

**C 03 C CHEMICAL COMPOSITION OF GLASSES, GLAZES, OR VITREOUS ENAMELS; SURFACE TREATMENT OF GLASS; SURFACE TREATMENT OF FIBRES OR FILAMENTS FROM GLASS, MINERALS OR SLAGS; JOINING GLASS TO GLASS OR OTHER MATERIALS**

**Subclass Index**

**CHEMICAL COMPOSITION**

For glasses.....	1/00, 3/00, 4/00, 6/00, 10/00 to 12/00
For glazes, for vitreous enamels.....	1/00, 8/00
For devitrified glass ceramics.....	10/00
For fibres or filaments .....	13/00
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**SURFACE TREATMENTS**

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GLASS OF SPECIAL STRUCTURE.....	10/00 to 12/00, 14/00

**Chemical composition of glasses, glazes, or vitreous enamels**

**Note**

In groups 1/00 to 14/00, in the absence of an indication to the contrary, classification is made in the last appropriate place. [4]

**1/00 Ingredients generally applicable to manufacture of glasses, glazes or vitreous enamels**

- 1/02 . Pretreated ingredients
- 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 cracked effects
- 1/10 . to produce uniformly-coloured transparent products

**3/00 Glass compositions (glass batch compositions 6/00) [4]**

- 3/04 . containing silica [4]

**Note**

If silica is specified as being present in a percent range covered by two of the groups 3/06, 3/062 or 3/076, classification is made in both groups. If the range is covered by the three groups, classification is made in group 3/04 itself. [4]

- 3/06 . . with more than 90% silica by weight, e.g. quartz
- 3/062 . . with less than 40% silica by weight [4]
- 3/064 . . . containing boron [4]
- 3/066 . . . . containing zinc [4]
- 3/068 . . . . containing rare earths [4]
- 3/07 . . . containing lead [4]
- 3/072 . . . . containing boron [4]
- 3/074 . . . . containing zinc [4]
- 3/076 . . with 40% to 90% silica by weight [4]
- 3/078 . . . containing an oxide of a divalent metal, e.g. an oxide of zinc [4]
- 3/083 . . . containing aluminium oxide or an iron compound [4]
- 3/085 . . . . containing an oxide of a divalent metal [4]
- 3/087 . . . . containing calcium oxide, e.g. common sheet or container glass [4]
- 3/089 . . . containing boron [4]
- 3/091 . . . . containing aluminium [4]
- 3/093 . . . . containing zinc or zirconium [4]
- 3/095 . . . containing rare earths [4]

- 3/097 . . . containing phosphorus, niobium or tantalum [4]
- 3/102 . . . containing lead [4]
- 3/105 . . . . containing aluminium [4]
- 3/108 . . . . containing boron [4]
- 3/11 . . . containing halogen or nitrogen [4]
- 3/112 . . . . containing fluorine [4]
- 3/115 . . . . . containing boron [4]
- 3/118 . . . . . containing aluminium [4]
- 3/12 . Silica-free oxide glass compositions [4]
- 3/14 . . containing boron [4]
- 3/145 . . . containing aluminium or beryllium [4]
- 3/15 . . . containing rare earths [4]
- 3/155 . . . . containing zirconium, titanium, tantalum or niobium [4]
- 3/16 . . containing phosphorus [4]
- 3/17 . . . containing aluminium or beryllium [4]
- 3/19 . . . containing boron [4]
- 3/21 . . . containing titanium, zirconium, vanadium, tungsten or molybdenum [4]
- 3/23 . . containing halogen and at least one oxide, e.g. oxide of boron [4]
- 3/247 . . . containing fluorine and phosphorus [4]
- 3/253 . . containing germanium [4]
- 3/32 . Non-oxide glass compositions, e.g. binary or ternary halides, sulfides, or nitrides of germanium, selenium or tellurium [4]

**4/00 Compositions for glass with special properties [4]**

**Note**

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

- 4/02 . for coloured glass [4]
- 4/04 . for photosensitive glass [4]
- 4/06 . . for phototropic or photochromic glass [4]
- 4/08 . for glass selectively absorbing radiation of specified wave lengths [4]
- 4/10 . for infra-red transmitting glass [4]
- 4/12 . for luminescent glass; for fluorescent glass [4]
- 4/14 . for electro-conductive glass [4]
- 4/16 . for dielectric glass [4]
- 4/18 . for ion-sensitive glass [4]
- 4/20 . for chemical resistant glass [4]

- 6/00 Glass batch compositions** (single ingredients of batch compositions 1/00) [4]

### Note

This group covers also compositions which are intended to be heated sufficiently for their ingredients to fuse into a glass, e.g. glass furnace charges. [4]

- 6/02 . containing silicates, e.g. cullet [4]  
 6/04 . containing uncombined silica, e.g. sand [4]  
 6/06 . containing halogen compounds [4]  
 6/08 . containing pellets or agglomerates [4]  
 6/10 . containing slag [4]
- 8/00 Enamels; Glazes** (cold glazes for ceramics C 04 B 41/86); **Fusion seal compositions being frit compositions having non-frit additions** [4]
- 8/02 . Frit compositions, i.e. in a powdered or comminuted form [4]  
 8/04 . . containing zinc [4]  
 8/06 . . containing halogen [4]  
 8/08 . . containing phosphorus [4]  
 8/10 . . containing lead [4]  
 8/12 . . . containing titanium or zirconium [4]  
 8/14 . Glass frit mixtures having non-frit additions, e.g. opacifiers, colorants, mill additions [4]  
 8/16 . . with vehicle or suspending agents, e.g. slip [4]  
 8/18 . . containing free metals [4]  
 8/20 . . containing titanium compounds; containing zirconium compounds [4]  
 8/22 . containing two or more distinct frits having different compositions [4]  
 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 [4]
- 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** [4]
- 10/02 . Non-silica and non-silicate crystalline phase, e.g. spinel, barium titanate [4]  
 10/04 . Silicate or polysilicate crystalline phase, e.g. mullite, diopside, sphene, plagioclase [4]  
 10/06 . . Divalent metal oxide aluminosilicate crystalline phase, e.g. anorthite, slagcerams [4]  
 10/08 . . . Magnesium aluminosilicate, e.g. cordierite [4]  
 10/10 . . Alkali metal aluminosilicate crystalline phase [4]  
 10/12 . . . Lithium aluminosilicate, e.g. spodumene, eucryptite [4]  
 10/14 . Silica crystalline phase, e.g. stuffed quartz, cristobalite [4]  
 10/16 . Halogen-containing crystalline phase [4]
- 11/00 Multi-cellular glass**
- 12/00 Powdered glass** (8/02 takes precedence); **Bead compositions** [4]  
 12/02 . Reflective beads [4]
- 13/00 Fibre or filament compositions** (manufacture of fibres or filaments C 03 B 37/00)  
 13/02 . containing compounds of titanium or zirconium [4]

- 13/04 . Fibre optics, e.g. core and clad fibre compositions (light guides G 02 B 6/00) [4]  
 13/06 . Mineral fibres, e.g. slag wool, mineral wool, rock wool [4]

- 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** (glass batch compositions 6/00; devitrified glass-ceramics 10/00) [4]

### Surface treatment of glass; Surface treatment of fibres or filaments from glass, minerals or slags

### Note

Treatment of materials specially adapted to enhance their filling properties in mortars, concrete or artificial stone is classified in subclass C 04 B. [4]

- 15/00 Surface treatment of glass, not in the form of fibres or filaments, by etching** (etching or surface-brightening compositions, in general C 09 K 13/00) [2]  
 15/02 . for making a smooth surface
- 17/00 Surface treatment of glass, e.g. of devitrified glass, not in the form of fibres or filaments, by coating** (optical coatings of optical elements G 02 B 1/10)  
 17/02 . with glass (17/34, 17/44 take precedence) [3]  
 17/04 . . by fritting glass powder  
 17/06 . with metals (17/34, 17/44 take precedence) [3]  
 17/09 . . by deposition from the vapour phase [3]  
 17/10 . . by deposition from the liquid phase  
 17/22 . with other inorganic material (17/34, 17/44 take precedence) [3]  
 17/23 . . Oxides (17/02 takes precedence) [3]  
 17/245 . . . by deposition from the vapour phase [3]  
 17/25 . . . by deposition from the liquid phase [3]  
 17/27 . . . by oxidation of a coating previously applied [3]  
 17/28 . with organic material (17/34, 17/44 take precedence) [3]  
 17/30 . . with silicon-containing compounds  
 17/32 . . with synthetic or natural resins (17/30 takes precedence)  
 17/34 . with at least two coatings having different compositions (17/44 takes precedence) [3]  
 17/36 . . at least one coating being a metal [3]  
 17/38 . . . at least one coating being a coating of an organic material [3]  
 17/40 . . . all coatings being metal coatings [3]  
 17/42 . . at least one coating of an organic material and at least one non-metal coating [3]  
 17/44 . Lustring [3]
- 19/00 Surface treatment of glass, not in the form of fibres or filaments, by mechanical means** (sand-blasting, grinding, or polishing glass B 24)
- 21/00 Treatment of glass, not in the form of fibres or filaments, by diffusing ions or metals into the surface**
- 23/00 Other surface treatment of glass not in the form of fibres or filaments**
- 25/00 Surface treatment of fibres or filaments from glass, minerals, or slags**  
 25/02 to

- 25/04 (transferred to 25/10)
- 25/06 (transferred to 25/68)
- 25/10 . by coating [7]
- 25/12 . . General methods for coating; Devices therefor [7]
- 25/14 . . . Spraying [7]
- 25/16 . . . Dipping [7]
- 25/18 . . . using extrusion devices [7]
- 25/20 . . . Contacting the fibres with applicators, e.g. rolls [7]
- 25/22 . . . Deposition from the vapour phase [7]

**Notes**

- (1) In groups 25/24 to 25/54, in the absence of an indication to the contrary, classification is made in the last appropriate place. [7]
- (2) In groups 25/24 to 25/44, it is desirable to add the indexing codes relating to the individual constituents of the composition. The indexing codes, which are chosen from groups 25/24 to 25/44, have the same numbers as the classification symbols, but a colon is used instead of the oblique stroke and should be linked. [7]
- (3) Attention is drawn to Chapter IV of the Guide which sets forth the rules concerning the application and presentation of the different types of indexing code. [7]

- 25/24 . . Coatings containing organic materials [7]
- 25/26 . . . Macromolecular compounds or prepolymers [7]
- 25/28 . . . . obtained by reactions involving only carbon-to-carbon unsaturated bonds, e.g. acrylic resins [7]
- 25/30 . . . . . Polyolefins [7]
- 25/32 . . . . . obtained otherwise than by reactions involving only carbon-to-carbon unsaturated bonds [7]
- 25/34 . . . . . Condensation polymers of aldehydes, e.g. with phenols, ureas, melamines, amides or amines [7]
- 25/36 . . . . . Epoxy resins [7]
- 25/38 . . . . . Organo-metallic compounds [7]
- 25/40 . . . . . Organo-silicon compounds [7]
- 25/42 . . Coatings containing inorganic materials [7]
- 25/44 . . . Carbon, e.g. graphite [7]
- 25/46 . . . Metals [7]
- 25/48 . . with two or more coatings having different compositions [7]

**Note**

If one or more of the individual coatings are of interest, for each of these coatings classification is also made in one or more of groups 25/24 to 25/46, in accordance with the notes before group 25/24. [7]

- 25/50 . . . Coatings containing organic materials only [7]
- 25/52 . . . Coatings containing inorganic materials only [7]
- 25/54 . . . Combinations of one or more coatings containing organic materials only with one or more coatings containing inorganic materials only [7]
- 25/60 . by diffusing ions or metals into the surface [7]
- 25/62 . by application of electric or wave energy or particle radiation, or by ion implantation (for drying or dehydration 25/64) [7]
- 25/64 . Drying; Dehydration; Dehydroxylation [7]
- 25/66 . Chemical treatment, e.g. leaching, acid or alkali treatment (dehydroxylation 25/64) [7]
- 25/68 . . by etching [7]
- 25/70 . Cleaning, e.g. for reuse (25/62 to 25/66 take precedence) [7]

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

**Note**

Layered products classified in groups 27/00 or 29/00 are also classified in subclass B 32 B.

- 27/00 Joining pieces of glass to pieces of other inorganic material; Joining glass to glass other than by fusing** (17/00 takes precedence; wired glass C 03 B; joining glass to ceramics C 04)
- 27/02 . by fusing glass directly to metal
- 27/04 . Joining glass to metal by means of an interlayer
- 27/06 . Joining glass to glass by processes other than fusing (fusing C 03 B 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 E 06 B 3/66)
- 27/08 . . with the aid of intervening metal
- 27/10 . . with the aid of adhesive specially adapted for that purpose
- 27/12 . . . Laminated glass (mechanical features in manufacture of glass laminates part of which is of plastic material B 32 B)
- 29/00 Joining metals with the aid of glass**