

ECLA EUROPEAN CLASSIFICATION

C09K MATERIALS FOR MISCELLANEOUS APPLICATIONS, NOT PROVIDED FOR ELSEWHERE

Notes

1. This subclass covers also the use of specified materials in general or their use for the applications not specially provided for elsewhere.
2. In this subclass, the following term is used with the meaning indicated:

- "materials" includes compositions.

C09K3/00 Materials not provided for elsewhere

[N: Notes

[N1110] When classifying in group [C09K3/10](#) to [C09K3/10F2](#) the properties and uses of the material can be further indexed by using ICO codes chosen from [M09K3/10](#) to [M09K3/10M6](#) and the chemical nature of the materials can be further indexed by using ICO codes chosen from [M09K200/00](#) to [M09K200/06T4](#)
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- C09K3/10 . [N: Materials in mouldable or extrudable form] for sealing or packing joints or covers (filling pastes [C09D5/34](#))
- C09K3/10C . . [N: Pure inorganic mixtures]
- C09K3/10D . . [N: characterised by the chemical nature of one of its constituents]
- C09K3/10D6 . . . [N: Fluorinated polymers, e.g. PTFE]
- C09K3/10D8 . . . [N: Sulfur-containing polymers, e.g. polysulfides]
- C09K3/10D10 . . . [N: Polysaccharides or derivatives thereof]
- C09K3/10D12 . . . [N: Macromolecular compounds having one or more carbon-to-silicon linkages]
- C09K3/10D14 . . . [N: Polyurethanes or derivatives thereof]
- C09K3/10F . . [N: characterised by non-chemical features of one or more of its constituents]
- C09K3/10F2 . . . [N: Fibres]
- C09K3/10H . . [N: Sealing waxes, e.g. sealing letters, bottles, or the like]
- C09K3/12 . Materials for stopping leaks, e.g. in radiators, in tanks (filling pastes [C09D5/34](#))
- C09K3/14 . Anti-slip materials; Abrasives [N: (products specifically intended for the fabrication of abrasive tools, blocks or papers, or for operations of the kind of sand-blasting and barrelling [B24B31/14](#), [B24C1/00](#); polishing compositions containing abrasive or grinding agents [C09G1/02](#); polishing of semi-conductors H01L; friction compositions for brakes or clutches [F16D69/02](#))] [C0110]
- [N: Notes
In this group, boron and silicon are considered as being metals. Likewise for associations of carbon with metals, e.g. carbides.
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- C09K3/14B . . [N: Abrasive particles per se (preparation of diamond [C01B31/06](#))] [C0110]

- C09K3/14B2 . . . [N: obtained by division of a mass agglomerated by sintering]
- C09K3/14B4 . . . [N: obtained by division of a mass agglomerated by melting, at least partially, e.g. with a binder]
- C09K3/14C . . [N: Composite particles, e.g. coated particles]
- C09K3/14C2 . . . [N: the coating consisting exclusively of metals]
- C09K3/14D . . [N: Abrasive powders, suspensions and pastes for polishing]
- C09K3/14D2 . . . [N: Aqueous liquid suspensions]
- C09K3/14D4 . . . [N: Non-aqueous liquid suspensions]
- C09K3/14D6 . . . [N: Pastes, optionally in the form of blocks or sticks]
- C09K3/14F . . [N: Antislip compositions]

- C09K3/16 . Anti-static materials

- C09K3/18 . for application to surfaces to minimize adherence of ice, mist or water thereto (rendering particulate materials free flowing, in general, e.g. making them hydrophobic [B01J2/30](#)); Thawing or antifreeze materials for application to surfaces (used in liquids for heat-transfer, heat-exchange or heat-storage or for the production of heat or cold other than by combustion, e.g. radiator liquids, [C09K5/00](#)) [[C9906](#)]

- C09K3/18B . . [N: Thawing materials]

- C09K3/20 . as substitutes for glycerol in its non-chemical uses, e.g. as a base in toilet creams or ointments

- C09K3/22 . for dust-laying or dust-absorbing

- C09K3/24 . for simulating ice or snow

- C09K3/30 . for aerosols (aerosol containers [B65D83/14](#))

- C09K3/32 . for absorbing liquids to remove pollution, e.g. oil, gasoline, fat

- C09K5/00** **Heat-transfer, heat-exchange or heat-storage materials, e.g. refrigerants; Materials for the production of heat or cold by chemical reactions other than by combustion** [[N9906](#)]

- C09K5/02 . Materials undergoing a change of physical state when used ([C09K5/16](#), [C09K5/20](#) take precedence) [[C9906](#)]
- C09K5/04 . . the change of state being from liquid to vapour or vice-versa
 - [N: **Notes**
 - [N1110] When classifying in [C09K5/04B2](#), [C09K5/04B4](#) and [C09K5/04B4B](#) the chemical nature of the material can be further indexed by using ICO codes chosen from [M09K205/00](#) to M205/480
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- C09K5/04B . . . [N: for compression-type refrigeration systems]
- C09K5/04B2 [N: comprising compounds containing carbon and hydrogen only] [[N9807](#)]
- C09K5/04B4 [N: comprising halogenated compounds] [[N9807](#)]
- C09K5/04B4B [N: containing only fluorine as halogen] [[N9807](#)]
- C09K5/04D . . . [N: for absorption-type refrigeration systems]

- C09K5/04F . . . [N: Boiling liquids as heat transfer materials]
- C09K5/06 . . the change of state being from liquid to solid or vice-versa
- C09K5/06B . . . [N: Materials absorbing or liberating heat during crystallisation; Heat storage materials]
- C09K5/06D . . . [N: Cooling mixtures; De-icing compositions]

- C09K5/08 . Materials not undergoing a change of physical state when used ([C09K5/16](#), [C09K5/20](#) take precedence) [N9906]
 - [N: **WARNING**
 - The subgroups of [C09K5/08](#) might be incomplete as some of the patent documents classified in [C09K5/08](#) might need reclassification to one or more of groups [C09K5/10](#) to [C09K5/14](#)
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- C09K5/10 . . Liquid materials [N9906]
- C09K5/12 . . . Molten materials, i.e. materials solid at room temperature, e.g. metals or salts [N9906]
- C09K5/14 . . Solid materials, e.g. powdery or granular [N9906]

- C09K5/16 . Materials undergoing chemical reactions when used [N9906]
- C09K5/18 . . Non-reversible chemical reactions [N9906]
 - [N: **WARNING**
 - This group might be incomplete as some of the patent documents classified in [C09K5/16](#) might need reclassification to [C09K5/18](#)
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- C09K5/20 . Antifreeze additives therefor, e.g. for radiator liquids (for application to surfaces [C09K3/18](#); inhibiting corrosion by liquids [C23F11/00](#)) [N9906]

- C09K8/00** **Compositions for drilling of boreholes or wells; Compositions for treating boreholes or wells, e.g. for completion or for remedial operations**[N0409]
 - [N: **Notes** [N1111]
 - In groups [C09K8/00](#) to [C09K8/94](#) it is desirable to add indexing codes for aspects relating to compositions for drilling or treating boreholes or wells. The indexing codes are chosen from groups [M09K208/00](#) to [M09K208/32](#)
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- C09K8/02 . Well-drilling compositions [N0409] [C1105]
 - Note
 - In groups [C09K8/02-C09K8/594](#), in the absence of an indication to the contrary, classification is made in the last appropriate place

- C09K8/03 . . Specific additives for general use in well-drilling compositions[N0409]
- C09K8/03B . . . [N: Inorganic additives][N0409]
- C09K8/035 . . . Organic additives[N0409]
- C09K8/04 . . Aqueous well-drilling compositions[N0409]
- C09K8/05 . . . containing inorganic compounds only, e.g. mixtures of clay and salt[N0409]
- C09K8/06 . . . Clay-free compositions (containing inorganic compounds only [C09K8/05](#))[N0409]

- C09K8/08 containing natural organic compounds, e.g. polysaccharides, or derivatives thereof[N0409]
- C09K8/10 Cellulose or derivatives thereof[N0409]
- C09K8/12 containing synthetic organic macromolecular compounds or their precursors[N0409]
- C09K8/14 . . . Clay-containing compositions (containing inorganic compounds [C09K8/05](#))[N0409]
- C09K8/14B [N: characterised by the composition of the clay][N0409]
- C09K8/16 characterised by the inorganic compounds other than clay[N0409]
- C09K8/18 characterised by the organic compounds[N0409]
- C09K8/20 Natural organic compounds or derivatives thereof, e.g. polysaccharides or lignin derivatives[N0409]
- C09K8/20B [N: Wood derivatives, e.g. lignosulfonate, tannin, tall oil, sulfite liquor][N0409]
- C09K8/20C [N: Derivatives of other natural products, e.g. cellulose, starch, sugars][N0409]
- C09K8/22 Synthetic organic compounds[N0409]
- C09K8/24 Polymers[N0409]
- C09K8/26 . . . Oil-in-water emulsions[N0409]
- C09K8/26B [N: containing inorganic additives][N0409]
- C09K8/28 containing organic additives[N0409]
- C09K8/32 . . Non-aqueous well-drilling compositions, e.g. oil-based[N0409]
- C09K8/34 . . . Organic liquids[N0409]
- C09K8/36 . . . Water-in-oil emulsions[N0409]
- C09K8/38 . . Gaseous or foamed well-drilling compositions[N0409]

- C09K8/40 . Spacer compositions, e.g. compositions used to separate well-drilling from cementing masses[N0409]

- C09K8/42 . Compositions for cementing, e.g. for cementing casings into boreholes; Compositions for plugging, e.g. for killing wells (compositions for plastering [C09K8/50](#))[N0409]
- C09K8/42A . . [N: specially adapted for sealing expandable pipes, e.g. of the non-hardening type] [N0705]
- C09K8/42B . . [N: using "spacer" compositions] [N0411]
- C09K8/42P . . [N: for plugging] [N0411]
- C09K8/42S . . [N: for squeeze cementing, e.g. for repairing] [N0411]
- C09K8/44 . . containing organic binders only[N0409]
- C09K8/46 . . containing inorganic binders, e.g. Portland cement[N0409]
- C09K8/467 . . . containing additives for specific purposes[N0409]
- C09K8/473 Density reducing additives, e.g. for obtaining foamed cement compositions[N0409]
- C09K8/48 Density increasing or weighting additives[N0409]
- C09K8/487 Fluid loss control additives; Additives for reducing or preventing circulation loss[N0409]
- C09K8/493 Additives for reducing or preventing gas migration[N0409]

- C09K8/50 . Compositions for plastering borehole walls, i.e. compositions for temporary

- consolidation of borehole walls (compositions for consolidating loose sand or the like around wells [C09K8/56](#))[N0409]
- C09K8/50S . . [N: using spacer compositions][N0409]
- C09K8/502 . . Oil-based compositions[N0409]
- C09K8/504 . . Compositions based on water or polar solvents ([C09K8/502](#) takes precedence)[N0409]
- C09K8/504B . . . [N: containing inorganic compounds][N0409]
- C09K8/506 . . . containing organic compounds[N0409]
- C09K8/508 macromolecular compounds [N: ([C09K8/512](#) takes precedence)][N0409]
- C09K8/508B [N: obtained by reactions only involving carbon-to-carbon unsaturated bonds][N0409]
- C09K8/508D [N: obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds][N0409]
- C09K8/512 containing cross-linking agents[N0409]
- C09K8/514 of natural origin, e.g. polysaccharides, cellulose ([C09K8/512](#) takes precedence)[N0409]
- C09K8/516 . . characterised by their form or by the form of their components, e.g. encapsulated material[N0409]
- C09K8/518 . . . Foams[N0409]
- C09K8/52 . Compositions for preventing, limiting or eliminating depositions, e.g. for cleaning[N0409]
- C09K8/524 . . organic depositions, e.g. paraffins or asphaltenes[N0409]
- C09K8/528 . . inorganic depositions, e.g. sulfates or carbonates[N0409]
- C09K8/532 . . . Sulfur[N0409]
- C09K8/536 . . characterised by their form or by the form of their components, e.g. encapsulated material[N0409]
- C09K8/54 . Compositions for <u>in situ</u> inhibition of corrosion in boreholes or wells[N0409]
- C09K8/56 . Compositions for consolidating loose sand or the like around wells without excessively decreasing the permeability thereof (compositions for plastering borehole walls [C09K8/50](#); [N: Soil-conditioning materials or soil-stabilising materials in general [C09K17/00](#)])[N0409]
- C09K8/565 . . Oil-based compositions [N0409]
- C09K8/57 . . Compositions based on water or polar solvents ([C09K8/565](#) takes precedence)[N0409]
- C09K8/57B . . . [N: containing inorganic compounds][N0409]
- C09K8/575 . . . containing organic compounds[N0409]
- C09K8/575B [N: Macromolecular compounds ([C09K8/575B6](#) takes precedence)][N0409]
- C09K8/575B2 [N: obtained by reactions only involving carbon-to-carbon unsaturated bonds][N0409]
- C09K8/575B4 [N: obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds][N0409]
- C09K8/575B6 [N: containing cross-linking agents][N0409]
- C09K8/575B8 [N: of natural origin, e.g. polysaccharides, cellulose ([C09K8/575B6](#) takes precedence)][N0409]

- C09K8/58 . Compositions for enhanced recovery methods for obtaining hydrocarbons, i.e. for improving the mobility of the oil, e.g. displacing fluids[N0409]
- C09K8/582 . . characterised by the use of bacteria[N0409]
- C09K8/584 . . characterised by the use of specific surfactants[N0409]
- C09K8/588 . . characterised by the use of specific polymers [N: (polymeric surfactants [C09K8/584](#))] [N0409] [C1105]
- C09K8/592 . . Compositions used in combination with generated heat, e.g. by steam injection[N0409]
- C09K8/594 . . Compositions used in combination with injected gas [N: e.g. CO2 or carbonated gas]([C09K8/592](#)) takes precedence[N0409]

- C09K8/60 . Compositions for stimulating production by acting on the underground formation[N0409]
- C09K8/60F . . [N: using spacer compositions][N0409]
- C09K8/60G . . [N: containing surfactants][N0409]
- C09K8/60G2 . . . [N: Polymeric surfactants] [N1105]
- C09K8/60H . . [N: containing biocides][N0409]
- C09K8/60K . . [N: specially adapted for clay formations][N0409]
- C09K8/60K2 . . . [N: Polymer compositions][N0409]
- C09K8/62 . . Compositions for forming crevices or fractures[N0409]
- C09K8/64 . . . Oil-based compositions[N0409]
- C09K8/66 . . . Compositions based on water or polar solvents ([C09K8/64](#) takes precedence)[N0409]
- C09K8/66B [N: containing inorganic compounds (proppants [C09K8/80](#))] [N0409] [C1105]
- C09K8/68 containing organic compounds [N0409] [C1105]

- [N: **Notes**
Documents classified in this group are also classified in groups [C09K8/88-C09K8/90A](#) according to the specific compositions
]
- C09K8/68B [N: containing cross-linking agents][N0409]
- C09K8/70 . . . characterised by their form or by the form of their components, e.g. foams[N0409]
- C09K8/70B [N: Foams][N0409]
- C09K8/70E [N: Encapsulated breakers][N0409]
- C09K8/72 . . . Eroding chemicals, e.g. acids[N0409]
- C09K8/72B [N: Compositions containing polymers][N0409]
- C09K8/74 combined with additives added for specific purposes[N0409]
- C09K8/76 for preventing or reducing fluid loss [N0409]
- C09K8/78 for preventing sealing [N0409]
- C09K8/80 . . Compositions for reinforcing fractures, e.g. compositions of proppants used to keep the fractures open[N0409]
- C09K8/80B . . . [N: Coated proppants] [N1105]
- C09K8/82 . . Oil-based compositions ([C09K8/64](#) takes precedence) [N1105]
- C09K8/84 . . Compositions based on water or polar solvents ([C09K8/66](#), [C09K8/82](#) take precedence) [N1105]

- C09K8/84A . . . [N: containing inorganic compounds] [N1105]
- C09K8/86 . . . containing organic compounds [N1105]
- C09K8/88 macromolecular compounds [N1105]
- C09K8/88A [N: obtained by reactions only involving carbon-to-carbon unsaturated bonds] [N1105]
- C09K8/88B [N: obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds] [N1105]
- C09K8/88C [N: containing cross-linking agents] [N1105]
- C09K8/90 of natural origin, e.g. polysaccharides, cellulose [N1105]
- C09K8/90A [N: Biopolymers] [N1105]
- C09K8/92 . . characterised by their form or by the form of their components, e.g. encapsulated material ([C09K8/70](#) takes precedence) [N1105]
- C09K8/94 . . . Foams [N1105]
- C09K9/00** **Tenebrescent materials, i.e. materials for which the range of wavelength for energy absorption is changed as result of excitation by some form of energy** ([N: liquid crystal materials [C09K19/00](#); photochromic glass [C03C4/06](#); in thermometers [G01K11/12](#); in photochromic filters [G02B5/23](#); in optical modulation devices [G02F1/00](#); photosensitive materials for photographic purposes [G03C](#); [N: in cathodochromic screens [H01J29/14](#)]) [C0307]
- [N: **Note**
[N0406]When classifying in group [C09K9/02](#) the chemical nature of the tenebrescent material can be further indexed by using ICO indexing codes chosen from [M09K211/00](#) to [M09K211/18B14](#)
]
- C09K9/02 . Organic tenebrescent materials
- C09K11/00** **Luminescent, e.g. electroluminescent, chemiluminescent materials** [C0205]
- C09K11/01 . Recovery of luminescent materials
- C09K11/02 . Use of particular materials as binders, particle coatings or suspension media therefor
- C09K11/02B . . [N: Use of non-luminescent materials other than binders]
- C09K11/04 . containing natural or artificial radioactive elements or unspecified radioactive elements
- C09K11/06 . containig organic luminescent materials
- [N: **Note**
[N0406]When classifying in groups [C09K11/06](#) and [C09K11/07](#) the chemical nature of the luminescent material can be further indexed by using ICO indexing codes chosen from [M09K211/00](#) to [M09K211/18B14](#)
]
- C09K11/07 . . having chemically interreactive components, e.g. reactive chemiluminescent compositions
- C09K11/08 . containing inorganic luminescent materials [N: Note In this group, magnesium is considered as an alkaline earth metal] [C0703]

[N: WARNING [N1002]

Groups [C09K11/08B](#) to [C09K11/08L](#), with the exception of [C09K11/08J](#) for classifying nitrides, are no longer used for classification of new documents. The backlog of this group is being continuously reclassified to subgroups [C09K11/54](#) to [C09K11/89C2](#)

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[N: Note [N1002]

In groups [C09K11/08](#) to [C09K11/89C2](#), in the absence of an indication to the contrary, classification of materials is made in the last appropriate place

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C09K11/08B	. .	[N: Chalcogenides]
C09K11/08B2	. . .	[N: with Zn or Cd]
C09K11/08B3	. . .	[N: with alkaline earth metals]
C09K11/08B4	. . .	[N: with rare earth metals]
C09K11/08C	. .	[N: Halogenides (C09K11/08B , C09K11/08D to C09K11/08L take precedence)]
C09K11/08C2	. . .	[N: with alkali or alkaline earth metals]
C09K11/08D	. .	[N: Aluminates; Silicates]
C09K11/08E	. .	[N: Germanates]
C09K11/08F	. .	[N: Vanadates]
C09K11/08G	. .	[N: Phosphates]
C09K11/08G2	. . .	[N: with alkaline earth metals]
C09K11/08G2B	. . . .	[N: with halogens]
C09K11/08G3	. . .	[N: with rare earth metals]
C09K11/08H	. .	[N: Borates]
C09K11/08J	. .	[N: Arsenides; Nitrides; Phosphides]
C09K11/08K	. .	[N: Sulfates]
C09K11/08L	. .	[N: Antimonates; Arsenates]
C09K11/54	. .	containing zinc or cadmium [N0502]
C09K11/55	. .	containing beryllium, magnesium, alkali metals or alkaline earth metals [N0502]
C09K11/56	. .	containing sulfur [N0502]
C09K11/56B	. . .	[N: Chalcogenides] [N0502]
C09K11/56B2	. . . .	[N: with zinc cadmium] [N0502]
C09K11/56B3	. . . .	[N: with alkaline earth metals] [N0502]
C09K11/57	. .	containing manganese or rhenium [N0502]
C09K11/57B	. . .	[N: Chalcogenides] [N0502]
C09K11/57B2	. . . .	[N: with zinc or cadmium] [N0502]
C09K11/57B3	. . . .	[N: with alkaline earth metals] [N0502]
C09K11/57K	. . .	[N: Sulfates] [N0502]
C09K11/58	. .	containing copper, silver or gold [N0502]
C09K11/58B	. . .	[N: Chalcogenides] [N0502]
C09K11/58B2	. . . .	[N: with zinc or cadmium] [N0502]
C09K11/58B3	. . . .	with alkaline earth metals [N0502]
C09K11/58K	. . .	[N: Sulfates] [N0502]

- C09K11/59 . . . containing silicon [N0502]
- C09K11/59B [N: Chalcogenides] [N0502]
- C09K11/59B2 [N: with zinc or cadmium] [N0502]
- C09K11/59K [N: Sulfates] [N0502]
- C09K11/60 . . . containing iron, cobalt or nickel [N0502]
- C09K11/60B [N: Chalcogenides] [N0502]
- C09K11/60B2 [N: with zinc or cadmium] [N0502]
- C09K11/60D [N: Silicates] [N0502]
- C09K11/61 . . . containing fluorine, chlorine, bromine, iodine or unspecified halogen elements [N0502]
- C09K11/61B [N: Chalcogenides] [N0502]
- C09K11/61B2 [N: with zinc or cadmium] [N0502]
- C09K11/61B3 [N: with alkali or alkaline earth metals] [N0502]
- C09K11/61C [N: Halogenides ([C09K11/61D](#) and [C09K11/61K](#) take precedence)] [N0502]
- C09K11/61C2 [N: with alkali or alkaline earth metals] [N0502]
- C09K11/61D [N: Silicates] [N0502]
- C09K11/61K [N: Sulfates] [N0502]
- C09K11/62 . . . containing gallium, indium or thallium [N0502]
- C09K11/62B [N: Chalcogenides] [N0502]
- C09K11/62B2 [N: with zinc or cadmium] [N0502]
- C09K11/62B3 [N: with alkaline earth metals] [N0502]
- C09K11/62C [N: Halogenides ([C09K11/62B](#) takes precedence)] [N0502]
- C09K11/62C2 [N: with alkali or alkaline earth metals] [N0502]
- C09K11/63 . . . containing boron [N0502]
- C09K11/63C [N: Halogenides ([C09K11/63D](#) and [C09K11/63K](#) take precedence)] [N0502]
- C09K11/63C2 [N: with alkali or alkaline earth metals] [N0502]
- C09K11/63D [N: Silicates] [N0502]
- C09K11/63K [N: Sulfates] [N0502]
- C09K11/64 . . . containing aluminium [N0502]
- C09K11/64B [N: Chalcogenides] [N0502]
- C09K11/64B2 [N: with zinc or cadmium] [N0502]
- C09K11/64B3 [N: with alkaline earth metals] [N0502]
- C09K11/64C [N: Halogenides ([C09K11/64B](#), [C09K11/64D](#) to [C09K11/64K](#) take precedence)] [N0502]
- C09K11/64C2 [N: with alkali or alkaline earth metals] [N0502]
- C09K11/64D [N: Silicates] [N0502]
- C09K11/64H [N: Borates] [N0502]
- C09K11/64K [N: Sulfates] [N0502]
- C09K11/65 . . . containing carbon (in organic compounds [C09K11/06](#)) [N0502]
- C09K11/65D [N: Aluminates; Silicates] [N0502]
- C09K11/66 . . . containing germanium, tin or lead [N0502]
- C09K11/66B [N: Chalcogenides] [N0502]
- C09K11/66B2 [N: with zinc or cadmium] [N0502]

C09K11/66B3	. . . .	[N: with alkaline earth metals] [N0502]
C09K11/66C	. . .	[N: Halogenides (C09K11/66B , C09K11/66D to C09K11/66K take precedence)] [N0502]
C09K11/66C2	. . . .	[N: with alkali or alkaline earth metals] [N0502]
C09K11/66D	. . .	[N: Aluminates; Silicates] [N0502]
C09K11/66H	. . .	[N: Borates] [N0502]
C09K11/66K	. . .	[N: Sulfates] [N0502]
C09K11/67	. .	containing refractory metals [N0502]
C09K11/67B	. . .	[N: Chalcogenides] [N0502]
C09K11/67B2	. . . .	[N: with zinc or cadmium] [N0502]
C09K11/67B3	. . . .	[N: with alkaline earth metals] [N0502]
C09K11/67C	. . .	[N: Halogenides (C09K11/67B , C09K11/67D to C09K11/67K take precedence)] [N0502]
C09K11/67C2	. . . .	[N: with alkali or alkaline earth metals] [N0502]
C09K11/67D	. . .	[N: Aluminates; Silicates] [N0502]
C09K11/67E	. . .	[N: Germanates] [N0502]
C09K11/67H	. . .	[N: Borates] [N0502]
C09K11/67K	. . .	[N: Sulfates] [N0502]
C09K11/68	. . .	containing chromium, molybdenum or tungsten [N0502]
C09K11/68B	. . . .	[N: Chalcogenides] [N0502]
C09K11/68B2	. . . . .	[N: with zinc or cadmium] [N0502]
C09K11/68B3	. . . . .	[N: with alkaline earth metals] [N0502]
C09K11/68D	. . . .	[N: Aluminates; Silicates] [N0502]
C09K11/68H	. . . .	[N: Borates] [N0502]
C09K11/68K	. . . .	[N: Sulfates] [N0502]
C09K11/69	. . .	containing vanadium [N0502]
C09K11/69B	. . . .	[N: Chalcogenides] [N0502]
C09K11/69B2	. . . . .	[N: with zinc or cadmium] [N0502]
C09K11/69B3	. . . . .	[N: with alkaline earth metals] [N0502]
C09K11/69C	. . . .	[N: Halogenides] [N0502]
C09K11/69D	. . . .	[N: Aluminates; Silicates] [N0502]
C09K11/70	. .	containing phosphorus [N0502]
C09K11/70B	. . .	[N: Chalcogenides] [N0502]
C09K11/70B2	. . . .	[N: with zinc and/or cadmium] [N0502]
C09K11/70C	. . .	Halogenides (C09K11/70B , C09K11/70D and C09K11/70H take precedence) [N0502]
C09K11/70D	. . .	[N: Aluminates; Silicates] [N0502]
C09K11/70H	. . .	[N: Borates] [N0502]
C09K11/71	. . .	also containing alkaline earth metals [N0502]
C09K11/71C	. . . .	[N: Halogenides (C09K11/71D takes precedence)] [N0502]
C09K11/71C2	. . . . .	[N: with alkali or alkaline earth metals] [N0502]
C09K11/71D	. . . .	[N: Aluminates; Silicates] [N0502]
C09K11/72	. . .	also containing halogen, e.g. halophosphates [N0502]

C09K11/72B	. . . .	[N: Chalcogenides] [N0502]
C09K11/72B3	. . . . .	[N: with alkaline earth metals] [N0502]
C09K11/72D	. . . .	[N: Aluminates; Silicates] [N0502]
C09K11/73	. . . .	also containing alkaline earth metals [N0502]
C09K11/74	. .	containing arsenic, antimony or bismuth [N0502]
C09K11/74B	. . .	[N: Chalcogenides] [N0502]
C09K11/74B2	. . . .	[N: with zinc or cadmium] [N0502]
C09K11/74B3	. . . .	[N: with alkaline earth metals] [N0502]
C09K11/74C	. . .	[N: Halogenides (C09K11/74B , C09K11/74D to C09K11/74J take precedence)] [N0502]
C09K11/74C2	. . . .	[N: with alkali or alkaline earth metals] [N0502]
C09K11/74D	. . .	[N: Aluminates; Silicates] [N0502]
C09K11/74E	. . .	[N: Germanates] [N0502]
C09K11/74F	. . .	[N: Vanadates; Chromates; Molybdates; Tungstates] [N0502]
C09K11/74G	. . .	[N: Phosphates] [N0502]
C09K11/74G2	. . . .	[N: with alkaline earth metals] [N0502]
C09K11/74G2B	. . . . .	[N: with halogens] [N0502]
C09K11/74H	. . .	[N: Borates] [N0502]
C09K11/74J	. . .	[N: Arsenides; Nitrides; Phosphides] [N0502]
C09K11/75	. . .	containing antimony [N0502]
C09K11/75B	. . . .	[N: Chalcogenides] [N0502]
C09K11/75B2	. . . . .	[N: with zinc or cadmium] [N0502]
C09K11/75B3	. . . . .	[N: with alkaline earth metals] [N0502]
C09K11/75C	. . . .	[N: Halogenides (C09K11/75B , C09K11/75D and C09K11/75F take precedence)] [N0502]
C09K11/75C2	. . . . .	[N: with alkali or alkaline earth metals] [N0502]
C09K11/75D	. . . .	[N: Aluminates; Silicates] [N0502]
C09K11/75F	. . . .	[N: Vanadates; Chromates; Molybdates; Tungstates] [N0502]
C09K11/76	. . . .	also containing phosphorus and halogen, e.g. halophosphates [N0502]
C09K11/76H	. . . . .	[N: Borates] [N0502]
C09K11/77	. .	containing rare earth metals [N0502]
C09K11/77B	. . .	[N: Chalcogenides] [N0502]
C09K11/77B2	. . . .	[N: with zinc or cadmium] [N0502]
C09K11/77B3	. . . .	[N: with alkaline earth metals] [N0502]
C09K11/77C	. . .	[N: Halogenides (C09K11/77B , C09K11/77D to C09K11/77L take precedence)] [N0502]
C09K11/77C2	. . . .	[N: with alkali or alkaline earth metals] [N0502]
C09K11/77D	. . .	[N: Aluminates; Silicates] [N0502]
C09K11/77E	. . .	[N: Germanates] [N0502]
C09K11/77F	. . .	[N: Vanadates; Chromates; Molybdates; Tungstates] [N0502]
C09K11/77G	. . .	[N: Phosphates] [N0502]
C09K11/77G2	. . . .	[N: with alkaline earth metals] [N0502]
C09K11/77G2B	. . . . .	[N: with halogens] [N0502]

C09K11/77H	. . .	[N: Borates] [N0502]
C09K11/77K	. . .	[N: Sulfates] [N0502]
C09K11/77L	. . .	[N: Antimonates; Arsenates] [N0502]
C09K11/77M	. . .	[N: containing cerium] [N0502]
C09K11/77M2	. . . .	[N: Chalcogenides] [N0502]
C09K11/77M2B	. . . . .	[N: with zinc or cadmium] [N0502]
C09K11/77M2D	. . . . .	[N: with alkaline earth metals] [N0502]
C09K11/77M4	. . . .	[N: Halogenides (C09K11/77M2 , C09K11/77M6 to C09K11/77M14 take precedence)] [N0502]
C09K11/77M4B	. . . . .	[N: with alkali or alkaline earth metals] [N0502]
C09K11/77M6	. . . .	[N: Aluminates; Silicates] [N0502]
C09K11/77M8	. . . .	[N: Vanadates; Chromates; Molybdates; Tungstates] [N0502]
C09K11/77M10	. . . .	[N: Phosphates] [N0502]
C09K11/77M10B	. . . . .	[N: with alkaline earth metals] [N0502]
C09K11/77M10B2	. . . . .	[N: with halogens] [N0502]
C09K11/77M12	. . . .	[N: Borates] [N0502]
C09K11/77M14	. . . .	[N: Sulfates] [N0502]
C09K11/77N	. . .	[N: comprising europium][N0502]
C09K11/77N2	. . . .	[N: Chalcogenides] [N0502]
C09K11/77N2B	. . . . .	[N: with zinc and cadmium] [N0502]
C09K11/77N2D	. . . . .	[N: with alkaline earth metals] [N0502]
C09K11/77N4	. . . .	[N: Halogenides] [N0502]
C09K11/77N4B	. . . . .	[N: with alkali or alkaline earth metals] [N0502]
C09K11/77N6	. . . .	[N: Aluminates; Silicates] [N0502]
C09K11/77N7	. . . .	[N: Germanates] [N0502]
C09K11/77N8	. . . .	[N: Vanadates; Chromates; Molybdates; Tungstates] [N0502]
C09K11/77N10	. . . .	[N: Phosphates] [N0502]
C09K11/77N10B	. . . . .	[N: with alkaline earth metals] [N0502]
C09K11/77N10B2	. . . . .	[N: with halogens] [N0502]
C09K11/77N12	. . . .	[N: Borates] [N0502]
C09K11/77N14	. . . .	[N: Sulfates] [N0502]
C09K11/77N16	. . . .	[N: Antimonates; Arsenates] [N0502]
C09K11/77P	. . .	[N: containing terbium] [N0502]
C09K11/77P2	. . . .	[N: Chalcogenides] [N0502]
C09K11/77P2B	. . . . .	[N: with zinc or cadmium] [N0502]
C09K11/77P2D	. . . . .	[N: with alkaline earth metals] [N0502]
C09K11/77P4	. . . .	[N: Halogenides (C09K11/77P2 , C09K11/77P6 to C09K11/77P12 take precedence)] [N0502]
C09K11/77P4B	. . . . .	[N: with alkali or alkaline earth metals] [N0502]
C09K11/77P6	. . . .	[N: Aluminates; Silicates] [N0502]
C09K11/77P7	. . . .	[N: Germanates] [N0502]
C09K11/77P8	. . . .	[N: Vanadates; Chromates; Molybdates; Tungstates] [N0502]
C09K11/77P10	. . . .	[N: Phosphates] [N0502]

C09K11/77P10B	. . . . .	[N: with alkaline earth metals] [N0502]
C09K11/77P10B2	. . . . .	[N: with halogens] [N0502]
C09K11/77P12	. . . . .	[N: Borates] [N0502]
C09K11/77Q	. . . . .	[N: containing neodymium] [N0502]
C09K11/77Q4	. . . . .	[N: Halogenides (C09K11/77Q6 takes precedence)] [N0502]
C09K11/77Q6	. . . . .	[N: Aluminates; Silicates] [N0502]
C09K11/77R	. . . . .	[N: containing samarium] [N0502]
C09K11/77R2	. . . . .	[N: Chalcogenides] [N0502]
C09K11/77R2D	. . . . .	[N: with alkaline earth metals] [N0502]
C09K11/77R4	. . . . .	[N: Halogenides (C09K11/77R2 , C09K11/77R6 and C09K11/77R8 take precedence)] [N0502]
C09K11/77R4B	. . . . .	[N: with alkali or alkaline earth metals] [N0502]
C09K11/77R6	. . . . .	[N: Aluminates; Silicates] [N0502]
C09K11/77R8	. . . . .	[N: Vanadates; Chromates; Molybdates; Tungstates] [N0502]
C09K11/77S	. . . . .	[N: containing two or more rare earth metals (containing europium C09K11/77T) [N0502] [C0702]
C09K11/77S2	. . . . .	[N: Chalcogenides] [N0502]
C09K11/77S2D	. . . . .	[N: with alkaline earth metals] [N0502]
C09K11/77S2H	. . . . .	[N: Oxides (C09K11/77S2D takes precedence)] [N0502]
C09K11/77S2H2	. . . . .	[N: Oxyhalogenides] [N0502]
C09K11/77S2H4	. . . . .	[N: Oxysulfides] [N0502]
C09K11/77S4	. . . . .	[N: Halogenides (C09K11/77S2 , C09K11/77S6 to C09K11/77S16 take precedence)] [N0502]
C09K11/77S4B	. . . . .	[N: with alkali or alkaline earth metal] [N0502]
C09K11/77S6	. . . . .	[N: Aluminates; Silicates] [N0502]
C09K11/77S7	. . . . .	[N: Germanates] [N0502]
C09K11/77S8	. . . . .	[N: Vanadates; Chromates; Molybdates; Tungstates] [N0502]
C09K11/77S10	. . . . .	[N: Phosphates] [N0502]
C09K11/77S10B	. . . . .	[N: with alkaline earth metals] [N0502]
C09K11/77S10B2	. . . . .	[N: with halogens] [N0502]
C09K11/77S12	. . . . .	[N: Borates] [N0502]
C09K11/77S14	. . . . .	[N: Sulfates] [N0502]
C09K11/77S16	. . . . .	[N: Antimonates; Arsenates] [N0502]
C09K11/77T	. . . . .	[N: containing two or more rare earth metals one of which being europium] [N0502] [C0702]
C09K11/77T2	. . . . .	[N: Chalcogenides] [N0502]
C09K11/77T2B	. . . . .	[N: with zinc and or cadmium] [N0502]
C09K11/77T2D	. . . . .	[N: with alkaline earth metals] [N0502]
C09K11/77T2H	. . . . .	[N: Oxides (C09K11/77T2B , C09K11/77t2d take precedence)] [N0502]
C09K11/77T2H2	. . . . .	[N: Oxyhalogenides] [N0502]
C09K11/77T2H4	. . . . .	[N: Oxysulfides] [N0502]
C09K11/77T4	. . . . .	[N: Halogenides (C09K11/77T2 , C09K11/77T6 to C09K11/77T16 take precedence)] [N0502]
C09K11/77T4B	. . . . .	[N: with alkali or alkaline earth metals] [N0502]

C09K11/77T6	. . . .	[N: Aluminates; Silicates] [N0502]
C09K11/77T7	. . . .	[N: Germanates] [N0502]
C09K11/77T8	. . . .	[N: Vanadates; Chromates; Molybdates; Tungstates] [N0502]
C09K11/77T10	. . . .	[N: Phosphates] [N0502]
C09K11/77T10B	. . . . .	[N: with alkaline earth metals] [N0502]
C09K11/77T12	. . . .	[N: Borates] [N0502]
C09K11/77T16	. . . .	[N: Antimonates; Arsenates] [N0502]
C09K11/87	. .	containing platina group metals [N0502]
C09K11/87B	. . .	[N: Chalcogenides] [N0502]
C09K11/87B2	. . . .	[N: with zinc or cadmium] [N0502]
C09K11/88	. .	containing selenium, tellurium or unspecified chalcogen elements [N0502]
C09K11/88B	. . .	[N: Chalcogenides] [N0502]
C09K11/88B2	. . . .	[N: with zinc or cadmium] [N0502]
C09K11/88B3	. . . .	[N: with alkaline earth metals] [N0502]
C09K11/88B4	. . . .	[N: with rare earth metals] [N0502]
C09K11/88H	. . .	[N: Borates] [N0502]
C09K11/89	. .	containing mercury [N0502]
C09K11/89B	. . .	[N: Chalcogenides] [N0502]
C09K11/89C	. . .	[N: Halogenides (C09K11/89B takes precedence)] [N0502]
C09K11/89C2	. . . .	[N: with alkali or alkaline metals] [N0502]

C09K13/00 **Etching, surface-brightening or pickling compositions** (for glass [C03C15/00](#), [N: [C03C25/66](#); for mortars, concrete, artificial or natural stone or ceramics [C04B41/53E](#)]; for metallic material [C23F](#), [C23G1/00](#), [C25F1/00](#); [N: for semi-conductors [H01L](#)]) [[C0110](#)]

Note

In groups [C09K13/02](#) to [C09K13/12](#), in the absence of an indication to the contrary, materials are classified in the last appropriate place.

C09K13/02	. .	containing an alkali metal hydroxide
C09K13/04	. .	containing an inorganic acid
C09K13/06	. . .	with organic material
C09K13/08	. . .	containing a fluorine compound
C09K13/10	. . .	containing a boron compound
C09K13/12	. .	containing heavy metal salts in an amount of at least 50% of the non-solvent components

C09K15/00 **Anti-oxidant composition; Compositions inhibiting chemical change** ([N: for use in well-specified applications, see the relevant places, e.g. in etching or pickling compositions [C09K13/00](#), [C23G](#)], in foodstuffs [A21D](#), [A23](#), [N: in association with organic compounds [C07C](#), [C07D](#)], in macromolecular compositions [C08](#); in liquid fuels or lubricants [C10](#); in fats, fatty substances, fatty oils or waxes [C11B5/00](#); in detergents [C11D](#); [N: coating or impregnating carbon or graphite based bodies to protect them from oxidation [C04B41/45](#)]; corrosion inhibiting compositions for metallic material [C23F11/00](#)) [[C0110](#)]

Note

In groups [C09K15/02](#) to [C09K15/34](#), in the absence of an indication to the contrary, a composition is classified in the last appropriate place.

- [C09K15/02](#) . containing inorganic compounds
- [C09K15/04](#) . containing organic compounds
- [C09K15/06](#) . . containing oxygen
- [C09K15/08](#) . . . containing a phenol or quinone moiety
- [C09K15/10](#) . . containing sulfur
- [C09K15/12](#) . . containing sulfur and oxygen
- [C09K15/14](#) . . . containing a phenol or quinone moiety
- [C09K15/16](#) . . containing nitrogen
- [C09K15/18](#) . . . containing an amine or imine moiety
- [C09K15/20](#) . . containing nitrogen and oxygen
- [C09K15/22](#) . . . containing an amide or imide moiety
- [C09K15/24](#) . . . containing a phenol or quinone moiety
- [C09K15/26](#) . . containing nitrogen and sulfur
- [C09K15/28](#) . . containing nitrogen, oxygen and sulfur
- [C09K15/30](#) . . containing heterocyclic ring with at least one nitrogen atom as ring member
- [C09K15/32](#) . . containing [N: two or more of] boron, silicon, phosphorus, selenium, tellurium or a metal [C9909]
- [C09K15/32B](#) . . . [N: containing only phosphorus]
- [C09K15/32B2](#) [N: containing phosphorus and sulfur]
- [C09K15/32D](#) . . . [N: containing only metals]
- [C09K15/32F](#) . . . [N: containing boron, silicon, selenium or tellurium]
- [C09K15/34](#) . containing plant or animal materials of unknown composition

C09K17/00

Soil-conditioning materials or soil-stabilising materials (specially adapted for boreholes or wells [C09K8/00](#); fertilisers [C05](#); consolidating by placing solidifying or pore-filling substances in the soil [E02D3/12](#))[[C0409](#)]

Notes

1. This group covers mixtures of soil-conditioning or soil-stabilising materials with fertilisers characterised by their soil-conditioning or soil-stabilising activity.
2. This group does not cover mixtures of soil-conditioning or soil-stabilising materials with fertilisers characterised by their fertilising activity which are covered by subclass [C05G](#).
3. For the purpose of classification in this group, the presence of fertilisers in the composition is not taken into account.
4. In groups [C09K17/02](#) to [C09K17/50](#), in the absence of an indication to the contrary, materials are classified in the last appropriate place.

- C09K17/02 . containing inorganic compounds only
- C09K17/04 . . applied in a physical form other than a solution or a grout, e.g. as granules or gases
- C09K17/04B . . . [N: applied as gases]
- C09K17/06 . . Calcium compounds, e.g. lime
- C09K17/08 . . Aluminium compounds, e.g. aluminium hydroxide
- C09K17/10 . . Cements, e.g. Portland cement
- C09K17/12 . . Water-soluble silicates, e.g. waterglass

- C09K17/14 . containing organic compounds only
- C09K17/16 . . applied in a physical form other than a solution or a grout, e.g. as platelets or granules
- C09K17/18 . . Prepolymers; Macromolecular compounds
- C09K17/20 . . . Vinyl polymers
- C09K17/22 Polyacrylates; Polymethacrylates
- C09K17/24 Condensation polymers of aldehydes or ketones
- C09K17/26 Phenol-aldehyde condensation polymers
- C09K17/28 Urea-aldehyde condensation polymers
- C09K17/30 . . . Polyisocyanates; Polyurethanes
- C09K17/32 . . . of natural origin, e.g. cellulosic materials
- C09K17/34 . . . Bituminous materials
- C09K17/36 . . Compounds having one or more carbon-to-silicon linkages
- C09K17/38 . . . Siloxanes

- C09K17/40 . containing mixtures of inorganic and organic compounds
- C09K17/42 . . Inorganic compounds mixed with organic active ingredients, e.g. accelerators
- C09K17/44 . . . the inorganic compound being cement
- C09K17/46 . . . the inorganic compound being a water-soluble silicate
- C09K17/48 . . Organic compounds mixed with inorganic active ingredients, e.g. polymerisation catalysts
- C09K17/50 . . . the organic compound being of natural origin, e.g. cellulose derivatives
- C09K17/52 . Mulches

C09K19/00 Liquid crystal materials

Notes

1. In groups [C09K19/02](#) to [C09K19/60](#), [N: with the exception of groups [C09K19/02A](#) to [C09K19/02K](#)], in the absence of an indication to the contrary, materials are classified in the last appropriate place.
2. Mixtures containing two or more liquid crystal compounds covered individually by the

same one of groups [C09K19/04](#) to [C09K19/40](#) are classified only in that group.

3. If liquid crystal components of the mixtures classified in groups [C09K19/42](#) to [C09K19/50](#) are of importance as such, they should also be classified according to the compounds in groups [C09K19/04](#) to [C09K19/40](#).

- [C09K19/02](#) . characterised by optical, electrical or physical properties of the components, in general
- [C09K19/02A](#) . . [N: Twisted Nematic (T.N.); Super Twisted Nematic (S.T.N.); Optical Mode Interference (O.M.I.)]
- [C09K19/02B](#) . . [N: Super Birefringence Effect (S.B.E.); Electrically Controlled Birefringence (E.C.B.)]
- [C09K19/02C](#) . . [N: Ferroelectric]
- [C09K19/02D](#) . . [N: Electroclinic]
- [C09K19/02E](#) . . [N: Ferrielectric; Ferromagnetic] [N1105]
- [C09K19/02F](#) . . [N: Ferronematic; Ferrosmetic] [N1105]
- [C09K19/02G](#) . . [N: Flexoelectric] [N1105]
- [C09K19/02H](#) . . [N: Antiferroelectrics] [N1105]
- [C09K19/02J](#) . . [N: Blue phase] [N1105]
- [C09K19/02K](#) . . [N: Cubic phase] [N1105]
- [C09K19/02L](#) . . [N: anticlinic] [N1202]
- [C09K19/04](#) . characterised by the chemical structure of the liquid crystal components, [N: e.g. by a specific unit] [C9604]
- [C09K19/04A](#) . . [N: the structure containing one or more specific, optionally substituted ring or ring systems] [N0002]
- [C09K19/04B](#) . . [N: Sugars (polysaccharides [C09K19/38A6](#))] [N9604]
- [C09K19/06](#) . . Non-steroidal liquid crystal compounds
- [C09K19/06A](#) . . . [N: Linear compounds without any rings] [N1202]
- [C09K19/06B](#) . . . [N: containing one non-condensed benzene ring] [N1202]
- [C09K19/06C](#) . . . [N: containing one non-condensed saturated non-aromatic ring, e.g. cyclohexane ring] [N1202]
- [C09K19/06D](#) . . . [N: containing one non-condensed unsaturated non-aromatic ring, e.g. cyclohexene ring] [N1202]
- [C09K19/06E](#) . . . [N: containing one heterocyclic ring having oxygen as heteroatom] [N1202]
- [C09K19/06F](#) . . . [N: containing one heterocyclic ring having nitrogen as heteroatom] [N1202]
- [C09K19/06G](#) . . . [N: containing one heterocyclic ring having sulfur as heteroatom] [N1202]
- [C09K19/08](#) . . . containing at least two non-condensed rings
- [C09K19/10](#) containing at least two benzene rings
- [C09K19/12](#) at least two benzene rings directly linked, e.g. biphenyls
- [C09K19/12B](#) [N: Compounds containing at least one asymmetric carbon atom] [N0002]
- [C09K19/14](#) linked by a carbon chain
- [C09K19/16](#) the chain containing carbon-to-carbon double bonds, e.g. stilbenes

C09K19/18	. . . . .	the chain containing carbon-to-carbon triple bonds, e.g. tolans
C09K19/20	. . . . .	linked by a chain containing carbon and oxygen atoms as chain links, e.g. esters [N: or ethers] [C1111]
C09K19/20A	. . . . .	[N: the chain containing -COO- or -OCO- groups]
C09K19/20A2	. . . . .	{7 dots} [N: containing additionally a linking group other than -COO- or -OCO-, e.g. -CH ₂ -CH ₂ -, -CH=CH-, -C=C-; containing at least one additional carbon atom in the chain containing -COO- or -OCO- groups, e.g. -(CH ₂) _m -COO-(CH ₂) _n -] [N9502]
C09K19/20A4	. . . . .	{7 dots} [N: Compounds containing at least one asymmetric carbon atom] [N9502] [C9506]
C09K19/20A4B	. . . . .	{8 dots} [N: containing additionally a linking group other than -COO- or -OCO-, e.g. -CH ₂ -CH ₂ -, -CH=CH-, -C=C-; containing at least one additional carbon atom in the chain containing -COO- or -OCO- groups, e.g. -COO-CH*-CH ₃] [N9502]
C09K19/22	. . . . .	linked by a chain containing carbon and nitrogen atoms as chain links, e.g. Schiff bases
C09K19/24	. . . . .	linked by a chain containing nitrogen-to-nitrogen bonds
C09K19/26	. . . . .	Azoxy compounds
C09K19/28	. . . . .	linked by a chain containing carbon and sulfur atoms as chain links, e.g. thioesters
C09K19/30	. . . . .	containing saturated or unsaturated non-aromatic rings, e.g. cyclohexane rings
C09K19/30A	. . . . .	[N: Cyclohexane rings]
C09K19/30A1	. . . . .	[N: Compounds containing at least two rings in which the different rings are directly linked (covalent bond)]
C09K19/30A2	. . . . .	[N: in which at least two rings are linked by a carbon chain containing carbon to carbon single bonds]
C09K19/30A3	. . . . .	[N: in which at least two rings are linked by a carbon chain containing carbon to carbon double bonds]
C09K19/30A4	. . . . .	[N: in which at least two rings are linked by a carbon chain containing carbon to carbon triple bonds]
C09K19/30A5	. . . . .	[N: in which the rings are linked by a chain containing carbon and oxygen atoms, e.g. esters or ethers] [C1111]
C09K19/30A5B	. . . . .	{7 dots} [N: chain containing -COO- or -OCO- groups][C1111]
C09K19/30A6	. . . . .	[N: in which at least two rings are linked by a chain containing nitrogen atoms]
C09K19/30A7	. . . . .	[N: in which at least two rings are linked by a chain containing sulfur atoms]
C09K19/30C	. . . . .	[N: Unsaturated non-aromatic rings, e.g. cyclohexene rings]
C09K19/32	. . . . .	containing condensed ring systems, i.e. fused, bridged or spiro ring systems
C09K19/32B	. . . . .	[N: Compounds containing a bicyclo [2,2,2] octane ring]
C09K19/32D	. . . . .	[N: Compounds containing a naphthalene ring or a completely or partially hydrogenated naphthalene ring] [N9901]
C09K19/34	. . . . .	containing at least one heterocyclic ring
C09K19/34A	. . . . .	[N: having oxygen as hetero atom (sugars C09K19/04B)] [C9604]
C09K19/34A2	. . . . .	[N: the heterocyclic ring being a five-membered ring]
C09K19/34A3	. . . . .	[N: the heterocyclic ring being a three-membered ring]
C09K19/34B	. . . . .	[N: having nitrogen as hetero atom]

C09K19/34B1	. . . . .	[N: the heterocyclic ring being a six-membered aromatic ring containing one nitrogen atom, e.g. pyridine] [N9409]
C09K19/34B1C	. . . . .	[N: Pyridine condensed or bridged with another ring system, e.g. quinoline or acridine] [N1202]
C09K19/34B2	. . . . .	[N: the heterocyclic ring being a six-membered aromatic ring containing two nitrogen atoms] [N9409]
C09K19/34B2A	. . . . .	[N: Pyrazine] [N9409]
C09K19/34B2B	. . . . .	[N: Pyridazine] [N9409]
C09K19/34B2C	. . . . .	[N: Uncondensed pyrimidines] [N9409]
C09K19/34B2C1	. . . . .	{7 dots} [N: Pyrimidine-tolane] [N9409]
C09K19/34B2C3	. . . . .	{7 dots} [N: Pyrimidine with a carbon chain containing at least one asymmetric carbon atom, i.e. optically active pyrimidines] [N9409]
C09K19/34B2C4	. . . . .	{7 dots} [N: Pyrimidine with at least another heterocycle in the chain] [N9409]
C09K19/34B2C5	. . . . .	{7 dots} [N: Pyrimidine with a specific end-group other than alkyl, alkoxy or -C*-] [N9409]
C09K19/34B2D	. . . . .	[N: Pyrimidine condensed or bridged with another ring system] [N9409]
C09K19/34B4	. . . . .	[N: the heterocyclic ring being a six-membered aromatic ring containing at least three nitrogen atoms] [N9409]
C09K19/34B5	. . . . .	[N: the heterocyclic ring being a five-membered aromatic ring containing at least one nitrogen atom] [N9409]
C09K19/34B5B	. . . . .	[N: containing at least two nitrogen atoms] [N9409]
C09K19/34B7	. . . . .	[N: the heterocyclic ring being a non-aromatic ring] [N9409]
C09K19/34B7C	. . . . .	[N: the heterocyclic ring containing nitrogen and oxygen atoms] [N1202]
C09K19/34B8	. . . . .	[N: the heterocyclic ring having more than 6 members, e.g. macrocycles, phthalocyanines] [N9409]
C09K19/34C	. . . . .	[N: having sulfur as hetero atom]
C09K19/34C2	. . . . .	[N: the heterocyclic ring containing sulfur and oxygen atoms] [N1202]
C09K19/34C4	. . . . .	[N: the heterocyclic ring containing sulfur and nitrogen atoms] [N1202]
C09K19/36	. .	Steroidal liquid crystal compounds
C09K19/38	. .	Polymers
C09K19/38A	. . .	[N: with mesogenic groups in the main chain]
C09K19/38A2	. . . .	[N: Polyesters; Polyester derivatives, e.g. polyamides]
C09K19/38A4	. . . .	[N: Polyethers]
C09K19/38A6	. . . .	[N: Polysaccharides or derivatives thereof]
C09K19/38A8	. . . .	[N: containing heterocycles having at least one nitrogen as ring hetero atom]
C09K19/38A8A	. . . . .	[N: containing triazine rings]
C09K19/38B	. . .	[N: with mesogenic groups in the side chain]
C09K19/38B2	. . . .	[N: Polyesters; Polyester derivatives]
C09K19/38B4	. . . .	[N: Polyvinyl derivatives]
C09K19/38B4A	. . . . .	[N: Polyvinylethers]
C09K19/38B4B	. . . . .	[N: Poly(meth)acrylate derivatives]
C09K19/38B4B2	. . . . .	[N: containing at least one asymmetric carbon atom]

- C09K19/38B4B4 [N: containing condensed ring systems]
- C09K19/38B4B6 [N: containing steroid groups]
- C09K19/38B4B8 [N: containing amino acid derivatives]
- C09K19/38B6 [N: Polyoxyalkylene polymers]
- C09K19/38B6A [N: Polyepoxides]
- C09K19/38B8 [N: Polyurethanes]
- C09K19/38B10 [N: Polypeptides]
- C09K19/38B12 [N: containing two or more mesogenic groups per monomer unit, e.g. polyitaconates, polymaleates]

- C09K19/40 . . containing elements other than carbon, hydrogen, halogen, oxygen, nitrogen or sulfur, e.g. silicon, metals
- C09K19/40B [N: containing deuterium] [N9702]
- C09K19/40D [N: containing boron or phosphorus] [N9702]
- C09K19/40F [N: containing silicon] [N9702]
- C09K19/40F2 [N: Polysiloxanes] [N9702]
- C09K19/42 . . Mixtures of liquid crystal compounds covered by two or more of the preceding groups [C09K19/06](#) to [C09K19/40](#)

- C09K19/44 . . . containing compounds with benzene rings directly linked
- C09K19/46 . . . containing esters
- C09K19/48 . . . containing Schiff bases
- C09K19/50 . . . containing steroidal liquid crystal compounds

- C09K19/52 . . characterised by components which are not liquid crystals, e.g. additives [N: with special physical aspect: solvents, solid particles]
- C09K19/54 . . Additives having no specific mesophase [N: characterised by their chemical composition]
- C09K19/54A [N: Macromolecular compounds]
- C09K19/54A3 [N: as dispersing or encapsulating medium around the liquid crystal]
- C09K19/56 . . . Aligning agents
- C09K19/58 . . Dopants or charge transfer agents
- C09K19/58A [N: Electrically active dopants, e.g. charge transfer agents]
- C09K19/58A2 [N: having a condensed ring system; macrocyclic compounds]
- C09K19/58B [N: Optically active dopants; chiral dopants]
- C09K19/58B2 [N: Heterocyclic compounds]
- C09K19/60 . . Pleochroic dyes
- C09K19/60A [N: Azoic]
- C09K19/60B [N: Anthroquinonic]
- C09K19/60C [N: Azomethine dyes] [N1201]
- C09K19/60D [N: Perylene dyes] [N1201]
- C09K19/60E [N: Quinoxaline dyes] [N1201]

- C09K21/00** **Fireproofing materials** (for use in a particular application, see the relevant places, e.g. fireproofing of wood [B27K](#), of polymers [C08](#), of textiles [D06M](#), of paper [D21H](#); fireproof paints [C09D5/18](#))

Note

In groups [C09K21/02](#) to [C09K21/14](#), in the absence of an indication to the contrary, materials are classified in the last appropriate place.

- [C09K21/02](#) . Inorganic materials
- [C09K21/04](#) . . containing phosphorus
- [C09K21/06](#) . Organic materials
- [C09K21/08](#) . . containing halogen
- [C09K21/10](#) . . containing nitrogen
- [C09K21/12](#) . . containing phosphorus
- [C09K21/14](#) . Macromolecular materials