CHEMISTRY

C03 GLASS; MINERAL OR SLAG WOOL

C03C CHEMICAL COMPOSITION OF GLASSES, GLazes, OR VITREOUS ENAMELS; SURFACE TREATMENT OF GLASS; SURFACE TREATMENT OF FIBRES OR FILAMENTS MADE FROM GLASS, MINERALS OR SLAGS; JOINING GLASS TO GLASS OR OTHER MATERIALS

NOTES
1. This subclass covers compositions of polycrystalline fibres
2. This subclass does not cover the preparation of single-cristal fibres, which is covered by subclass C30B

WARNINGS
1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:
   - C03C 6/00 - C03C 6/10 covered by C03C 1/00 - C03C 1/105
   - C03C 10/02 - C03C 10/14 covered by C03C 10/00
   - C03C 13/02 covered by C03C 13/00
   - C03C 27/12 covered by B32B 17/00
2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

Chemical composition of glasses, glazes, or vitreous enamels

NOTE
In groups C03C 1/00 - C03C 14/00, the last place priority rule is applied, i.e. in the absence of an indication to the contrary, classification is made in the last appropriate place.

1/00 Ingredients generally applicable to manufacture of glasses, glazes, or vitreous enamels
1/002 . [Use of waste materials, e.g. slags]
1/004 . {Refining agents (refining C03B 5/225)}
1/006 . [to produce glass through wet route]
1/008 . [for the production of films or coatings]
1/02 . Pretreated ingredients
1/022 . . [Purification of silica sand or other minerals]
1/024 . . [Chemical treatment of cullet or glass fibres]
1/026 . . [Pelletisation or prereacting of powdered raw materials (apparatus or methods C03B 1/02)]
1/028 . . [Ingredients allowing introduction of lead or other easily volatile or dusty compounds]
1/04 . Opacifiers, e.g. fluorides or phosphates; Pigments
1/06 . . to produce non-uniformly pigmented, e.g. speckled, marbled, or veined products
1/08 . to produce crackled effects
1/10 . to produce uniformly-coloured transparent products
1/105 . . [by the addition of colorants to the forehearth of the glass melting furnace]

3/00 Glass compositions

NOTE
If silica is specified as being present in a percent range covered by two of the groups C03C 3/06, C03C 3/062 or C03C 3/076, classification is made in both groups. If the range is covered by the three groups, classification is made in group C03C 3/04 itself.

3/04 . containing silica

3/045 . . [Silicon oxycarbide, oxynitride or oxycarbonitride glasses]
3/06 . . with more than 90% silica by weight, e.g. quartz
   (C03C 3/045 takes precedence)
3/061 . . . [by leaching a soluble phase and consolidating]
3/062 . . with less than 40% silica by weight
3/064 . . . containing boron
3/066 . . . . containing zinc
3/068 . . . . containing rare earths
3/07 . . . containing lead
3/072 . . . . containing boron
3/074 . . . . containing zinc
3/0745 . . . . . containing more than 50% lead oxide, by weight
3/076 . . . with 40% to 90% silica, by weight (C03C 3/045 takes precedence)
3/078 . . . containing an oxide of a divalent metal, e.g. an oxide of zinc
3/083 . . . containing aluminium oxide or an iron compound
3/085 . . . containing an oxide of a divalent metal
Chemical composition of glasses, glazes, or vitreous enamels

4/00 Compositions for glass with special properties

NOTE
When classifying in group C03C 4/00, classification is also made in the appropriate groups of group C03C 3/00 according to the glass composition.

3/087 . . . . containing calcium oxide, e.g. common sheet or container glass
3/089 . . . . containing boron
3/091 . . . . containing aluminium
3/093 . . . . containing zinc or zirconium
3/095 . . . . containing rare earths
3/097 . . . . containing phosphorus, niobium or tantalum
3/102 . . . . containing lead
3/105 . . . . containing aluminium
3/108 . . . . containing boron
3/11 . . . . containing halogen or nitrogen
3/111 . . . . [containing nitrogen]
3/112 . . . . containing fluoride
3/115 . . . . containing boron
3/118 . . . . containing aluminium
3/12 . Silica-free oxide glass compositions
3/122 . . . . [containing oxides of As, Sb, Bi, Mo, W, V, Te as glass formers]
3/125 . . . . [containing aluminium as glass former]
3/127 . . . . [containing TiO₂ as glass former]
3/14 . . . . containing boron
3/142 . . . . [containing lead]
3/145 . . . . containing aluminium or beryllium
3/15 . . . . containing rare earths
3/155 . . . . containing zirconium, titanium, tantalum or niobium
3/16 . containing phosphorus
3/17 . . . . containing aluminium or beryllium
3/19 . . . . containing boron
3/21 . . . . containing titanium, zirconium, vanadium, tungsten or molybdenum
3/23 . containing halogen and at least one oxide, e.g. oxide of boron
3/247 . . . . containing fluorine and phosphorus
3/253 . . . . containing germanium
3/32 . Non-oxide glass compositions, e.g. binary or ternary halides, sulfides or nitrides of germanium, selenium or tellurium
3/321 . . . . [Chalcogenide glasses, e.g. containing S, Se, Te]
3/323 . . . . [containing halogen, e.g. chalcophalide glasses]
3/325 . . . . [Fluoride glasses]
3/326 . . . . [containing beryllium]
3/328 . . . . [Nitride glasses]

4/00 Compositions for glass with special properties

NOTE
When classifying in group C03C 4/00, classification is also made in the appropriate groups of group C03C 3/00 according to the glass composition.

4/0007 . . . [for biologically-compatible glass]
4/0014 . . . [Biodegradable glass]
4/0021 . . . [for dental use]
4/0028 . . . [for crystal glass, e.g. lead-free crystal glass]
4/0035 . . . [for soluble glass for controlled release of a compound incorporated in said glass]
4/0042 . . . [for glass comprising or including particular isopoles]
4/005 . . . [for opaline glass]
4/0057 . . . [for ultrasonic delay lines glass]
4/0064 . . . [for self-destructing glass (C03C 4/0014 takes precedence)]

4/0071 . . . [for laserable glass]
4/0078 . . . [for glass for dosimeters]
4/0085 . . . [for UV-transmitting glass]
4/0092 . . . [for glass with improved high visible transmittance, e.g. extra-clear glass]
4/02 . . . . [for coloured glass]
4/04 . . . . [for photosensitive glass]
4/06 . . . . [for phototropic or photochromic glass]
4/065 . . . . [for silver-halide free photochromic glass]
4/08 . . . . [for glass selectively absorbing radiation of specified wave lengths]
4/082 . . . . [for infra-red absorbing glass]
4/085 . . . . [for ultra-violet absorbing glass]
4/087 . . . . [for X-rays absorbing glass]
4/10 . . . . [for infra-red transmitting glass]
4/12 . . . . [for luminescent glass; for fluorescent glass]
4/14 . . . . [for electro-conductive glass]
4/16 . . . . [for dielectric glass]
4/18 . . . . [for ion-sensitive glass]
4/20 . . . . [for chemical resistant glass]

8/00 Enamels; Glazes (cold glazes for ceramics (C04B 41/48)); Fusion seal compositions being frit compositions having non-frit additions

8/02 . . . . [Frit compositions, i.e. in a powdered or comminuted form]
8/04 . . . . containing zinc
8/06 . . . . containing halogen
8/08 . . . . containing phosphorus
8/10 . . . . containing lead
8/12 . . . . containing titanium or zirconium
8/14 . . . . [Glass frit mixtures having non-frit additions, e.g. opacifiers, colorants, mill-additions]
8/16 . . . . with vehicle or suspending agents, e.g. slip
8/18 . . . . containing free metals
8/20 . . . . containing titanium compounds; containing zirconium compounds
8/22 . . . . containing two or more distinct frits having different compositions
8/24 . . . . [Fusion seal compositions being frit compositions having non-frit additions, i.e. for use as seals between dissimilar materials, e.g. glass and metal; Glass solders]
8/245 . . . . [containing more than 50% lead oxide, by weight]

10/00 Devitrified glass ceramics, i.e. glass ceramics having a crystalline phase dispersed in a glassy phase and constituting at least 50% by weight of the total composition

10/009 . . . . [containing silica as main constituent]
10/0018 . . . . [containing SiO₂, Al₂O₃ and monovalent metal oxide as main constituents]
10/0027 . . . . [containing SiO₂, Al₂O₃, Li₂O as main constituents]
10/0036 . . . . [containing SiO₂, Al₂O₃ and a divalent metal oxide as main constituents]
10/0045 . . . . [containing SiO₂, Al₂O₃ and MgO as main constituents]
10/0054 . . . . [containing PbO, SnO₂, B₂O₃]
10/0063 . . . . [containing waste materials, e.g. slags]
10/0072 . . . . [having a ferro-electric crystal phase]
10/0081 . . . . [having a magnetic crystal phase]
10/009 . . . . [having a superconducting crystal phase]
10/16 . Halogen containing crystalline phase

11/00 Multi-cellular glass (\textit{Porous or hollow glass or glass particles})
11/002 . (Hollow glass particles)
11/005 . (obtained by leaching after a phase separation step)
11/007 . (Foam glass, e.g. obtained by incorporating a blowing agent and heating)

12/00 Powdered glass (C03C 8/02 takes precedence); Bead compositions
12/02 . Reflective beads

13/00 Fibre or filament compositions (manufacture of fibres or filaments C03B 37/00)
13/001 . [Alkali-resistant fibres]
13/002 . [containing zirconium]
13/003 . [Conducting or semi-conducting fibres]
13/005 . [obtained by leaching of a soluble phase and consolidation]
13/006 . [Glass-ceramics fibres]
13/007 . [containing zirconium]
13/008 . [Polycrystalline optical fibres]
13/04 . Fibre optics, e.g. core and clad fibre compositions (light guides G02B 6/00)
13/041 . [Non-oxide glass compositions]
13/042 . [Fluoride glass compositions]
13/043 . [Chalcogenide glass compositions]
13/044 . . . [containing halogen, e.g. chalcolahide glass compositions]
13/045 . . . [Silica-containing oxide glass compositions]
13/046 . . . [Multicomponent glass compositions]
13/047 . . . [containing deuterium]
13/048 . . . [Silica-free oxide glass compositions]
13/06 . Mineral fibres, e.g. slag wool, mineral wool, rock wool

14/00 Glass compositions containing a non-glass component, e.g. compositions containing fibres, filaments, whiskers, platelets, or the like, dispersed in a glass matrix (devitrified glass ceramics C03C 10/00)
14/002 . [the non-glass component being in the form of fibres, filaments, yarns, felts or woven material]
14/004 . [the non-glass component being in the form of particles or flakes]
14/006 . [the non-glass component being in the form of microcrystallites, e.g. of optically or electrically active material]
14/008 . [the non-glass component being in molecular form]

Surface treatment of glass: Surface treatment of fibres or filaments from glass, minerals or slags

15/00 Surface treatment of glass, not in the form of fibres or filaments, by etching (etching or surface-brightening compositions, in general C09K 13/00)
15/02 . for making a smooth surface
15/025 . . . [for polishing crystal glass, i.e. lead glass]

17/00 Surface treatment of glass, not in the form of fibres or filaments, by coating (optical coatings of optical elements G02B 1/10)
17/001 . (General methods for coating; Devices therefor)
17/002 . . . [for flat glass, e.g. float glass]
17/003 . . . [for hollow ware, e.g. containers]

17/004 . . . . . . [Coating the inside]
17/005 . . . . . . [Coating the outside]
17/006 . . . . . . [with materials of composite character]
17/007 . . . . . . [containing a dispersed phase, e.g. particles, fibres or flakes, in a continuous phase]
17/008 . . . . . . [comprising a mixture of materials covered by two or more of the groups C03C 17/02, C03C 17/06, C03C 17/22 and C03C 17/28]
17/009 . . . . . . [Mixtures of organic and inorganic materials, e.g. ormosils and ormocers]
17/00 . . . . . . [with glass (C03C 17/34, C03C 17/44 takes precedence)]
17/04 . . . . . . [by fritting glass powder]
17/06 . . . . . . [with metals (C03C 17/34, C03C 17/44 takes precedence)]
17/09 . . . . . . [by deposition from the vapour phase]
17/10 . . . . . . [by deposition from the liquid phase]
17/22 . . . . . . [with other inorganic material (C03C 17/34, C03C 17/44 takes precedence)]
17/225 . . . . . . [Nitrides]
17/23 . . . . . . [Oxides (C03C 17/02 takes precedence)]
17/245 . . . . . . [by deposition from the vapour phase]
17/2453 . . . . . . . . . . . [Coating containing SnO2]
17/2456 . . . . . . . . . . . [Coating containing TiO2]
17/25 . . . . . . . . . . . [by deposition from the liquid phase]
17/253 . . . . . . . . . . . [Coating containing SnO2]
17/256 . . . . . . . . . . . [Coating containing TiO2]
17/27 . . . . . . . . . . . [by oxidation of a coating previously applied]
17/28 . . . . . . . . . . . [with organic material (C03C 17/34, C03C 17/44 takes precedence)]
17/30 . . . . . . . . . . . [with silicon-containing compounds]
17/32 . . . . . . . . . . . [with synthetic or natural resins (C02C 17/30 takes precedence)]
17/322 . . . . . . . . . . . [Polyurethanes or polysicycianates]
17/324 . . . . . . . . . . . [Polyesters]
17/326 . . . . . . . . . . . [Epoxy resins]
17/328 . . . . . . . . . . . [Polyolefins]
17/34 . . . . . . . . . . . [with at least two coatings having different compositions (C03C 17/44 takes precedence)]
17/3405 . . . . . . . . . . . [with at least two coatings of organic materials (C03C 17/36, C03C 17/42 takes precedence)]
17/3411 . . . . . . . . . . . [with at least two coatings of inorganic materials (C03C 17/36, C03C 17/42 takes precedence)]
17/3417 . . . . . . . . . . . [all coatings being oxide coatings]
17/3423 . . . . . . . . . . . [at least one of the coatings comprising a suboxide]
17/3429 . . . . . . . . . . . [at least one of the coatings being a non-oxide coating]
17/3435 . . . . . . . . . . . [comprising a nitride, oxyxnitride, boronitrde or carbonitrde]
17/3441 . . . . . . . . . . . [comprising carbon, a carbide or oxyxcarbide]
17/3447 . . . . . . . . . . . [comprising a halide]
17/3452 . . . . . . . . . . . [comprising a fluoride]
17/3458 . . . . . . . . . . . [comprising a chloride]
17/3464 . . . . . . . . . . . [comprising a chalcogenide]
17/347 . . . . . . . . . . . [comprising a sulfide or oxyxulfide]
17/3476 . . . . . . . . . . . [comprising a selenide or telluride]
17/3482 . . . . . . . . . . . [comprising silicon, hydrogenated silicon or a silicide]
17/3488 . . . . . . . . . . . [comprising a boride or phosphide]
17/3494 . . . . . . . . . . . [comprising other salts, e.g. sulfate, phosphate]
Surface treatment of glass; Surface treatment of fibres or filaments from glass, minerals or slags

17/36 . . . at least one coating being a metal
17/3602 . . . [the metal being present as a layer]
17/3605 . . . [Coatings of the type glass/metal/inorganic compound]
17/3607 . . . [Coatings of the type glass/inorganic compound/metal]
17/361 . . . [Coatings of the type glass/metal/inorganic compound/metal/others]
17/3613 . . . [Coatings of type glass/inorganic compound/metal/inorganic compound/other]
17/3615 . . . [Coatings of the type glass/metal/others]
17/3618 . . . [Coatings of type glass/inorganic compound/other inorganic layers, at least one layer being non-metallic]
17/3621 . . . [one layer at least containing a fluoride]
17/3623 . . . [one layer at least containing a chloride, bromide or iodide]
17/3626 . . . [one layer at least containing a nitride, oxynitride, boroninitride or carboninitride]
17/3628 . . . [one layer at least containing a sulphide]
17/3631 . . . [one layer at least containing a selenide or telluride]
17/3634 . . . [one layer at least containing carbon, a carbide or oxycarbide]
17/3636 . . . [one layer at least containing silicon, hydrogenated silicon or a silicide]
17/3639 . . . [Multilayers containing at least two functional metal layers]
17/3642 . . . [the multilayer coating containing a metal layer]
17/3644 . . . [the metal being silver]
17/3647 . . . [in combination with other metals, silver being more than 50%]
17/3649 . . . [made of metals other than silver]
17/3652 . . . [the coating stack containing at least one sacrificial layer to protect the metal from oxidation]
17/3655 . . . [the multilayer coating containing at least one conducting layer]
17/3657 . . . [the multilayer coating having optical properties]
17/366 . . . [Low-emissivity or solar control coatings]
17/3663 . . . [specially adapted for use as mirrors]
17/3665 . . . [specially adapted for use as photomask]
17/3668 . . . [the multilayer coating having electrical properties]
17/3671 . . . [specially adapted for use as electrodes]
17/3673 . . . [specially adapted for use in heating devices for rear window of vehicles]
17/3676 . . . [specially adapted for use as electromagnetic shield]
17/3678 . . . [specially adapted for use in solar cells]
17/3681 . . . [the multilayer coating being used in glazing, e.g. windows or windscreen]
17/3684 . . . [the multilayer coating being used for decoration purposes]
17/3686 . . . [the multilayer coating being used for ovens]
17/3689 . . . [one oxide layer being obtained by oxidation of a metallic layer]
17/3692 . . . [one metallic layer being obtained by reduction of an oxide layer]
17/3694 . . . [one layer having a composition gradient through its thickness]
17/3697 . . . [one metallic layer at least being obtained by electroless plating]
17/38 . . . at least one coating being a coating of an organic material
17/40 . . . all coatings being metal coatings
17/42 . . . at least one coating of an organic material and at least one non-metallic coating
17/44 . . . Lustring

19/00 Surface treatment of glass, not in the form of fibres or filaments, by mechanical means (sand-blasting, grinding, or polishing glass B24)
21/00 Treatment of glass, not in the form of fibres or filaments, by diffusing ions or metals in the surface
21/001 . . . [in liquid phase, e.g. molten salts, solutions]
21/002 . . . [to perform ion-exchange between alkali ions (C03C 21/005 takes precedence)]
21/003 . . . [under application of an electrical potential difference]
21/005 . . . [to introduce in the glass such metals or metallic ions as Ag, Cu]
21/006 . . . [to perform an exchange of the type Xn+ ----> nH +]
21/007 . . . [in gaseous phase]
21/008 . . . [in solid phase, e.g. using pastes, powders]
23/00 Other surface treatment of glass not in the form of fibres or filaments
23/0005 . . . [by irradiation]
23/001 . . . [by infra-red light]
23/0015 . . . [by visible light]
23/002 . . . [by ultra-violet light]
23/0025 . . . [by a laser beam]
23/003 . . . [by X-rays]
23/0035 . . . [by gamma-rays]
23/004 . . . [by electrons, protons or alpha-particles]
23/0045 . . . [by neutrons]
23/005 . . . [by atoms]
23/0055 . . . [by ion implantation]
23/006 . . . [by plasma or corona discharge]
23/0065 . . . [by microwave radiation]
23/007 . . . [by thermal treatment]
23/0075 . . . [Cleaning of glass (specially adapted to plate glass B08B 11/00)]
23/008 . . . [comprising a lixiviation step]
23/0085 . . . [Drying; Dehydroxylation]
23/009 . . . [Poling glass]
23/0095 . . . [Solution impregnating; Solution doping; Molecular stuffing, e.g. of porous glass (in manufacture of preforms C03B 37/012)]

25/00 Surface treatment of fibres or filaments made from glass, minerals or slags

NOTES
1. In groups C03C 25/24 - C03C 25/48, the last place priority rule is applied, i.e. at each hierarchical level, in the absence of an indication to the contrary, classification is made in the last appropriate place.
2. A coating composition, i.e. a mixture of two or more constituents, is classified in the last of groups
Surface treatment of glass; Surface treatment of fibres or filaments from glass, minerals or slags

C03C 25/00

(continued)

3. When classifying in groups C03C 25/24 - C03C 25/42, any individual constituent, i.e. compound or ingredient of a coating composition, which is not identified by the classification according to Note (2), and which itself is determined to be novel and non-obvious, must also be classified in the last appropriate place in groups C03C 25/24 - C03C 25/42.

4. When classifying in groups C03C 25/24 - C03C 25/42, any individual constituent of a coating composition which is not identified by the classification according to Note (2) or (3), and which is considered to represent information of interest for search, may also be classified in groups C03C 25/24 - C03C 25/42. This can, for example, be the case when it is considered of interest to enable searching of coating compositions using a combination of classification symbols. Such non-obligatory classification should be given as "additional information".

5. When classifying in groups C03C 25/1025 - C03C 25/1095, the composition of the coatings must also be classified in one or more of groups C03C 25/24 - C03C 25/54, according to Notes (1) to (4).

6. When classifying in group C03C 25/48, any individual coating which itself is determined to be novel and non-obvious must also be classified in groups C03C 25/24 - C03C 25/42, according to Notes (1) to (4).

25/002 . . . Thermal treatment
25/005 . . . by mechanical means
25/007 . . . Impregnation by solution; Solution doping or molecular stuffing of porous glass
25/10 . . . Coating
25/1025 . . . to obtain fibres used for reinforcing cement-based products
25/103 . . . [Organic coatings]
25/1035 . . . [Inorganic coatings]
25/104 . . . to obtain optical fibres
25/1045 . . . [with organic coatings or claddings] (Frozen)

WARNING

Group C03C 25/1045 is no longer used for the classification of documents as of January 1, 2018. The content of this group is being reclassified into groups C03C 25/105, C03C 25/106, and C03C 25/1065. All groups listed in this Warning should be considered in order to perform a complete search.

25/105 . . . Organic claddings

WARNING

Group C03C 25/105 is incomplete pending reclassification of documents from group C03C 25/1045. Groups C03C 25/1045 and C03C 25/105 should be considered in order to perform a complete search.

25/106 . . . Single coatings

WARNING

Group C03C 25/106 is incomplete pending reclassification of documents from groups C03C 25/1045 and C03C 25/1055. Groups C03C 25/1045, C03C 25/1055, and C03C 25/106 should be considered in order to perform a complete search.

25/1061 . . . [Inorganic coatings]
25/1062 . . . [Carbon]
25/1063 . . . [Metals]
25/1065 . . . Multiple coatings

WARNING

Group C03C 25/1065 is incomplete pending reclassification of documents from groups C03C 25/1045 and C03C 25/1055. Groups C03C 25/1045, C03C 25/1055, and C03C 25/1065 should be considered in order to perform a complete search.

25/1068 . . . [Inorganic coatings]
25/109 . . . [with at least one organic coating and at least one inorganic coating]
25/1095 . . . to obtain coated fabrics
25/12 . . . General methods of coating; Devices therefor
25/14 . . . Spraying
25/143 . . . onto continuous fibres

WARNING

Group C03C 25/143 is incomplete pending reclassification of documents from group C03C 25/146. Groups C03C 25/146 and C03C 25/143 should be considered in order to perform a complete search.

25/146 . . . onto fibres in suspension in a gaseous medium (C03C 25/143 takes precedence)

WARNING

Group C03C 25/146 is impacted by reclassification into group C03C 25/143. Groups C03C 25/146 and C03C 25/143 should be considered in order to perform a complete search.

25/16 . . . Dipping
25/18 . . . Extrusion
25/20 . . . Contacting the fibres with applicators, e.g. rolls
25/22 . . . Deposition from the vapour phase
Surface treatment of glass; Surface treatment of fibres or filaments from glass, minerals or slags

25/223 . . . . . . by chemical vapour deposition or pyrolysis
25/226 . . . . . . by sputtering
25/24 . . Coatings containing organic materials
25/25 . . . . . . Non-macromolecular compounds
25/255 . . . . . . Oils, waxes, fats or derivatives thereof
25/26 . . . . . . Macromolecular compounds or prepolymer
25/27 . . . . . . Rubber latex
25/28 . . . . . . obtained by reactions involving only carbon-to-carbon unsaturated bonds
25/285 . . . . . . Acrylic resins
25/30 . . . . . . Polyolefins
25/305 . . . . . . Polyfluoroolefins
25/32 . . . . . . obtained otherwise than by reactions involving only carbon-to-carbon unsaturated bonds
25/321 . . . . . . Starch; Starch derivatives
25/323 . . . . . . Polysters, e.g. alkyd resins
25/325 . . . . . . Polycarbonates
25/326 . . . . . . Polycureas; Polyurethanes
25/328 . . . . . . Polyamides
25/34 . . . . . . Condensation polymers of aldehydes, e.g. with phenols, ureas, melamines, amides or amines
25/36 . . . . . . Epoxy resins
25/38 . . . . . . Organo-metal compounds
25/40 . . . . . . Organo-silicon compounds
25/42 . . . . . . Coatings containing inorganic materials
25/44 . . . . . . Carbon, e.g. graphite
25/46 . . . . . . Metals
25/465 . . . . . . Coatings containing composite materials
25/47 . . . . . . containing particles, fibres or flakes, e.g. in a continuous phase
25/475 . . . . . . containing colouring agents
25/48 . . . . . . with two or more coatings having different compositions [(C03C 25/104 takes precedence)]
25/50 . . . . . . Coatings containing organic materials only
25/52 . . . . . . Coatings containing inorganic materials only
25/54 . . . . . . Combinations of one or more coatings containing organic materials only with one or more coatings containing inorganic materials only
25/60 . . . . . . by diffusing ions or metals into the surface
25/601 . . . . . . in the liquid phase, e.g. using solutions or molten salts
25/602 . . . . . . to perform ion-exchange between alkali ions (C03C 25/605 takes precedence)
25/603 . . . . . . under application of an electrical potential difference
25/605 . . . . . . to introduce metals or metallic ions, e.g. silver or copper, into the glass
25/606 . . . . . . [to perform an exchange of the type Xn+ --- >nH+]
25/607 . . . . . . in the gaseous phase
25/608 . . . . . . in the solid phase, e.g. using pastes or powders
25/62 . . . . . . by application of electric or wave energy (for drying or dehydration C03C 25/64); by particle radiation or ion implantation
25/6206 . . . . . . Electromagnetic waves
25/6208 . . . . . . Laser
25/621 . . . . . . Microwaves
25/6213 . . . . . . Infrared
25/622 . . . . . . Visible light
25/6226 . . . . . . Ultraviolet
25/624 . . . . . . X-Rays
25/6246 . . . . . . Gamma rays
25/626 . . . . . . Particle radiation or ion implantation
25/6266 . . . . . . Electrons, protons or alpha particles
25/6273 . . . . . . Neutrons
25/628 . . . . . . Atoms
25/6286 . . . . . . Ion implantation
25/6293 . . . . . . Plasma or corona discharge
25/64 . . . . . . Drying; Dehydration; Dehydroxylation
25/66 . . . . . . Chemical treatment, e.g. leaching, acid or alkali treatment (dehydroxylation C03C 25/64)
25/68 . . . . . . by etching
25/70 . . . . . . Cleaning, e.g. for reuse (C03C 25/62 -C03C 25/66 take precedence)

Joining glass to glass or to other materials (fusion seal compositions C03C 8/24)

NOTE
Layered products classified in groups C03C 27/00 or C03C 29/00 are also classified in subclass B32B.

27/00 Joining pieces of glass to pieces of other inorganic material; Joining glass to glass other than by fusing (C03C 17/00 takes precedence; layered structures comprising at least one glass sheet B32B 17/00; wired glass C03B; joining glass to ceramics C04)
27/005 . . . . . . { with compositions containing more than 50% lead oxide by weight}
27/01 . . . . . . by fusing glass directly to metal
27/04 . . . . . . Joining glass to metal by means of an interlayer
27/042 . . . . . . { consisting of a combination of materials selected from glass, glass-ceramic or ceramic material with metals, metal oxides or metal salts}
27/044 . . . . . . { of glass, glass-ceramic or ceramic material only}
27/046 . . . . . . { of metals, metal oxides or metal salts only}
27/048 . . . . . . { consisting of an adhesive specially adapted for that purpose}
27/06 . . . . . . Joining glass to glass by processes other than fusing (fusing C03B 23/20; units for use as elements for closing wall or like openings and comprising two or more parallel glass panes in spaced relationship, the panes being permanently secured together E06B 3/06)
27/08 . . . . . . with the aid of intervening metal
27/10 . . . . . . with the aid of adhesive specially adapted for that purpose

29/00 Joining metals with the aid of glass

2201/00 Glass compositions
2201/02 . . . . Pure silica glass, e.g. pure fused quartz
2201/06 . . . . Doped silica-based glasses
2201/08 . . . . containing boron or halide
2201/10 . . . . containing boron (C03C 2201/14 takes precedence)
2201/11 . . . . containing chlorine
2201/12 . . . . containing fluorine (C03C 2201/14 takes precedence)
2201/14 . . . . containing boron and fluorine
2201/20 . . . . containing non-metals other than boron or halide
After-treatment

Gas-phase processes

- Wet processes, e.g. sol-gel process
- Melting processes
- Quartz glass containing organic material
- Containing aluminium

Heat-treatment

- Using silicon halides as starting materials
- Gel impregnation
- Adding silica powder
- Using alkoxides
- Functional groups, e.g. vinyl, glycidyl

Additives

- Catalysts
- Oxides

Catalysts

- Using colloidal silica sols
- Using alkali silicate solutions
- Using alkoxides
- The alkoxydies containing other organic groups, e.g. alkyl groups
- Functional groups, e.g. vinyl, glycidyl

Production processes

2203/10 Melting processes
2203/20 Wet processes, e.g. sol-gel process
2203/22 Using colloidal silica sols
2203/24 Using alkali silicate solutions
2203/26 Using alkoxides
2203/27 The alkoxydies containing other organic groups, e.g. alkyl groups
2203/28 Functional groups, e.g. vinyl, glycidyl
2203/30 Additives
2203/32 Catalysts
2203/34 Adding silica powder
2203/36 Gel impregnation
2203/40 Gas-phase processes
2203/42 Using silicon halides as starting materials
2203/44 Chlorine containing
2203/46 Fluorine containing
2203/50 After-treatment
2203/52 Heat-treatment
2203/54 In a dopant containing atmosphere

Nature of the non-vitreous component

- Oxides
- Other specific oxides
- Mixtures

Compositions applicable for the manufacture of vitreous enamels or glazes

- Glasses, glazes or enamels
- Compositions specially applicable for the manufacture of vitreous enamels

Compositions specially applicable for the manufacture of vitreous glazes

- Glasses, glazes or enamels
- Compositions specially applicable for the manufacture of vitreous enamels

Glass fibres or filaments

- Biodegradable glass fibres
- Dual fibres

Nature of the non-vitreous component

- Fibres; Filaments; Yarns; Felts; Woven material
- Surface treated, e.g. coated
- Particles; Flakes
- Surface treated, e.g. coated
- Whiskers ss
- Surface treated, e.g. coated
- Metals
- Superconducting materials
- Polymers
- Waste material, e.g. to be disposed of
- Microcrystallites, e.g. of optically or electrically active material
- In molecular form (for molecular composites)
- Glass-ceramics matrix
- Methods of making the composites
- Comprising a sol-gel process
- Comprising an impregnation by molten glass step

Coatings on glass

- Materials for coating a single layer on glass
- Oxides
- SnO₂
- TiO₂
- SiO₂
- Al₂O₃
- In₂O₃
- ZnO
- FeOₓ, CoOₓ, NiOₓ
- V₂O₅, Nb₂O₅, Ta₂O₅
- CrOₓ, MoOₓ, WOₓ
- ZrO₂
- Other specific oxides
- Mixtures
C03C

Methods for coating glass

2218/00

2218/10 . Deposition methods
2218/11 . from solutions or suspensions
2218/111 . by dipping, immersion
2218/112 . by spraying
2218/113 . by sol-gel processes
2218/114 . by brushing, pouring or doctorblading
2218/115 . electro-enhanced deposition
2218/116 . by spin-coating, centrifugation
2218/117 . by ultrasonic methods
2218/118 . by roller-coating
2218/119 . by printing
2218/12 . from melts
2218/15 . from the vapour phase
2218/151 . by vacuum vaporization
2218/152 . by CVD
2218/1525 . by atmospheric CVD
2218/153 . by plasma-enhanced CVD
2218/154 . by sputtering
2218/155 . by reactive sputtering
2218/156 . by magnetron sputtering
2218/17 . from a solid phase
2218/30 . Aspects of methods for coating glass not covered above
2218/31 . Pre-treatment
2218/32 . After-treatment
2218/322 . Oxidation
2218/324 . De-oxidation
2218/326 . Nitriding
2218/328 . Partly or completely removing a coating
2218/33 . by etching
2218/335 . Reverse coating
2218/34 . Masking
2218/345 . Surface crystallisation
2218/35 . Exuding
2218/355 . Temporary coating

NOTE

This code is only to be used in combination with C03C classification symbols having the +IDT notation.
2218/36 . . Underside coating of a glass sheet
2218/365 . . Coating different sides of a glass substrate