ECLA EUROPEAN CLASSIFICATION

C03C 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

[N: **WARNING**
The following IPC groups are not used in the internal ECLA classification scheme.
Subject matter covered by these groups is classified in the following ECLA groups:

C03C6/00 covered by C03C1/00
C03C10/02-C03C10/14 covered by C03C10/00
C03C13/02 covered by C03C13/00
C03C27/12 covered by B32B17/00
]

[N: **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

3.
]

Guide heading: **Chemical composition of glasses, glazes, or vitreous enamels**

Note
In groups C03C1/00 to C03C14/00, in the absence of an indication to the contrary, classification is made in the last appropriate place.

C03C1/00 Ingredients generally applicable to manufacture of glasses, glazes, or vitreous enamels

C03C1/00B . [N: Use of waste materials, e.g. slags]

C03C1/00C . [N: Refining agents (refining C03B5/225)]

C03C1/00D . [N: to produce glass through wet route]
C03C1/00D4 . . [N: for the production of films or coatings] [N0108]

C03C1/02 . Pretreated ingredients
C03C1/02B . . [N: Purification of silica sand or other minerals]
C03C1/02D . . [N: Chemical treatment of cullet or glass fibres]
C03C1/02F . . [N: Pelletisation or prereacting of powdered raw materials (apparatus or methods C03B1/02)]
C03C1/02H . . [N: Ingredients allowing introduction of lead or other easily volatile or dusty compounds]

C03C1/04 . Opacifiers, e.g. fluorides or phosphates; Pigments

C03C1/06 . . to produce non-uniformly pigmented, e.g. speckled, marbled, or veined products

C03C1/08 . to produce crackled effects

C03C1/10 . to produce uniformly-coloured transparent products

C03C1/10B . . [N: by the addition of colorants to the forehearth of the glass melting furnace]

C03C3/00 **Glass compositions** [C9510]

C03C3/04 . containing silica

Note
If silica is specified as being present in a percent range covered by two of the groups C03C3/06, C03C3/062 or C03C3/076, classification is made in both groups. If the range is covered by the three groups, classification is made in group C03C3/04 itself.

C03C3/04C . . [N: Silicon oxycarbide, oxynitride or oxycarbonitride glasses] [N9411]

C03C3/06 . . with more than 90% silica by weight, e.g. quartz [N: (C03C3/04C takes precedence)] [C9412]

C03C3/06B . . . [N: by leaching a soluble phase and consolidating]

C03C3/062 . . with less than 40% silica by weight

C03C3/064 . . . containing boron

C03C3/066 . . . . containing zinc

C03C3/068 . . . . containing rare earths

C03C3/07 . . . containing lead

C03C3/072 . . . . containing boron

C03C3/074 . . . . . containing zinc

C03C3/074B . . . . . [N: containing more than 50% lead oxide, by weight]

C03C3/076 . . with 40% to 90% silica, by weight [N: (C03C3/04C takes precedence)] [C9412]

C03C3/078 . . . containing an oxide of a divalent metal, e.g. an oxide of zinc

C03C3/083 . . . containing aluminium oxide or an iron compound

C03C3/085 . . . . containing an oxide of a divalent metal

C03C3/087 . . . . . containing calcium oxide, e.g. common sheet or container glass

C03C3/089 . . . containing boron

C03C3/091 . . . . containing aluminium

C03C3/093 . . . . . containing zinc or zirconium

C03C3/095 . . . containing rare earths

C03C3/097 . . . containing phosphorus, niobium or tantalum

C03C3/102 . . . containing lead

C03C3/105 . . . . containing aluminium

C03C3/108 . . . . containing boron

C03C3/11 . . . containing halogen or nitrogen

C03C3/11B . . . . [N: containing nitrogen]

C03C3/112 . . . . containing fluorine

C03C3/115 . . . . . containing boron

C03C3/118 . . . . . containing aluminium

C03C3/12 . Silica-free oxide glass compositions
C03C3/12N . . [N: containing oxides of As, Sb, Bi, Mo, W, V, Te as glass formers]
C03C3/12P . . [N: containing aluminium as glass former]
C03C3/12R . . [N: containing TiO2 as glass former]
C03C3/14 . . containing boron
C03C3/14B . . . [N: containing lead]
C03C3/145 . . . containing aluminium or beryllium
C03C3/15 . . . containing rare earths
C03C3/155 . . . . containing zirconium, titanium, tantalum or niobium
C03C3/16 . . containing phosphorus
C03C3/17 . . . containing aluminium or beryllium
C03C3/19 . . . containing boron
C03C3/21 . . . containing titanium, zirconium, vanadium, tungsten or molybdenum
C03C3/23 . . containing halogen and at least one oxide, e.g. oxide of boron
C03C3/247 . . . containing fluorine and phosphorus
C03C3/253 . . containing germanium

C03C3/32 . Non-oxide glass compositions, e.g. binary or ternary halides, sulfides or nitrides of germanium, selenium or tellurium
C03C3/32B . . [N: Chalcogenide glasses, e.g. containing S, Se, Te]
C03C3/32B2 . . . [N: containing halogen, e.g. chalcohalide glasses] [N9411]
C03C3/32D . . [N: Fluoride glasses] [C9411]
C03C3/32D2 . . . [N: containing beryllium]
C03C3/32N . . [N: Nitride glasses] [N9411]

C03C4/00 **Compositions for glass with special properties**

Note
When classifying in group C03C4/00, classification is also made in the appropriate groups of group C03C3/00 according to the glass composition.

C03C4/00B . [N: for biologically-compatible glass]
C03C4/00B2 . . [N: Biodegradable glass] [N1110]
C03C4/00B4 . . [N: for dental use] [N1110]

C03C4/00C . [N: for crystal glass, e.g. lead-free crystal glass] [C9411]

C03C4/00D . [N: for soluble glass for controlled release of a compound incorporated in said glass]

C03C4/00E . [N: for glass comprising or including particular isotopes] [N1110]

C03C4/00F . [N: for opaline glass]

C03C4/00H . [N: for ultrasonic delay lines glass]

C03C4/00L . [N: for self-destructing glass (C03C4/00B2 takes precedence)] [C1110]

C03C4/00N . [N: for laserable glass]

C03C4/00P . [N: for glass for dosimeters]

C03C4/00U . [N: for UV-transmitting glass]

C03C4/00V . [N: for glass with improved high visible transmittance, e.g. extra-clear glass][N1007]

C03C4/02 . for coloured glass

C03C4/04 . for photosensitive glass

C03C4/06 . . for phototropic or photochromic glass

C03C4/06B . . . [N: for silver-halide free photochromic glass]

C03C4/08 . for glass selectively absorbing radiation of specified wave lengths

C03C4/08B . . [N: for infra-red absorbing glass]

C03C4/08D . . [N: for ultra-violet absorbing glass]

C03C4/08F . . [N: for X-rays absorbing glass]

C03C4/10 . for infra-red transmitting glass

C03C4/12 . for luminescent glass; for fluorescent glass

C03C4/14 . for electro-conductive glass

C03C4/16 . for dielectric glass

C03C4/18 . for ion-sensitive glass

C03C4/20 . for chemical resistant glass

C03C8/00 **Enamels; Glazes** (cold glazes for ceramics [N: C04B41/48]**; Fusion seal compositions being frit compositions having non-frit additions**

C03C8/02 . Frit compositions, i.e. in a powdered or comminuted form

C03C8/04 . . containing zinc

C03C8/06 . . containing halogen

C03C8/08 . . containing phosphorus

C03C8/10 . . containing lead

C03C8/12 . . . containing titanium or zirconium

C03C8/14 . Glass frit mixtures having non-frit additions, e.g. opacifiers, colorants, mill-additions

C03C8/16 . . with vehicle or suspending agents, e.g. slip

C03C8/18 . . containing free metals

C03C8/20 . . containing titanium compounds; containing zirconium compounds

C03C8/22 . containing two or more distinct frits having different compositions

C03C8/24 . 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

C03C8/24B . . [N: containing more than 50% lead oxide, by weight]

C03C10/00 **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**

C03C10/00B . [N: containing silica as main constituent]

C03C10/00C . [N: containing SiO2, Al2O3 and monovalent metal oxide as main constituents]

C03C10/00C2 . . [N: containing SiO2, Al2O3, Li2O as main constituents]

C03C10/00E . [N: containing SiO2, Al2O3 and a divalent metal oxide as main constituents]

C03C10/00E2 . . [N: containing SiO2, Al2O3 and MgO as main constituents]

C03C10/00K . [N: containing PbO, SnO2, B2O3]

C03C10/00M . [N: containing waste materials, e.g. slags] [C9911]

C03C10/00P . [N: having a ferro-electric crystal phase]

C03C10/00R . [N: having a magnetic crystal phase]

C03C10/00S . [N: having a superconducting crystal phase]

C03C10/16 . Halogen containing crystalline phase

C03C11/00 **Multi-cellular glass;** [N: Porous or hollow glass or glass particles]

C03C11/00B . [N: Hollow glass particles]

C03C11/00D . [N: obtained by leaching after a phase separation step]

C03C11/00F . [N: Foam glass, e.g. obtained by incorporating a blowing agent and heating] [C0009]

C03C12/00 **Powdered glass** (C03C8/02 takes precedence)**; Bead compositions**

C03C12/02 . Reflective beads

C03C13/00 **Fibre or filament compositions** (manufacture of fibres or filaments C03B37/00)

C03C13/00B . [N: Alkali-resistant fibres]

C03C13/00B2 . . [N: containing zirconium]

C03C13/00C . [N: Conducting or semi-conducting fibres]

C03C13/00F . [N: obtained by leaching of a soluble phase and consolidation]

C03C13/00H . [N: Glass-ceramics fibres]
C03C13/00H2 . . [N: containing zirconium]

C03C13/00P . [N: Polycrystalline optical fibres]

C03C13/04 . Fibre optics, e.g. core and clad fibre compositions (light guides G02B6/00)
C03C13/04B . . [N: Non-oxide glass compositions]
C03C13/04B2 . . . [N: Fluoride glass compositions]
C03C13/04B4 . . . [N: Chalcogenide glass compositions]
C03C13/04B4B . . . . [N: containing halogen, e.g. chalcohalide glass compositions] [N9411]
C03C13/04D . . [N: Silica-containing oxide glass compositions]
C03C13/04D2 . . . [N: Multicomponent glass compositions]
C03C13/04D4 . . . [N: containing deuterium]
C03C13/04F . . [N: Silica-free oxide glass compositions]

C03C13/06 . Mineral fibres, e.g. slag wool, mineral wool, rock wool

C03C14/00 **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 C03C10/00) [C9510]

C03C14/00B . [N: the non-glass component being in the form of fibres, filaments, yarns, felts or woven material] [N9411]

C03C14/00D . [N: the non-glass component being in the form of particles or flakes] [N9411]

C03C14/00F . [N: the non-glass component being in the form of microcrystallites, e.g. of optically or electrically active material] [N9411]

C03C14/00H . [N: the non-glass component being in molecular form] [N9411]

Guide heading: **Surface treatment of glass; Surface treatment of fibres or filaments from glass, minerals or slag**

C03C15/00 **Surface treatment of glass , not in the form of fibres or filaments, by etching** (etching or surface-brightening compositions, in general C09K13/00) [C9908]

C03C15/02 . for making a smooth surface
C03C15/02B . . [N: for polishing crystal glass, i.e. lead glass]

C03C17/00 **Surface treatment of glass, not in the form of fibres or filaments, by coating** (optical coatings of optical elements G02B1/10) [C9908]

C03C17/00B . [N: General methods for coating; Devices therefor]
C03C17/00B2 . . [N: for flat glass, e.g. float glass]
C03C17/00B4 . . [N: for hollow ware, e.g. containers]

C03C17/00B4A . . . [N: Coating the inside] [N1007]
C03C17/00B4C . . . [N: Coating the outside] [N1007]

C03C17/00D . [N: with materials of composite character] [N9411]
C03C17/00D2 . . [N: containing a dispersed phase, e.g. particles, fibres or flakes, in a continuous phase] [N9411]
C03C17/00D4 . . [N: comprising a mixture of materials covered by two or more of the groups C03C17/02, C03C17/06, C03C17/22 and C03C17/28] [N9411]
C03C17/00D4B . . . [N: Mixtures of organic and inorganic materials, e.g. ormosils and ormocers] [N9411]

C03C17/02 . with glass (C03C17/34, C03C17/44 take precedence)
C03C17/04 . . by fritting glass powder

C03C17/06 . with metals (C03C17/34, C03C17/44 take precedence)
C03C17/09 . . by deposition from the vapour phase
C03C17/10 . . by deposition from the liquid phase

C03C17/22 . with other inorganic material (C03C17/34, C03C17/44 take precedence)
C03C17/22B . . [N: Nitrides]
C03C17/23 . . Oxides (C03C17/02 takes precedence)
C03C17/245 . . . by deposition from the vapour phase
C03C17/245B . . . . [N: Coating containing SnO2]
C03C17/245C . . . . [N: Coating containing TiO2]
C03C17/25 . . . by deposition from the liquid phase
C03C17/25B . . . . [N: Coating containing SnO2]
C03C17/25C . . . . [N: Coating containing TiO2]
C03C17/27 . . . by oxidation of a coating previously applied

C03C17/28 . with organic material (C03C17/34, C03C17/44 take precedence)
C03C17/30 . . with silicon-containing compounds
C03C17/32 . . with synthetic or natural resins (C03C17/30 takes precedence)
C03C17/32B . . . [N: Polyurethanes or polyisocyanates]
C03C17/32C . . . [N: Polyesters]
C03C17/32D . . . [N: Epoxy resins]
C03C17/32E . . . [N: Polyolefins]

C03C17/34 . with at least two coatings having different compositions (C03C17/44 takes precedence)
C03C17/34B . . [N: with at least two coatings of organic materials (C03C17/36, C03C17/42 take precedence)]
C03C17/34D . . [N: with at least two coatings of inorganic materials (C03C17/36, C03C17/42 take precedence)]
C03C17/34D2 . . . [N: all coatings being oxide coatings]
C03C17/34D3 . . . [N: at least one of the coatings comprising a suboxide]
C03C17/34D4 . . . [N: at least one of the coatings being a non-oxide coating]

C03C17/34D4B . . . . [N: comprising a nitride, oxynitride, boronitride or carbonitride]
C03C17/34D4D . . . . [N: comprising carbon, a carbide or oxycarbide]
C03C17/34D4F . . . . [N: comprising a halide]
C03C17/34D4F2 . . . . . [N: comprising a fluoride]
C03C17/34D4F4 . . . . . [N: comprising a chloride]
C03C17/34D4H . . . . [N: comprising a chalcogenide]
C03C17/34D4H2 . . . . . [N: comprising a sulfide or oxysulfide]
C03C17/34D4H4 . . . . . [N: comprising a selenide or telluride]
C03C17/34D4K . . . . [N: comprising silicon, hydrogenated silicon or a silicide]
C03C17/34D4M . . . . [N: comprising a boride or phosphide]
C03C17/34D4P . . . . [N: comprising other salts, e.g. sulfate, phosphate]
C03C17/36 . . at least one coating being a metal
C03C17/36B . . . [N: the metal being present as a layer] [N1007]
C03C17/36B310 . . . . [N: Coatings of the type glass/metal/inorganic compound] [N1007]
C03C17/36B312 . . . . [N: Coatings of the type glass/inorganic compound/metal] [N1007]
C03C17/36B314 . . . . [N: Coatings of the type glass/metal/inorganic compound/metal/inorganic compound/other] [N1007]
C03C17/36B316 . . . . [N: Coatings of type glass/inorganic compound/metal/inorganic compound/metal/other] [N1007]
C03C17/36B318 . . . . [N: Coatings of the type glass/metal/other inorganic layers, at least one layer being non-metallic] [N1007]
C03C17/36B320 . . . . [N: Coatings of type glass/inorganic compound/other inorganic layers, at least one layer being metallic] [N1007]
C03C17/36B330 . . . . [N: one layer at least containing a fluoride] [N1007]
C03C17/36B331 . . . . [N: one layer at least containing a chloride, bromide or iodide] [N1007]
C03C17/36B332 . . . . [N: one layer at least containing a nitride, oxynitride, boronitride or carbonitride] [N1007]
C03C17/36B334 . . . . [N: one layer at least containing a sulfide] [N1007]
C03C17/36B335 . . . . [N: one layer at least containing a selenide or telluride] [N1007]
C03C17/36B336 . . . . [N: one layer at least containing carbon, a carbide or oxycarbide] [N1007]
C03C17/36B338 . . . . [N: one layer at least containing silicon, hydrogenated silicon or a silicide] [N1007]
C03C17/36B339 . . . . [N: Multilayers containing at least two functional metal layers] [N1007]
C03C17/36B340 . . . . [N: the multilayer coating containing a metal layer] [N1007]
C03C17/36B342 . . . . [N: the metal being silver] [N1007]
C03C17/36B343 . . . . [N: in combination with other metals, silver being more than 50%] [N1007]
C03C17/36B344 . . . . [N: made of metals other than silver] [N1007]
C03C17/36B346 . . . . [N: the coating stack containing at least one sacrificial layer to protect the metal from oxidation] [N1007]
C03C17/36B350 . . . . [N: the multilayer coating containing at least one conducting layer] [N1007]
C03C17/36B352 . . . . [N: the multilayer coating having optical properties] [N1007]
C03C17/36B352L . . . . . [N: Low-emissivity or solar control coatings] [N1007]
C03C17/36B352M . . . . . [N: specially adapted for use as mirrors] [N1007]
C03C17/36B352P . . . . . [N: specially adapted for use as photomask] [N1110]

C03C17/36B354 . . . . [N: the multilayer coating having electrical properties] [N1007]
C03C17/36B354E . . . . . [N: specially adapted for use as electrodes] [N1007]
C03C17/36B354H . . . . . [N: specially adapted for use in heating devices for rear window of vehicles] [N1007]
C03C17/36B354M . . . . . [N: specially adapted for use as electromagnetic shield] [N1110]
C03C17/36B354S . . . . . [N: specially adapted for use in solar cells] [N1007]
C03C17/36B356 . . . . [N: the multilayer coating being used in glazing, e.g. windows or windscreens] [N1007]
C03C17/36B358 . . . . [N: the multilayer coating being used for decoration purposes] [N1007]
C03C17/36B360 . . . . [N: the multilayer coating being used for ovens] [N1007]
C03C17/36B370 . . . . [N: one oxide layer being obtained by oxidation of a metallic layer] [N1007]
C03C17/36B372 . . . . [N: one metallic layer being obtained by reduction of an oxide layer] [N1007]
C03C17/36B374 . . . . [N: one layer having a composition gradient through its thickness] [N1007]
C03C17/36B390 . . . . [N: one metallic layer at least being obtained by electroless plating] [N1007]
C03C17/38 . . . at least one coating being a coating of an organic material
C03C17/40 . . . all coatings being metal coatings
C03C17/42 . . at least one coating of an organic material and at least one non-metal coating

C03C17/44 . Lustring

C03C19/00 **Surface treatment of glass, not in the form of fibres or filaments, by mechanical means** (sand-blasting, grinding, or polishing glass B24) [C9908]

C03C21/00 **Treatment of glass, not in the form of fibres or filaments, by diffusing ions or metals in the surface** [C9908]

C03C21/00B . [N: in liquid phase, e.g. molten salts, solutions]
C03C21/00B2 . . [N: to perform ion-exchange between alkali ions (C03C21/00B4 takes precedence)]
C03C21/00B2B . . . [N: under application of an electrical potential difference]
C03C21/00B4 . . [N: to introduce in the glass such metals or metallic ions as Ag, Cu]
C03C21/00B6 . . [N: to perform an exchange of the type Xn+ ----> nH+]

C03C21/00C . [N: in gaseous phase]

C03C21/00E . [N: in solid phase, e.g. using pastes, powders]

C03C23/00 **Other surface treatment of glass not in the form of fibres or filaments** [C9908]

C03C23/00B . [N: by irradiation]
C03C23/00B2 . . [N: by infra-red light]
C03C23/00B4 . . [N: by visible light]
C03C23/00B6 . . [N: by ultra-violet light]
C03C23/00B8 . . [N: by a laser beam]
C03C23/00B10 . . [N: by X-rays]

C03C23/00B12 . . [N: by gamma-rays]
C03C23/00B14 . . [N: by electrons, protons or alpha-particles]
C03C23/00B16 . . [N: by neutrons]
C03C23/00B18 . . [N: by atoms]
C03C23/00B20 . . [N: by ion implantation]
C03C23/00B22 . . [N: by plasma or corona discharge]
C03C23/00B24 . . [N: by microwave radiation]

C03C23/00D . [N: by thermal treatment]

C03C23/00F . [N: Cleaning of glass (specially adapted to plate glass B08B11/00)]

C03C23/00H . [N: comprising a lixiviation step]

C03C23/00K . [N: Drying; Dehydroxylation]

C03C23/00P . [N: Poling glass] [N1110]

C03C23/00S . [N: Solution impregnating; Solution doping; Molecular stuffing, e.g. of porous glass (in manufacture of preforms C03B37/012)]

C03C25/00 **Surface treatment of fibres or filaments from glass, minerals, or slags** [N: (woven fabrics D03; non-woven fabrics D04; treatment of fabrics in general or non-chemical aspects of treatment of glass fabrics D06M)] [C1002]

C03C25/00D . [N: by thermal treatment]

C03C25/00M . [N: by mechanical means]

C03C25/00S . [N: by solution impregnating; solution doping or molecular stuffing of porous glass] [N1007]

C03C25/10 . by coating [N9909]
C03C25/10D . . [N: with materials of composite character] [N0103]
C03C25/10D2 . . . [N: containing particles, fibres or flakes, e.g. in a continuous phase] [N0103]
C03C25/10L . . [N: with rubber latex-containing coatings] [N9909]
C03C25/10M . . [N: Coating with colouring agent-containing compositions, e.g. for obtaining coloured textiles] [N9909]
C03C25/10N . . [N: Fibres used for reinforcing cement-based products] [N9909]
C03C25/10N2 . . . [N: with organic coatings] [N9909]
C03C25/10N4 . . . [N: with inorganic coatings] [N9909]
C03C25/10P . . [N: to obtain optical fibres] [N9909]
C03C25/10P2 . . . [N: with organic coatings or claddings] [N9909]
C03C25/10P2B . . . . [N: Organic claddings] [N9909]
C03C25/10P2D . . . . [N: Organic coatings] [N9909]
C03C25/10P2D2 . . . . . [N: Single coatings] [N9909]
C03C25/10P2D4 . . . . . [N: Multiple coatings] [N9909]

C03C25/10P4 . . . [N: with inorganic coatings] [N9909]
C03C25/10P4C . . . . [N: Carbon] [N9909]
C03C25/10P4M . . . . [N: Metals] [N9909]
C03C25/10P4R . . . . [N: Multiple inorganic coatings] [N1110]
C03C25/10P6 . . . [N: with at least one organic coating and at least one inorganic coating] [N1110]
C03C25/10Q . . [N: to obtain coated fabrics] [N1002]
C03C25/12 . . General methods for coating; Devices therefor [N9909]
C03C25/14 . . . Spraying, e.g. pulverisation [N9909]
C03C25/14B . . . . [N: Pulverisation on continuous fibres] [N9909]
C03C25/14D . . . . [N: Pulverisation on fibres in suspension in a gaseous medium] [N9909]
C03C25/16 . . . Dipping [N9909]
C03C25/18 . . . using extrusion devices [N9909]
C03C25/20 . . . Contacting the fibres with applicators, e.g. rolls [N9909]
C03C25/22 . . . Depositing from the vapour phase [N9909]
C03C25/22B . . . . [N: by chemical vapour deposition or pyrolysis] [N9909]
C03C25/22D . . . . [N: by sputtering] [N9909]

[N: **Note**

In groups C03C25/24 to C03C25/40, organic coating compositions
also cover mixtures of organic and inorganic compounds. A coating composition which
cannot be completely classified in a single one of groups C03C25/24 to
C03C25/40 should be classified in each relevant group, in accordance with the
following rules:

- Compositions containing only one macromolecular constituent and one or more
conventional inorganic or non-macromolecular compounds, e.g. acids, solvents, are
classified according to the macromolecular constituent only.

- Compositions containing two or more macromolecular constituents and further
conventional inorganic or non-macromolecular compounds are classified according
to the macromolecular constituent present in the highest proportion. If, however,
the other macromolecular constituents represent invention information, classification
is also made for these constituents.

- Compositions containing macromolecular constituents present in comparable proportions
are classified according to these constituents.

- If non-macromolecular compounds in the composition also represent invention information,
C03C25/38, for specific solvents, fillers, dyes or pigments, surfactants, biocides
or the like in C03C25/24 or subgroups.
]

C03C25/24 . . Coatings containing organic materials [N9909]

C03C25/24E . . . [N: Oils, waxes, fats or derivatives thereof] [N9909]

C03C25/24J . . . [N: Non-macromolecular compounds not covered by C03C25/24E] [N9909]

C03C25/26 . . . Macromolecular compounds or prepolymers, [N: e.g. sizing compositions] [N9909]

C03C25/28 . . . . obtained by reactions involving only carbon-to-carbon unsaturated bonds [N9909]

C03C25/28D . . . . . [N: Acrylic resins] [N9909]

C03C25/30 . . . . . Polyolefins [N9909]

C03C25/30F . . . . . [N: Polyfluoro olefins] [N9909]

C03C25/32 . . . . obtained otherwise than by reactions involving only carbon-to-carbon unsaturated bonds [N9909]

C03C25/32B . . . . . [N: Starch or starch derivatives] [N9909]

C03C25/32D . . . . . [N: Esters or alkyd resins] [N9909]

C03C25/32F . . . . . [N: Polycarbonates] [N9909]

C03C25/32H . . . . . [N: Polyureas or polyurethanes] [N9909]

C03C25/32K . . . . . [N: Polyamides] [N9909]

C03C25/34 . . . . . Condensation polymers of aldehydes, e.g. with phenol, ureas, melamines, amides or amines [N9909]

C03C25/36 . . . . . Epoxy resins [N9909]

C03C25/38 . . . Organo-metal compounds [N9909]

C03C25/40 . . . Organo-silicon compounds [N9909]

C03C25/42 . . Coatings containing inorganic materials [N9909]

C03C25/44 . . . Carbon, e.g. graphite [N9909]

C03C25/46 . . . Metals [N9909]

C03C25/48 . . with two or more coatings having different compositions [N: (C03C25/10P take s precedence)] [N9909]

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 C03C25/24 to C03C25/46, in accordance with the note before group C03C25/24.

C03C25/50 . . . Coatings containing organic materials only [N9909]

C03C25/52 . . . Coatings containing inorganic materials only [N9909]

C03C25/54 . . . Combinations of one or more coatings containing organic materials only with one or more coatings containing inorganic materials only [N9909]

C03C25/60 . by diffusing ions or metals in the surface [N9909]

C03C25/60B . . [N: in the liquid phase, e.g. using molten salts or solutions]

C03C25/60B2 . . . [N: to perform ion-exchange between alkali ions (C03C25/60B4 takes precedence)] [N9909]

C03C25/60B2B . . . . [N: under application of an electrical potential difference] [N9909]

C03C25/60B4 . . . [N: to introduce in the glass such metals or metallic ions as Ag or Cu] [N9909]

C03C25/60B6 . . . [N: to perform an exchange of the type Xn+ --->nH+] [N9909]

C03C25/60C . . [N: in the gaseous phase] [N9909]

C03C25/60E . . [N: in the solid phase, e.g. using pastes, powders] [N9909]

C03C25/62 . by application of electric or wave energy or particle radiation, or by ion implantation

for drying or dehydration C03C25/64) [N9909]

C03C25/62B . . [N: Electromagnetic waves] [N9909]
C03C25/62B2 . . . [N: Infra-red] [N9909]
C03C25/62B4 . . . [N: Visible light] [N9909]
C03C25/62B6 . . . [N: Ultra-violet] [N9909]
C03C25/62B8 . . . [N: Laser] [N9909]
C03C25/62B10 . . . [N: X-rays] [N9909]
C03C25/62B12 . . . [N: Gamma-rays] [N9909]
C03C25/62B24 . . . [N: Microwaves] [N9909]
C03C25/62D . . [N: Particle radiation or ion implantation] [N9909]
C03C25/62D14 . . . [N: Electrons, protons or alpha-particles] [N9909]
C03C25/62D16 . . . [N: Neutrons] [N9909]
C03C25/62D18 . . . [N: Atoms] [N9909]
C03C25/62D20 . . . [N: Ion implantation] [N9909]
C03C25/62P . . [N: Plasma or corona discharge] [N9909]

C03C25/64 . Drying; Dehydration; Dehydroxylation [N9909]

C03C25/66 . Chemical treatment, e.g. leaching, acid alkali treatment (dehydroxylation C03C25/46) [N9909]
C03C25/68 . . by etching [N9909]

C03C25/70 . Cleaning, e.g. for reuse ([N: C03C25/00D,] C03C25/62 and C03C25/66 take precedence) [N9909]

Guide heading: **Joining glass to glass or to other materials** (fusion seal compositions C03C8/24)

Note
Layered products classified in groups C03C27/00 or C03C29/00 are also classified in subclass B32B.

C03C27/00 **Joining pieces of glass to pieces of other inorganic material; Joining glass to glass other than by fusing** (C03C17/00 takes precedence; layered structures comprising at least one glass sheet B32B17/00; wired glass C03B; joining glass to ceramics C04) [C9706]

C03C27/00B . [N: with compositions containing more than 50% lead oxide by weight]

C03C27/02 . by fusing glass directly to metal

C03C27/04 . Joining glass to metal by means of an interlayer
C03C27/04B . . [N: consisting of a combination of materials selected from glass, glass-ceramic or ceramic material with metals, metal oxides or metal salts]
C03C27/04B2 . . . [N: of glass, glass-ceramic or ceramic material only]
C03C27/04B4 . . . [N: of metals, metal oxides or metal salts only]
C03C27/04H . . [N: consisting of an adhesive specially adapted for that purpose]

C03C27/06 . Joining glass to glass by processes other than fusing (fusing C03B23/20; 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 E06B3/66)

C03C27/08 . . with the aid of intervening metal

C03C27/10 . . with the aid of adhesive specially adapted for that purpose

C03C29/00 Joining metals with the aid of glass