CPC COOPERATIVE PATENT CLASSIFICATION

C CHEMISTRY; METALLURGY

(NOTES omitted)

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 polycristalline 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

3/04 . containing silica

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.

3/045 . . {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

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 fluorine
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 TiO_2 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. chalcohalide 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 isotopes}
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; 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

10/0009 . {containing silica as main constituent}
10/0018 . {containing SiO_2, Al_2O_3 and monovalent metal oxide as main constituents}
10/0027 . . {containing SiO_2, Al_2O_3, Li_2O as main constituents}
10/0036 . {containing SiO_2, Al_2O_3 and a divalent metal oxide as main constituents}
10/0045 . . {containing SiO_2, Al_2O_3 and MgO as main constituents}
10/0054 . {containing PbO, SnO_2, B_2O_3}
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 {; 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. chalcohalide 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}
17/02 . with glass (C03C 17/34, C03C 17/44 take precedence)
17/04 . . by fritting glass powder
17/06 . with metals (C03C 17/34, C03C 17/44 take 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 take precedence)
17/225 . . {Nitrides}
17/23 . . Oxides (C03C 17/02 takes precedence)
17/245 . . . by deposition from the vapour phase
17/2453 . . . . {Coating containing SnO_2}
17/2456 . . . . {Coating containing TiO_2}
17/25 . . . by deposition from the liquid phase
17/253 . . . . {Coating containing SnO_2}
17/256 . . . . {Coating containing TiO_2}
17/27 . . . by oxidation of a coating previously applied
17/28 . with organic material (C03C 17/34, C03C 17/44 take precedence)
17/30 . . with silicon-containing compounds
17/32 . . with synthetic or natural resins (C03C 17/30 takes precedence)
17/322 . . . {Polyurethanes or polyisocyanates}
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 take precedence)}
17/3411 . . {with at least two coatings of inorganic materials (C03C 17/36, C03C 17/42 take 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, oxynitride, boronitride or carbonitride}
17/3441 . . . . {comprising carbon, a carbide or oxycarbide}
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 oxysulfide}
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}

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/inorganic compound/other}
17/3613 . . . . {Coatings of type glass/inorganic compound/ metal/inorganic compound/metal/other}
17/3615 . . . . {Coatings of the type glass/metal/other inorganic layers, at least one layer being non-metallic}
17/3618 . . . . {Coatings of type glass/inorganic compound/ other inorganic layers, at least one layer being 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, boronitride or carbonitride}
17/3628 . . . . {one layer at least containing a sulfide}
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 windscreens}
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-metal 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

C03C 25/00 (continued)

C03C 25/25 - C03C 25/42 that provides for at least one of these constituents.

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
25/105 . . . Organic claddings
25/106 . . . Single coatings
25/1061 . . . . {Inorganic coatings}
25/1062 . . . . . {Carbon}
25/1063 . . . . . {Metals}
25/1065 . . . Multiple coatings
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
25/146 . . . . onto fibres in suspension in a gaseous medium (C03C 25/143 takes precedence)
25/16 . . . Dipping
25/18 . . . Extrusion
25/20 . . . Contacting the fibres with applicators, e.g. rolls
25/22 . . . Deposition from the vapour phase
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 prepolymers
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 . . . . . Polyesters, e.g. alkyd resins
25/325 . . . . . Polycarbonates
25/326 . . . . . Polyureas; 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}
27/02 . 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 3/66)
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
2201/21 . . . containing molecular hydrogen
2201/22 . . . containing deuterium
2201/23 . . . containing hydroxyl groups
2201/24 . . . containing nitrogen, e.g. silicon oxy-nitride glasses
2201/26 . . . containing carbon
2201/28 . . . containing phosphorus
2201/30 . . containing metals
2201/31 . . . containing germanium
2201/32 . . . containing aluminium (C03C 2201/36 takes precedence)
2201/34 . . . containing rare earth metals (C03C 2201/36 takes precedence)
2201/3405 . . . . Scandium
2201/3411 . . . . Yttrium
2201/3417 . . . . Lanthanum
2201/3423 . . . . Cerium
2201/3429 . . . . Praseodymium
2201/3435 . . . . Neodymium
2201/3441 . . . . Samarium
2201/3447 . . . . Europium
2201/3452 . . . . Gadolinium
2201/3458 . . . . Terbium
2201/3464 . . . . Dysprosium
2201/347 . . . . Holmium
2201/3476 . . . . Erbium
2201/3482 . . . . Thulium
2201/3488 . . . . Ytterbium
2201/3494 . . . . Lutetium
2201/36 . . . . containing rare earth metals and aluminium, e.g. Er-Al co-doped
2201/40 . . . containing transition metals other than rare earth metals, e.g. Zr, Nb, Ta or Zn
2201/42 . . . . containing titanium
2201/50 . . . containing alkali metals
2201/54 . . . containing beryllium, magnesium or alkaline earth metals
2201/58 . . . containing metals in non-oxide form, e.g. CdSe
2201/60 . containing organic material
2201/80 . containing bubbles or microbubbles, e.g. opaque quartz glass

2203/00 **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 alkoxides 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

2204/00 **Glasses, glazes or enamels with special properties**

2204/02 . Antibacterial glass, glaze or enamel
2204/04 . Opaque glass, glaze or enamel
2204/06 . . opacified by gas
2204/08 . Glass having a rough surface

2205/00 Compositions applicable for the manufacture of vitreous enamels or glazes
2205/02 . for opaque enamels or glazes
2205/04 . for self-cleaning enamels or glazes
2205/06 . for dental use

2207/00 Compositions specially applicable for the manufacture of vitreous enamels
2207/02 . containing ingredients for securing a good bond between the vitrified enamel and the metal
2207/04 . for steel
2207/06 . for cast iron
2207/08 . for light metals
2207/10 . for copper, silver or gold

2209/00 Compositions specially applicable for the manufacture of vitreous glazes
2209/02 . to produce non-uniformly coloured glazes

2213/00 Glass fibres or filaments
2213/02 . Biodegradable glass fibres
2213/04 . Dual fibres

2214/00 Nature of the non-vitreous component
2214/02 . Fibres; Filaments; Yarns; Felts; Woven material
2214/03 . . surface treated, e.g. coated
2214/04 . Particles; Flakes
2214/05 . . surface treated, e.g. coated
2214/06 . Whiskers ss
2214/07 . . surface treated, e.g. coated
2214/08 . Metals
2214/10 . Superconducting materials
2214/12 . Polymers
2214/14 . Waste material, e.g. to be disposed of
2214/16 . Microcrystallites, e.g. of optically or electrically active material
2214/17 . in molecular form (for molecular composites)
2214/20 . Glass-ceramics matrix
2214/30 . Methods of making the composites
2214/32 . comprising a sol-gel process
2214/34 . comprising an impregnation by molten glass step

2217/00 Coatings on glass
2217/20 . Materials for coating a single layer on glass
2217/21 . . Oxides
2217/211 . . . SnO_2
2217/212 . . . TiO_2
2217/213 . . . SiO_2
2217/214 . . . Al_2O_3
2217/215 . . . In_2O_3
2217/216 . . . ZnO
2217/217 . . . FeOx, CoOx, NiOx
2217/218 . . . V_2O_5, Nb_2O_5, Ta_2O_5
2217/219 . . . CrOx, MoOx, WOx
2217/22 . . . ZrO_2
2217/228 . . . Other specific oxides
2217/229 . . . Non-specific enumeration
2217/23 . . . Mixtures
2217/231 . . . . In_2O_3/SnO_2
2217/232 . . . . CdO/SnO_2
2217/24 . . . Doped oxides
2217/241 . . . . with halides
2217/242 . . . . with rare earth metals
2217/243 . . . . with S, Se, Te
2217/244 . . . . with Sb
2217/25 . . Metals
2217/251 . . . Al, Cu, Mg or noble metals
2217/252 . . . . Al
2217/253 . . . . Cu
2217/254 . . . . Noble metals
2217/255 . . . . . Au
2217/256 . . . . . Ag
2217/257 . . . Refractory metals
2217/258 . . . . Ti, Zr, Hf
2217/259 . . . . V, Nb, Ta
2217/26 . . . . Cr, Mo, W
2217/261 . . . Iron-group metals, i.e. Fe, Co or Ni
2217/262 . . . Light metals other than Al
2217/263 . . . Metals other than noble metals, Cu or Hg

NOTE

This code is only to be used in combination with C03C classification symbols having the +IDT notation.

2217/268 . . . Other specific metals
2217/269 . . . Non-specific enumeration
2217/27 . . . Mixtures of metals, alloys
2217/28 . . Other inorganic materials
2217/281 . . . Nitrides
2217/282 . . . Carbides, silicides
2217/283 . . . Borides, phosphides
2217/284 . . . Halides
2217/285 . . . . Fluorides
2217/286 . . . . Chlorides
2217/287 . . . Chalcogenides
2217/288 . . . . Sulfides
2217/289 . . . . Selenides, tellurides
2217/29 . . Mixtures
2217/40 . Coatings comprising at least one inhomogeneous layer
2217/42 . . consisting of particles only
2217/425 . . consisting of a porous layer
2217/43 . . consisting of a dispersed phase in a continuous phase
2217/44 . . . characterized by the composition of the continuous phase
2217/445 . . . . Organic continuous phases
2217/45 . . . . Inorganic continuous phases
2217/452 . . . . . Glass
2217/46 . . . characterized by the dispersed phase
2217/465 . . . . having a specific shape
2217/47 . . . . consisting of a specific material
2217/475 . . . . . Inorganic materials
2217/476 . . . . . Tin oxide or doped tin oxide
2217/477 . . . . . Titanium oxide
2217/478 . . . . . Silica
2217/479 . . . . . Metals
2217/48 . . . . having a specific function
2217/485 . . . . . Pigments
2217/70 . Properties of coatings
2217/71 . . Photocatalytic coatings

2217/72 . . Decorative coatings
2217/73 . . Anti-reflective coatings with specific characteristics
2217/732 . . . made of a single layer
2217/734 . . . comprising an alternation of high and low refractive indexes
2217/74 . . UV-absorbing coatings
2217/75 . . Hydrophilic and oleophilic coatings
2217/76 . . Hydrophobic and oleophobic coatings
2217/77 . . Coatings having a rough surface
2217/775 . . . to provide anti-slip characteristics
2217/78 . . Coatings specially designed to be durable, e.g. scratch-resistant
2217/90 . Other aspects of coatings
2217/91 . . Coatings containing at least one layer having a composition gradient through its thickness
2217/92 . . Coating of crystal glass
2217/93 . . Coatings containing a reinforcement comprising fibers or grids
2217/94 . . Transparent conductive oxide layers [TCO] being part of a multilayer coating
2217/944 . . . Layers comprising zinc oxide
2217/948 . . . Layers comprising indium tin oxide [ITO]

2218/00 Methods for coating glass
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
2218/13 . . from melts
2218/15 . . from the vapour phase
2218/151 . . . by vacuum evaporation
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
2218/36 . . Underside coating of a glass sheet
2218/365 . . Coating different sides of a glass substrate