

C08J 5/2237

{containing fluorine}

Definition statement

This place covers:

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

Special rules of classification

Please see the Rules under C08J 5/18.

C08J 5/2243

{obtained by introduction of active groups capable of ion-exchange into compounds of the type C08J 5/2231}

Definition statement

This place 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

Please see the Rules under C08J 5/18.

Groups, e.g. SO_2F, 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. SO_2H, are considered as such.

C08J 5/225

{containing fluorine}

Definition statement

This place 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

Please see the Rules under C08J 5/18.

C08J 5/2256

{based on macromolecular compounds obtained by reactions other than those involving carbon-to-carbon bonds, e.g. obtained by polycondensation}

Definition statement

This place covers:

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

Special rules of classification

Please see the Rules under C08J 5/18.

C08J 5/2262

{containing fluorine}

Definition statement

This place covers:

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

Special rules of classification

Please see the Rules under C08J 5/18.

C08J 5/2268

{based on macromolecular compounds obtained by reactions involving unsaturated carbon-to-carbon bonds, and by reactions not involving this type of bond}

Definition statement

This place covers:

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

References

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

{Heterogeneous membranes}

Definition statement

This place 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.

References

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 69/14

Special rules of classification

Please see the Rules under C08J 5/18.

C08J 5/2281

{fluorine containing heterogeneous membranes}

Definition statement

This place covers:

Heterogeneous or composite ion-exchange membranes containing fluorine

References

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

Please see the Rules under C08J 5/18.

C08J 5/2287

{After-treatment}

Definition statement

This place 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

References

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 67/00

Special rules of classification

Please see the Rules under C08J 5/18.

Quaternising reactions are not considered as after-treatments.

C08J 5/2293

{After-treatment of fluorine-containing membranes}

Definition statement

This place covers:

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

References

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	**B01D67/0087**, B01D 71/00

Special rules of classification

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 5/2293.

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 place covers:

Prepregs, i.e. reinforcement material pre-impregnated with a resin matrix.

References

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 fibrous or filamentary layers next to each other	B32B 5/26
Layered products comprising at least one impregnated fibrous or filamentary layer	B32B 2260/021

Special rules of classification

In this group and its indented subgroups, the last place priority rule is not applied, i.e. the common rule is applied.

See also the Rules under C08J 5/18.

C08J 7/00

Chemical treatment or coating of shaped articles made of macromolecular substances (coating with metallic material C23C; electrolytic deposition of metals C25)

Definition statement

This place covers:

All types of treatments of shaped articles comprising polymeric surfaces. The treatments include chemical or physical treatments and coating of continuous polymeric surfaces.

Relationships with other classification places

- C09D relates to coating compositions.
- B05D relates to processes for applying liquids or other fluent materials to surfaces in general.
- Adhesive sheets are classified in C09J 7/00.
- D06M 15/00 relates to the coating of polymer fibres.
- D01F relates to the chemical treatment of fibres.

References

Limiting references

This place does not cover:

Coating with metallic material	C23C
Electrolytic deposition of metals	C25

Informative references

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

Processes for applying liquids or other fluent materials to surfaces in general	B05D
Coating compositions	C09D
Treating textile materials	D06

Special rules of classification

- The treatment of specific polymers is indicated using Indexing symbols 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 symbols 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 place covers:

Treatment of polymeric substrates with solvents or swelling agents.

References

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.	B29C 71/0009

Special rules of classification

Please see the Rules under C08J 7/00.

C08J 7/04

Coating

Definition statement

This place covers:

Coating of polymeric substrates in general.

Relationships with other classification places

See the Relationships section of C08J 7/00.

References

Informative references

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

Coating compositions based on organic non-macromolecular compounds having at least one polymerisable carbon-to-carbon unsaturated bond	C09D 4/00
Coating compositions per se	C09D 101/00- C09D 201/00

Special rules of classification

See the Special rules section of C08J 7/00.

C08J 7/042

{with two or more layers, where at least one layer of a composition contains a polymer binder}

Definition statement

This place covers:

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

Relationships with other classification places

See the Relationships section of C08J 7/00.

References

Informative references

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

Layered products essentially comprising synthetic resin	B32B 27/00

Special rules of classification

The treatment of specific polymers is indicated using Indexing Codes of the groups 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 groups 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 C08J 2463/00.

C08J 7/0423

{with at least one layer of inorganic material and at least one layer of a composition containing a polymer binder}

Definition statement

This place 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.

Relationships with other classification places

See the Relationships section of C08J 7/00.

Special rules of classification

See the Special Rules section of C08J 7/00.

C08J 7/0427

{with only one layer of a composition containing a polymer binder (with more layers C08J 7/042)}

Definition statement

This place covers:

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

References

Limiting references

This place does not cover:

Multiple coatings on a polymeric substrate	C08J 7/042

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

The coating of a specific polymeric substrate with a layer of an unspecified polymer binder is using Indexing Codes of the groups 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 groups C08J 2400/00 - C08J 2499/00.

Example -1: Coating of a polycarbonate substrate with a protective polymeric layer is classified in C08J 7/0427 and C08J 2369/00.

When both the substrate and the coating are unspecified the classification C08J 7/0427 alone is used.

Example -2: Coating a polycarbonate substrate with a polyurethane layer is classified in C08J 7/0427 and C08J 2369/00 and C08J 2475/04.

C08J 7/06

with compositions not containing macromolecular substances

Definition statement

This place covers:

Coating or impregnating of a polymeric substrate with a low-molecular weight organic or inorganic compound. Adsorbing or absorbing of low-molecular weight compounds or inorganic compounds on a polymeric substrate.

Relationships with other classification places

Coating of a polymeric substrate with a metallic material e.g. metallisation is classified in C23C.

References

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
Coating with metallic material	C23C

Special rules of classification

Please see the Rules under C08J 7/00.

C08J 7/065

{Low-molecular-weight organic substances, e.g. absorption of additives in the surface of the article}

Definition statement

This place 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.

References

Informative references

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

Features of coating compositions; non-macromolecular additives	C09D 7/63

Special rules of classification

Please see the Rules under C08J 7/00.

C08J 7/08

{Heat treatment}

Definition statement

This place covers:

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

References

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

Please see the Rules under C08J 7/00.

C08J 7/12

Chemical modification

Definition statement

This place covers:

Chemical modification of a polymeric surface.

References

Informative references

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

Chemical modification of membranes	B01D 67/0093
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

Special rules of classification

Please see the Rules under C08J 7/00.

Glossary of terms

In this place, the following terms or expressions are used with the meaning indicated:

Chemical etching	Chemical modification of a polymeric surface

C08J 7/123

{Treatment by wave energy or particle radiation (C08J 7/18 takes precedence)}

Definition statement

This place covers:

Treatment of polymeric substrates with electromagnetic radiation, e.g. corona, plasma, X-rays or γ-rays, UV, laser, etc., wherein the treated substrate may be coated during the treatment or at a later stage or not at all.

Relationships with other classification places

- Treatment of the bulk of a polymer with electromagnetic radiation is classified in C08J 3/28. Treatment of a polymeric surface with electromagnetic radiation is classified in C08J 7/123.
- A coating process comprising plasma pre-treatment of polymeric substrates is classified in B05D 3/144. If the coating process is more directed to the chemistry of the coated layers, it is classified in C08J 7/123.

References

Limiting references

This place does not cover:

Treatment with polymerisable compounds using wave energy or particle radiation	C08J 7/18

Informative references

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

Treatment of a macromolecular compound by wave energy or radiation	C08J 3/28
Pre-treatment 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

Special rules of classification

Please see the Rules under C08J 7/00.

Synonyms and Keywords

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

- "Particle radiation treatment", "Plasma treatment", "Electron beam treatment", and/or "Electronic irradiation"
- " Wave energy treatment", "Corona discharge", "Glow discharge", and/or "Ultraviolet treatment"

C08J 7/126

{Halogenation}

Definition statement

This place covers:

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

References

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

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 place covers:

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

References

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

Please see the Rules under C08J 7/00.

C08J 7/16

with polymerisable compounds

Definition statement

This place covers:

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

References

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

Please see the Rules under C08J 7/00.

C08J 7/18

using wave energy or particle radiation

Definition statement

This place covers:

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

References

Informative references

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

Plasma-deposition of organic layers	B05D 1/62

Special rules of classification

Please see the Rules under C08J 7/00.

Synonyms and Keywords

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

- "Particle radiation treatment", "Plasma treatment", "Electron beam treatment", and/or "Electronic irradiation"
- " Wave energy treatment", "Corona discharge", "Glow discharge", and/or "Ultraviolet treatment"

C08J 9/00

Working-up of macromolecular substances to porous or cellular articles or materials; After-treatment thereof (mechanical aspects of shaping of plastics or substances in a plastic state for the production of porous or cellular articles B29C)

Relationships with other classification places

Classification guidance:

- Mechanical aspects of shaping of plastics or substances in a plastic state for the production of porous or cellular articles are classified in B29C.
- Porous or cellular articles or materials for medical applications are classified in A61L.

References

Application-oriented references

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

Porous films	C08J 5/18
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

Informative references

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

Sponges for cleaning purposes	A47L 13/16
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
Foamed polymeric products of isocyanates or isothiocyanates characterised by the monomers or catalysts used	C08G 18/00
Use of a filler in a non-foamed polymer composition	C08K
Polymer blends	C08L
Propellants for aerosols	C09K 3/30

Special rules of classification

Reference B29C is non-limiting in the main group C08J 9/00. CPC will be updated/corrected once this inconsistency is resolved in IPC.

Classification guidance:

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.

The blowing or foaming agents involved are classified in groups C08J 9/02 - C08J 9/149.

- The foaming processes are classified in groups C08J 9/16 - C08J 9/35.

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 groups C08J 9/0019, C08J 9/0038 and C08J 9/0014.

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

Mixtures of organic and inorganic blowing agents are classified in C08J 9/127 and each blowing agent of the mixture is also classified according to its nature.

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

- When a foam is characterised by the involved polymer(s), then Indexing symbols of groups 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.
- Example: C08J 2325/06 corresponds to C08L 25/06 (polystyrene). Additionally, groups C08J 2300/00 - C08J 2300/30 specify polymers that are broadly defined.

When a document deals with one single polymer or several alternative polymers, but no polymer blend, then an Indexing symbol 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 an alkane blowing agent for expanding polystyrene or polyethylene is classified in C08J 9/141, and C08J 2325/06 and C08J 2323/06.

Further subdivisions:

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 above.

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

- The polymeric component in minority is indexed using groups 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 a combination of both classification symbols must be given.

See example below.

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.

General practice specifies that any of groups C08J 2300/00-C08J 2399/00 can be used in combination with any of groups 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 another polymer is classified in C08J 9/0061 and C08J 2425/06.

C08J 9/224

In these subgroups, Indexing symbols of 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 symbol.

C08J 9/33

In these subgroups, Indexing symbols of 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 symbols C08J 2201/04 - C08J 2201/0484 are used in C08J 9/26, for specifying the solid to be extracted.

C08J 9/28

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

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 unimodal, bimodal or trimodal.

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

Glossary of terms

In this place, 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.
Expandable	Expandable includes expanding, pre-expanded or expanded.

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 or foam 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).

C08J 9/127

{Mixtures of organic and inorganic blowing agents}

Special rules of classification

Mixtures of organic and inorganic blowing agents are classified in C08J 9/127 and each blowing agent of the mixture is also classified according to its nature

C08J 9/16

Making expandable particles

Glossary of terms

In this place, the following terms or expressions are used with the meaning indicated:

The term "Expandable particles" covers also expanding, pre-expanded or expanded particles

C08J 9/22

After-treatment of expandable particles; Forming foamed products

Glossary of terms

In this place, the following terms or expressions are used with the meaning indicated:

The term "Expandable particles" concerns also expanding, pre-expanded or expanded particles

C08J 9/236

using binding agents

Definition statement

This place covers:

Expandable or expanded particles coated by a thin binding agent.

C08J 9/26

by elimination of a solid phase from a macromolecular composition or article, e.g. leaching out

References

Informative references

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

Lithographic processes	G03F 7/00

C08J 9/32

from compositions containing microballoons, e.g. syntactic foams

Definition statement

This place covers:

Foams containing expandable microspheres, as well as inorganic microspheres, microballoons or cenospheres.

References

Informative references

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

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

C08J 9/33

Agglomerating foam fragments, e.g. waste foam

Definition statement

This place covers:

Foam fragments in an unfoamed matrix.

C08J 9/35

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

Definition statement

This place covers:

Foam fragments in a foamed matrix.

C08J 11/00

Recovery or working-up of waste materials (recovery of plastics B29B 17/00; polymerisation processes involving purification or recycling of waste polymers or their depolymerisation products C08B, C08C, C08F, C08G, C08H)

Definition statement

This place 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

Informative references

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

Agglomerating foam fragments, e.g. waste foam	C08J 9/33
Collecting, recovering, recycling or eliminating the paint sludge from the washing liquid; Recovering or eliminating the paint sludge from washing liquid	B05B 16/00
Mechanical treatments	B29
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 2272/00
Polymerisation processes involving purification or recycling of waste polymers or their depolymerisation products	C08B, C08C, C08F, C08G, C08H
Use of waste materials, e.g. treated or untreated sewage sludge	C08K 11/005
Compositions of (unvulcanised) 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 7/71
Chemical paint or ink removers	C09D 9/00- C09D 9/04

Special rules of classification

References B29B 17/00, C08B, C08C, C08F, C08G and C08H are non-limiting in the main group C08J 11/00. CPC will be updated/corrected once this inconsistency is resolved in IPC.

Looping references between C08J 11/00 and B29B 17/00 have been identified. Until this inconsistency is resolved in IPC, the current classification practice in CPC is as follows: B29B 17/00 is considered as non-limiting in the main group C08J 11/00.

Classification Guidance:

The treatment of specific polymers is indicated using Indexing symbols 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 symbols 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 words/expressions are often used as synonyms:

- "recycle(-ing)", "reclaim(-ing)", "discard(-ing)", "recuperate(-ing)", "rejuvenate(-ing)", "reutilize(-ing)", "regenerate(-ing)", "salvage(-ing)", "waste", "scrap", "recover(-ing)", "reject(ed)", and "post-consumed" in combination with the corresponding polymer.

C08J 11/02

of solvents, plasticisers or unreacted monomers

Definition statement

This place covers:

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

References

Informative references

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

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

Special rules of classification

Please see the Rules under C08J 11/00.

C08J 11/04

of polymers

Definition statement

This place covers:

After-treatment of waste polymers involving mainly chemical modification of polymers, use of functional compatibilizers, and the like.

References

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

Please see the Rules under C08J 11/00.

C08J 11/06

without chemical reactions

Definition statement

This place covers:

Physical recovery or recycling of polymers.

References

Informative references

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

Agglomerating foam fragments, e.g. waste foam	C08J 9/33
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
Compositions of (unvulcanized) reclaimed rubber	C08L 17/00
Compositions of scrap (vulcanized) rubber	C08L 19/003

Special rules of classification

Please see the Rules under C08J 11/00.

C08J 11/08

using selective solvents for polymer components

Definition statement

This place covers:

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

References

Informative references

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

Working-up tar by extraction with selective solvents	C10C 1/18

Working-up pitch, asphalt, bitumen by selective extraction	C10C 3/08

Special rules of classification

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 (depolymerisation to the original monomer C07)

Definition statement

This place covers:

Depolymerization of waste polymers.

References

Informative references

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

Organic chemistry	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
Devulcanisation of rubber	C08C 19/085
Production of liquid hydrocarbon mixtures from rubber or rubber waste	C10G 1/10

Special rules of classification

Reference C07 is non-limiting in the subgroup C08J 11/10. CPC will be updated/corrected once this inconsistency is resolved in IPC.

Please see the Rules under C08J 11/00.

C08J 11/105

{by treatment with enzymes}

Definition statement

This place covers:

Decomposing or depolymerizing of waste polymers with enzymes or microorganisms.

References

Informative references

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

Processes for making harmful chemical substances harmless by biological methods, i.e. processes using enzymes or microorganisms	A62D 3/02

Preparation of polyesters of hydroxy-carboxylic acids by using microorganisms	C12P 7/625

Special rules of classification

Please see the Rules under C08J 11/00.

C08J 11/12

by dry-heat treatment only

Definition statement

This place covers:

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

References

Informative references

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

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

Please see the Rules under C08J 11/00.

Synonyms and Keywords

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

- "pyrolysis", "incineration", "thermal decomposition" and "cracking" in combination with the corresponding polymer

C08J 11/14

by treatment with steam or water

Definition statement

This place covers:

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

Special rules of classification

Please see the Rules under C08J 11/00.

Synonyms and Keywords

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

- "hydrolysis" and "decomposition or depolymerization in water" in combination with the corresponding polymer

C08J 11/16

by treatment with inorganic material (C08J 11/14 takes precedence)

Definition statement

This place covers:

Depolymerization of waste polymers using inorganic materials such as catalysts.

Special rules of classification

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 place covers:

Depolymerization of waste polymers with organic materials.

Special rules of classification

Please see the Rules under C08J 11/00.

Synonyms and Keywords

In patent documents the following expression/word "solvolysis" is often used as a synonym in combination with the corresponding polymer.

C08J 11/20

by treatment with hydrocarbons or halogenated hydrocarbons

Definition statement

This place covers:

Depolymerisation of waste polymers with halogenated hydrocarbons.

C08J 11/22

by treatment with organic oxygen-containing compounds

Definition statement

This place covers:

Depolymerisation of waste polymers with oxygen containing compounds, e.g. peroxides.

Special rules of classification

Please see the Rules under C08J 11/00.

C08J 11/24

containing hydroxyl groups

Definition statement

This place covers:

Depolymerisation of waste polymers by alcoholysis or glycloysis.

Special rules of classification

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 place covers:

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

Special rules of classification

Please see the Rules under C08J 11/00.

C08J 11/28

by treatment with organic compounds containing nitrogen, sulfur or phosphorus

Definition statement

This place 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

Please see the Rules under C08J 11/00.

C08J 2201/032

Impregnation of a formed object with a gas

References

Informative references

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

Making expandable particles by impregnating polymer particles with the blowing agent	C08J 9/18

C08J 2331/00

Characterised by the use of copolymers of compounds having one or more unsaturated aliphatic radicals, each having only one carbon-to-carbon double bond, and at least one being terminated by an acyloxy radical of a saturated carboxylic acid, or carbonic acid, or of a haloformic acid

References

Informative references

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

Hydrolysed polymers of esters of unsaturated alcohols with saturated carboxylic acids or derivatives of such polymer	C08J 2329/00

C08J 2337/00

Characterised by the use of homopolymers or copolymers of compounds having one or more unsaturated aliphatic radicals, each having only one carbon-to-carbon double bond, and at least one being terminated by a heterocyclic ring containing oxygen; Derivatives of such polymers

References

Informative references

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

Cyclic esters of polyfunctional acids	C08J 2331/00
Cyclic anhydrides of unsaturated acids	C08J 2335/00

C08J 2345/00

Characterised by the use of homopolymers or copolymers of compounds having no unsaturated aliphatic radicals in side chain, and having one or more carbon-to-carbon double bonds in a carbocyclic or in a heterocyclic ring system; Derivatives of such polymers

References

Informative references

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

Cyclic esters of polyfunctional acids	C08J 2331/00
Cyclic anhydrides or imides	C08J 2335/00

C08J 2351/00

Characterised by the use of graft polymers in which the grafted component is obtained by reactions only involving carbon-to-carbon unsaturated bonds; Derivatives of such polymers

References

Informative references

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

Acrylonitrile-Butadiene-Styrene [ABS] polymers	C08J 2355/02

C08J 2361/00

Characterised by the use of condensation polymers of aldehydes or ketones; Derivatives of such polymers

References

Informative references

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

Characterised by the use of polyacetals containing polyoxymethylene sequences only	C08J 2359/00
Characterised by the use of polyamides obtained by reactions forming a carboxylic amide link in the main chain	C08J 2377/00

C08J 2361/20

Condensation polymers of aldehydes or ketones with only compounds containing hydrogen attached to nitrogen

References

Informative references

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

Condensation polymers of aldehydes or ketones with phenols only	C08J 2361/04

C08J 2367/00

Characterised by the use of polyesters obtained by reactions forming a carboxylic ester link in the main chain; Derivatives of such polymers

References

Informative references

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

Polyester-amides	C08J 2377/12
Polyester-imides	C08J 2379/08

C08J 2371/00

Characterised by the use of polyethers obtained by reactions forming an ether link in the main chain; Derivatives of such polymers

References

Informative references

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

Characterised by the use of polyacetals containing polyoxymethylene sequences only	C08J 2359/00
Characterised by the use of epoxy resins; Derivatives of epoxy resins	C08J 2363/00
Polythioethers; Polythioether-ethers	C08J 2381/02
Polysulfones; Polyethersulfones	C08J 2381/06

C08J 2377/00

Characterised by the use of polyamides obtained by reactions forming a carboxylic amide link in the main chain; Derivatives of such polymers

References

Informative references

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

Polyhydrazides; Polytriazoles; Polyamino-triazoles; Polyoxadiazoles	C08J 2379/06

Polyimides; Polyester-imides; Polyamide-imides; Polyamide acids or similar polyimide precursors	C08J 2379/08

C08J 2383/10

Block- or graft-copolymers containing polysiloxane sequences

References

Informative references

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

Grafted on to macromolecular compounds obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds	C08J 2351/08
Characterised by the use of block copolymers containing at least one sequence of a polymer obtained by reactions only involving carbon-to-carbon unsaturated bonds; Derivatives of such polymers	C08J 2353/00

C08J 2393/00

Characterised by the use of natural resins; Derivatives thereof

References

Informative references

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

Characterised by the use of cellulose, modified cellulose or cellulose derivatives	C08J 2301/00
Characterised by the use of starch, amylose or amylopectin or of their derivatives or degradation products	C08J 2303/00
Characterised by the use of polysaccharides or of their derivatives	C08J 2305/00
Characterised by the use of reclaimed rubber	C08J 2317/00

C08J 2397/00

Characterised by the use of lignin-containing materials

References

Informative references

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

Characterised by the use of cellulose, modified cellulose or cellulose derivatives	C08J 2301/00
Characterised by the use of polysaccharides or of their derivatives not provided for in groups C08J 2301/00 or C08J 2303/00	C08J 2305/00

C08J 2431/00

Characterised by the use of copolymers of compounds having one or more unsaturated aliphatic radicals, each having only one carbon-to-carbon double bond, and at least one being terminated by an acyloxy radical of a saturated carboxylic acid, or carbonic acid, or of a haloformic acid

References

Informative references

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

Characterised by the use of homopolymers or copolymers of compounds having one or more unsaturated aliphatic radicals, each having only one carbon-to-carbon double bond, and at least one being terminated by an alcohol, ether, aldehydo, ketonic, acetal, or ketal radical; Hydrolysed polymers of esters of unsaturated alcohols with saturated carboxylic acids; Derivatives of such polymer	C08J 2429/00

C08J 2437/00

Characterised by the use of homopolymers or copolymers of compounds having one or more unsaturated aliphatic radicals, each having only one carbon-to-carbon double bond, and at least one being terminated by a heterocyclic ring containing oxygen; Derivatives of such polymers

References

Informative references

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

Characterised by the use of copolymers of compounds having one or more unsaturated aliphatic radicals, each having only one carbon-to-carbon double bond, and at least one being terminated by an acyloxy radical of a saturated carboxylic acid, or carbonic acid, or of a haloformic acid	C08J 2431/00
Characterised by the use of homopolymers or copolymers of compounds having one or more unsaturated aliphatic radicals, each having only one carbon-to-carbon double bond, and at least one being terminated by a carboxyl radical, and containing at least one other carboxyl radical in the molecule, or of salts, anhydrides, esters, amides, imides or nitriles thereof; Derivatives of such polymers	C08J 2435/00

C08J 2445/00

Characterised by the use of homopolymers or copolymers of compounds having no unsaturated aliphatic radicals in side chain, and having one or more carbon-to-carbon double bonds in a carbocyclic or in a heterocyclic ring system; Derivatives of such polymers

References

Informative references

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

Characterised by the use of copolymers of compounds having one or more unsaturated aliphatic radicals, each having only one carbon-to-carbon double bond, and at least one being terminated by an acyloxy radical of a saturated carboxylic acid, or carbonic acid, or of a haloformic acid	C08J 2431/00
Characterised by the use of homopolymers or copolymers of compounds having one or more unsaturated aliphatic radicals, each having only one carbon-to-carbon double bond, and at least one being terminated by a carboxyl radical, and containing at least one other carboxyl radical in the molecule, or of salts, anhydrides, esters, amides, imides or nitriles thereof; Derivatives of such polymers	C08J 2435/00

C08J 2451/00

Characterised by the use of graft polymers in which the grafted component is obtained by reactions only involving carbon-to-carbon unsaturated bonds; Derivatives of such polymers

References

Informative references

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

Acrylonitrile-Butadiene-Styrene [ABS] polymers	C08J 2455/02

C08J 2461/00

Characterised by the use of condensation polymers of aldehydes or ketones; Derivatives of such polymers

References

Informative references

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

Characterised by the use of polyacetals containing polyoxymethylene sequences only	C08J 2459/00
Characterised by the use of polyamides obtained by reactions forming a carboxylic amide link in the main chain	C08J 2477/00

C08J 2461/20

Condensation polymers of aldehydes or ketones with only compounds containing hydrogen attached to nitrogen

References

Informative references

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

Condensation polymers of aldehydes or ketones with phenols only	C08J 2461/04

C08J 2467/00

Characterised by the use of polyesters obtained by reactions forming a carboxylic ester link in the main chain; Derivatives of such polymers

References

Informative references

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

Polyester-amides	C08J 2477/12
Polyimides; Polyester-imides; Polyamide-imides; Polyamide acids or similar polyimide precursors	C08J 2479/08

C08J 2471/00

Characterised by the use of polyethers obtained by reactions forming an ether link in the main chain; Derivatives of such polymers

References

Informative references

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

Characterised by the use of polyacetals containing polyoxymethylene sequences only	C08J 2459/00
Characterised by the use of epoxy resins; Derivatives of epoxy resins	C08J 2463/00
Polythioethers; Polythioether-ethers	C08J 2481/02
Polysulfones; Polyethersulfones	C08J 2481/06

C08J 2477/00

Characterised by the use of polyamides obtained by reactions forming a carboxylic amide link in the main chain; Derivatives of such polymers

References

Informative references

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

Polyhydrazides; Polytriazoles; Polyamino-triazoles; Polyoxadiazoles	C08J 2479/06
Polyimides; Polyester-imides; Polyamide-imides; Polyamide acids or similar polyimide precursors	C08J 2479/08

C08J 2483/10

Block- or graft-copolymers containing polysiloxane sequences

References

Informative references

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

Graft polymers or derivatives of such polymers grafted on to macromolecular compounds obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds	C08J 2451/08
Characterised by the use of block copolymers containing at least one sequence of a polymer obtained by reactions only involving carbon-to-carbon unsaturated bonds; Derivatives of such polymers	C08J 2453/00

C08J 2493/00

Characterised by the use of natural resins; Derivatives thereof

References

Informative references

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

Characterised by the use of cellulose, modified cellulose or cellulose derivatives	C08J 2401/00
Characterised by the use of starch, amylose or amylopectin or of their derivatives or degradation products	C08J 2403/00
Characterised by the use of polysaccharides or of their derivatives	C08J 2405/00
Characterised by the use of reclaimed rubber	C08J 2417/00

C08J 2497/00

Characterised by the use of lignin-containing materials

References

Informative references

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

Characterised by the use of cellulose, modified cellulose or cellulose derivatives	C08J 2401/00
Characterised by the use of starch, amylose or amylopectin or of their derivatives or degradation products	C08J 2403/00
Characterised by the use of polysaccharides or of their derivatives	C08J 2405/00