

# CPC COOPERATIVE PATENT CLASSIFICATION

## C CHEMISTRY; METALLURGY

(NOTES omitted)

### CHEMISTRY

## C09 DYES; PAINTS; POLISHES; NATURAL RESINS; ADHESIVES; MISCELLANEOUS COMPOSITIONS; MISCELLANEOUS APPLICATIONS OF MATERIALS

## 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.

### WARNING

The following IPC groups are not used in the CPC scheme. Subject matter covered by these groups is classified in the following CPC groups:

C09K 11/78-C09K 11/86 covered by

<b>3/00</b>	<b>Materials not provided for elsewhere</b>	2003/1053	. . . {Elastomeric materials}
	<b>NOTE</b>	2003/1056	. . . {Moisture-curable materials}
	When classifying in groups	2003/1059	. . . {Heat-curable materials}
	<a href="#">C09K 3/10</a> - <a href="#">C09K 3/1028</a> the properties	2003/1062	. . . {UV-curable materials}
	and uses of the material can be further	2003/1065	. . . {Anaerobically hardenable materials}
	indexed by using indexing codes chosen from	2003/1068	. . . {Crosslinkable materials}
	<a href="#">C09K 2003/1034</a> - <a href="#">C09K 2003/1096</a> and the	2003/1071	. . . {Thixotropic materials}
	chemical nature of the materials can be further	2003/1075	. . . {Injection-mouldable materials}
	indexed by using indexing codes chosen from	2003/1078	. . . {Fire-resistant, heat-resistant materials}
	<a href="#">C09K 2200/00</a> - <a href="#">C09K 2200/0697</a>	2003/1081	. . . {Water-proofed materials}
3/10	. {Materials in mouldable or extrudable form} for	2003/1084	. . {Laminates}
	sealing or packing joints or covers ( <a href="#">filling pastes</a>	2003/1087	. . {Materials or components characterised by
	<a href="#">C09D 5/34</a> )		specific uses}
3/1003	. . {Pure inorganic mixtures}	2003/109	. . . {Crown caps}
3/1006	. . {characterised by the chemical nature of one of its	2003/1093	. . . {Cables}
	constituents}	2003/1096	. . . {Cylinder head gaskets}
3/1009	. . . {Fluorinated polymers, e.g. PTFE}	3/12	. Materials for stopping leaks, e.g. in radiators, in
3/1012	. . . {Sulfur-containing polymers, e.g. polysulfides}		tanks ( <a href="#">filling pastes</a> <a href="#">C09D 5/34</a> )
3/1015	. . . {Polysaccharides or derivatives thereof}	3/14	. Anti-slip materials; Abrasives {(products
3/1018	. . . {Macromolecular compounds having one or		specifically intended for the fabrication of abrasive
	more carbon-to-silicon linkages}		tools, blocks or papers, or for operations of the
3/1021	. . . {Polyurethanes or derivatives thereof}		kind of sand-blasting and barrelling <a href="#">B24B 31/14</a> ,
3/1025	. . {characterised by non-chemical features of one or		<a href="#">B24C 1/00</a> ; polishing compositions containing
	more of its constituents}		abrasive or grinding agents <a href="#">C09G 1/02</a> ; polishing
3/1028	. . . {Fibres}		of semi-conductors <a href="#">H01L</a> ; friction compositions for
3/1031	. . {Sealing waxes, e.g. sealing letters, bottles, or the		brakes or clutches <a href="#">F16D 69/02</a> }
	like}		<b>NOTE</b>
2003/1034	. . {Materials or components characterised by		In this group, boron and silicon are considered as
	specific properties}		being metals. Likewise for associations of carbon
2003/1037	. . . {Intumescent materials}		with metals, e.g. carbides.
2003/104	. . . {Water-swallowable materials}	3/1409	. . {Abrasive particles <u>per se</u> (preparation of
2003/1043	. . . {Non water-swallowable materials}		diamond <a href="#">C01B 32/25</a> )}
2003/1046	. . . {Water-absorbing materials}	3/1418	. . . {obtained by division of a mass agglomerated
2003/105	. . . {Water-soluble materials}		by sintering}

- 3/1427 . . . {obtained by division of a mass agglomerated by melting, at least partially, e.g. with a binder}
  - 3/1436 . . {Composite particles, e.g. coated particles}
  - 3/1445 . . . {the coating consisting exclusively of metals}
  - 3/1454 . . {Abrasive powders, suspensions and pastes for polishing}
  - 3/1463 . . . {Aqueous liquid suspensions}
  - 3/1472 . . . {Non-aqueous liquid suspensions}
  - 3/1481 . . . {Pastes, optionally in the form of blocks or sticks}
  - 3/149 . . {Antislip compositions}
  - 3/16 . Anti-static materials
  - 3/18 . 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 B01J 2/30); 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, C09K 5/00)
  - 3/185 . . {Thawing materials}
  - 3/20 . as substitutes for glycerol in its non-chemical uses, e.g. as a base in toilet creams or ointments
  - 3/22 . for dust-laying or dust-absorbing
  - 3/24 . for simulating ice or snow
  - 3/30 . for aerosols (aerosol containers B65D 83/14)
  - 3/32 . for absorbing liquids to remove pollution, e.g. oil, gasoline, fat
  - 5/00 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**
  - 5/02 . Materials undergoing a change of physical state when used (C09K 5/16, C09K 5/20 take precedence)
  - 5/04 . . the change of state being from liquid to vapour or vice versa
- NOTE**
- When classifying in groups C09K 5/042, C09K 5/044 and C09K 5/045 the chemical nature of the material can be further indexed by using indexing codes chosen from C09K 2205/00 - C09K 2205/48
- 5/041 . . . {for compression-type refrigeration systems}
  - 5/042 . . . . {comprising compounds containing carbon and hydrogen only}
  - 5/044 . . . . {comprising halogenated compounds}
  - 5/045 . . . . . {containing only fluorine as halogen}
  - 5/047 . . . {for absorption-type refrigeration systems}
  - 5/048 . . . {Boiling liquids as heat transfer materials}
  - 5/06 . . the change of state being from liquid to solid or vice versa
  - 5/063 . . . {Materials absorbing or liberating heat during crystallisation; Heat storage materials}
  - 5/066 . . . {Cooling mixtures; De-icing compositions}

- 5/08 . Materials not undergoing a change of physical state when used (C09K 5/16, C09K 5/20 take precedence)
- WARNING**
- The subgroups of C09K 5/08 might be incomplete as some of the patent documents classified in C09K 5/08 might need reclassification to one or more of groups C09K 5/10 - C09K 5/14
- 5/10 . . Liquid materials
  - 5/12 . . . Molten materials, i.e. materials solid at room temperature, e.g. metals or salts
  - 5/14 . . Solid materials, e.g. powdery or granular
  - 5/16 . Materials undergoing chemical reactions when used
  - 5/18 . . Non-reversible chemical reactions
- WARNING**
- This group might be incomplete as some of the patent documents classified in C09K 5/16 might need reclassification to C09K 5/18
- 5/20 . Antifreeze additives therefor, e.g. for radiator liquids (for application to surfaces C09K 3/18; inhibiting corrosion by liquids C23F 11/00)
- 8/00 Compositions for drilling of boreholes or wells; Compositions for treating boreholes or wells, e.g. for completion or for remedial operations**
- NOTE**
- {When classifying in groups C09K 8/00-C09K 8/40 and C09K 8/50-C09K 8/94, it is mandatory when appropriate to classify with indexing codes for aspects relating to compositions for drilling or treating boreholes or wells. The indexing codes are chosen from the groups C09K 2208/00-C09K 2208/34}
- 8/02 . Well-drilling compositions
- NOTE**
- In groups C09K 8/02-C09K 8/38, in the absence of an indication to the contrary, classification is made in the last appropriate place.
- 8/03 . . Specific additives for general use in well-drilling compositions
  - 8/032 . . . {Inorganic additives}
  - 8/035 . . . Organic additives
  - 8/04 . . Aqueous well-drilling compositions
  - 8/05 . . . containing inorganic compounds only, e.g. mixtures of clay and salt
  - 8/06 . . . Clay-free compositions (containing inorganic compounds only C09K 8/05)
  - 8/08 . . . . containing natural organic compounds, e.g. polysaccharides, or derivatives thereof
  - 8/10 . . . . . Cellulose or derivatives thereof
  - 8/12 . . . . containing synthetic organic macromolecular compounds or their precursors
  - 8/14 . . . Clay-containing compositions (containing inorganic compounds C09K 8/05)
  - 8/145 . . . . {characterised by the composition of the clay}
  - 8/16 . . . . characterised by the inorganic compounds other than clay

- 8/18 . . . . characterised by the organic compounds
- 8/20 . . . . Natural organic compounds or derivatives thereof, e.g. polysaccharides or lignin derivatives
- 8/203 . . . . . { Wood derivatives, e.g. liginosulfonate, tannin, tall oil, sulfite liquor }
- 8/206 . . . . . { Derivatives of other natural products, e.g. cellulose, starch, sugars }
- 8/22 . . . . . Synthetic organic compounds
- 8/24 . . . . . Polymers
- 8/26 . . . Oil-in-water emulsions
- 8/265 . . . . { containing inorganic additives }
- 8/28 . . . . containing organic additives
- 8/32 . . Non-aqueous well-drilling compositions, e.g. oil-based
- 8/34 . . . Organic liquids
- 8/36 . . . Water-in-oil emulsions
- 8/38 . . Gaseous or foamed well-drilling compositions
- 8/40 . Spacer compositions, e.g. compositions used to separate well-drilling from cementing masses
- 8/42 . Compositions for cementing, e.g. for cementing casings into boreholes; Compositions for plugging, e.g. for killing wells (compositions for plastering C09K 8/50)
- 8/422 . . { specially adapted for sealing expandable pipes, e.g. of the non-hardening type }
- 8/424 . . { using "spacer" compositions }
- 8/426 . . { for plugging }
- 8/428 . . { for squeeze cementing, e.g. for repairing }
- 8/44 . . containing organic binders only
- 8/46 . . containing inorganic binders, e.g. Portland cement
- 8/467 . . . containing additives for specific purposes
- 8/473 . . . Density reducing additives, e.g. for obtaining foamed cement compositions
- 8/48 . . . Density increasing or weighting additives
- 8/487 . . . Fluid loss control additives; Additives for reducing or preventing circulation loss
- 8/493 . . . Additives for reducing or preventing gas migration
- 8/50 . Compositions for plastering borehole walls, i.e. compositions for temporary consolidation of borehole walls (compositions for consolidating loose sand or the like around wells C09K 8/56)
- 8/501 . . { using spacer compositions }
- 8/502 . . Oil-based compositions
- 8/504 . . Compositions based on water or polar solvents (C09K 8/502 takes precedence)
- 8/5045 . . . { containing inorganic compounds }
- 8/506 . . . containing organic compounds
- 8/508 . . . macromolecular compounds { (C09K 8/512 takes precedence) }
- 8/5083 . . . . . { obtained by reactions only involving carbon-to-carbon unsaturated bonds }
- 8/5086 . . . . . { obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds }
- 8/512 . . . . . containing cross-linking agents
- 8/514 . . . . . of natural origin, e.g. polysaccharides, cellulose (C09K 8/512 takes precedence)
- 8/516 . . characterised by their form or by the form of their components, e.g. encapsulated material
- 8/518 . . . Foams
- 8/52 . Compositions for preventing, limiting or eliminating depositions, e.g. for cleaning
- 8/524 . . organic depositions, e.g. paraffins or asphaltenes
- 8/528 . . inorganic depositions, e.g. sulfates or carbonates
- 8/532 . . . Sulfur
- 8/536 . . characterised by their form or by the form of their components, e.g. encapsulated material
- 8/54 . Compositions for in situ inhibition of corrosion in boreholes or wells
- 8/56 . Compositions for consolidating loose sand or the like around wells without excessively decreasing the permeability thereof (compositions for plastering borehole walls C09K 8/50; { Soil-conditioning materials or soil-stabilising materials in general C09K 17/00 } )
- 8/565 . . Oil-based compositions
- 8/57 . . Compositions based on water or polar solvents (C09K 8/565 takes precedence)
- 8/572 . . . { containing inorganic compounds }
- 8/575 . . . containing organic compounds
- 8/5751 . . . . { Macromolecular compounds (C09K 8/5756 takes precedence) }
- 8/5753 . . . . . { obtained by reactions only involving carbon-to-carbon unsaturated bonds }
- 8/5755 . . . . . { obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds }
- 8/5756 . . . . . { containing cross-linking agents }
- 8/5758 . . . . . { of natural origin, e.g. polysaccharides, cellulose (C09K 8/5756 takes precedence) }
- 8/58 . Compositions for enhanced recovery methods for obtaining hydrocarbons, i.e. for improving the mobility of the oil, e.g. displacing fluids
- 8/582 . . characterised by the use of bacteria
- 8/584 . . characterised by the use of specific surfactants
- 8/588 . . characterised by the use of specific polymers { (polymeric surfactants C09K 8/584) }
- 8/592 . . Compositions used in combination with generated heat, e.g. by steam injection
- 8/594 . . Compositions used in combination with injected gas { , e.g. CO<sub>2</sub> or carbonated gas } (C09K 8/592 takes precedence)
- 8/60 . Compositions for stimulating production by acting on the underground formation
- 8/601 . . { using spacer compositions }
- 8/602 . . { containing surfactants }
- 8/604 . . . { Polymeric surfactants }
- 8/605 . . { containing biocides }
- 8/607 . . { specially adapted for clay formations }
- 8/608 . . . { Polymer compositions }
- 8/62 . . Compositions for forming crevices or fractures
- 8/64 . . . Oil-based compositions
- 8/66 . . . Compositions based on water or polar solvents (C09K 8/64 takes precedence)
- 8/665 . . . . { containing inorganic compounds (proppants C09K 8/80) }
- 8/68 . . . . containing organic compounds

**NOTE**

Documents classified in this group are also classified in groups

## C09K

C09K 8/68

(continued)

[C09K 8/88 - C09K 8/905](#) according to the specific compositions

- 8/685 . . . . . {containing cross-linking agents}
- 8/70 . . . characterised by their form or by the form of their components, e.g. foams
- 8/703 . . . . . {Foams}
- 8/706 . . . . . {Encapsulated breakers}
- 8/72 . . . Eroding chemicals, e.g. acids
- 8/725 . . . . . {Compositions containing polymers}
- 8/74 . . . . . combined with additives added for specific purposes
- 8/76 . . . . . for preventing or reducing fluid loss
- 8/78 . . . . . for preventing sealing
- 8/80 . . Compositions for reinforcing fractures, e.g. compositions of proppants used to keep the fractures open
- 8/805 . . . {Coated proppants}
- 8/82 . . Oil-based compositions ([C09K 8/64](#) takes precedence)
- 8/84 . . Compositions based on water or polar solvents ([C09K 8/66](#), [C09K 8/82](#) take precedence)
- 8/845 . . . {containing inorganic compounds}
- 8/86 . . . containing organic compounds
- 8/88 . . . . . macromolecular compounds
- 8/882 . . . . . {obtained by reactions only involving carbon-to-carbon unsaturated bonds}
- 8/885 . . . . . {obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds}
- 8/887 . . . . . {containing cross-linking agents}
- 8/90 . . . . . of natural origin, e.g. polysaccharides, cellulose
- 8/905 . . . . . {Biopolymers}
- 8/92 . . characterised by their form or by the form of their components, e.g. encapsulated material ([C09K 8/70](#) takes precedence)
- 8/94 . . . Foams

**9/00 Tenebrescent materials, i.e. materials for which the range of wavelengths for energy absorption is changed as result of excitation by some form of energy** ({liquid crystal materials [C09K 19/00](#); photochromic glass [C03C 4/06](#); in thermometers [G01K 11/12](#); in photochromic filters [G02B 5/23](#); in optical modulation devices [G02F 1/00](#)}; photosensitive materials for photographic purposes [G03C](#); [in cathodochromic screens [H01J 29/14](#)])

### NOTE

When classifying in groups [C09K 9/02](#) the chemical nature of the tenebrescent material can be further indexed by using indexing codes chosen from [C09K 2211/00 - C09K 2211/188](#)

9/02 . Organic tenebrescent materials

**11/00 Luminescent, e.g. electroluminescent, chemiluminescent materials**

- 11/01 . Recovery of luminescent materials
- 11/02 . Use of particular materials as binders, particle coatings or suspension media therefor
- 11/025 . . {Use of non-luminescent materials other than binders}
- 11/04 . containing natural or artificial radioactive elements or unspecified radioactive elements

11/06

- . containing organic luminescent materials

### NOTE

When classifying in groups [C09K 11/06](#) and [C09K 11/07](#) the chemical nature of the luminescent material can be further indexed by using indexing codes chosen from [C09K 2211/00 - C09K 2211/188](#)

11/07

- . . having chemically interreactive components, e.g. reactive chemiluminescent compositions

11/08

- . containing inorganic luminescent materials

### NOTES

1. In groups [C09K 11/08 - C09K 11/897](#), in the absence of an indication to the contrary, classification of materials is made in the last appropriate place
2. { In this group, magnesium is considered as an alkaline earth metal }

### WARNING

Groups [C09K 11/0805 - C09K 11/0894](#), with the exception of [C09K 11/0883](#) for classifying nitrides, are no longer used for classification of new documents. The backlog of this group is being continuously reclassified to subgroups [C09K 11/54 - C09K 11/897](#)

11/0805

- . . {Chalcogenides}

11/0811

- . . . {with Zn or Cd}

11/0816

- . . . {with alkaline earth metals}

11/0822

- . . . {with rare earth metals}

11/0827

- . . {Halogenides ([C09K 11/0805](#), [C09K 11/0838 - C09K 11/0894](#) take precedence)}

11/0833

- . . . {with alkali or alkaline earth metals}

11/0838

- . . {Aluminates; Silicates}

11/0844

- . . {Germanates}

11/085

- . . {Vanadates}

11/0855

- . . {Phosphates}

11/0861

- . . . {with alkaline earth metals}

11/0866

- . . . . {with halogens}

11/0872

- . . . {with rare earth metals}

11/0877

- . . {Borates}

11/0883

- . . {Arsenides; Nitrides; Phosphides}

11/0888

- . . {Sulfates}

11/0894

- . . {Antimonates; Arsenates}

11/54

- . . containing zinc or cadmium

11/55

- . . containing beryllium, magnesium, alkali metals or alkaline earth metals

11/56

- . . containing sulfur

11/562

- . . . {Chalcogenides}

11/565

- . . . . {with zinc cadmium}

11/567

- . . . . {with alkaline earth metals}

11/57

- . . containing manganese or rhenium

11/572

- . . . {Chalcogenides}

11/574

- . . . . {with zinc or cadmium}

11/576

- . . . . {with alkaline earth metals}

11/578

- . . . {Sulfates}

11/58

- . . containing copper, silver or gold

11/582

- . . . {Chalcogenides}

11/584

- . . . . {with zinc or cadmium}

11/586

- . . . . {with alkaline earth metals}

11/588

- . . . {Sulfates}

11/59	. . containing silicon	11/677	. . . {Germanates}
11/592	. . . {Chalcogenides}	11/678	. . . {Borates}
11/595	. . . . {with zinc or cadmium}	11/679	. . . {Sulfates}
11/597	. . . {Sulfates}	11/68	. . . containing chromium, molybdenum or tungsten
11/60	. . containing iron, cobalt or nickel	11/681	. . . . {Chalcogenides}
11/602	. . . {Chalcogenides}	11/682	. . . . . {with zinc or cadmium}
11/605	. . . . {with zinc or cadmium}	11/684	. . . . . {with alkaline earth metals}
11/607	. . . {Silicates}	11/685	. . . . {Aluminates; Silicates}
11/61	. . containing fluorine, chlorine, bromine, iodine or unspecified halogen elements	11/687	. . . . {Borates}
11/611	. . . {Chalcogenides}	11/688	. . . . {Sulfates}
11/612	. . . . {with zinc or cadmium}	11/69	. . . containing vanadium
11/613	. . . . {with alkali or alkaline earth metals}	11/691	. . . . {Chalcogenides}
11/615	. . . {Halogenides ( <a href="#">C09K 11/617</a> and <a href="#">C09K 11/618</a> take precedence)}	11/693	. . . . . {with zinc or cadmium}
11/616	. . . . {with alkali or alkaline earth metals}	11/695	. . . . . {with alkaline earth metals}
11/617	. . . {Silicates}	11/696	. . . . {Halogenides}
11/618	. . . {Sulfates}	11/698	. . . . {Aluminates; Silicates}
11/62	. . containing gallium, indium or thallium	11/70	. . containing phosphorus
11/621	. . . {Chalcogenides}	11/701	. . . {Chalcogenides}
11/623	. . . . {with zinc or cadmium}	11/703	. . . . {with zinc and/or cadmium}
11/625	. . . . {with alkaline earth metals}	11/705	. . . {Halogenides ( <a href="#">C09K 11/701</a> , <a href="#">C09K 11/706</a> and <a href="#">C09K 11/708</a> take precedence)}
11/626	. . . {Halogenides ( <a href="#">C09K 11/621</a> takes precedence)}	11/706	. . . {Aluminates; Silicates}
11/628	. . . . {with alkali or alkaline earth metals}	11/708	. . . {Borates}
11/63	. . containing boron	11/71	. . . also containing alkaline earth metals
11/632	. . . {Halogenides ( <a href="#">C09K 11/636</a> and <a href="#">C09K 11/638</a> take precedence)}	11/712	. . . . {Halogenides ( <a href="#">C09K 11/717</a> takes precedence)}
11/634	. . . . {with alkali or alkaline earth metals}	11/715	. . . . . {with alkali or alkaline earth metals}
11/636	. . . {Silicates}	11/717	. . . . {Aluminates; Silicates}
11/638	. . . {Sulfates}	11/72	. . . also containing halogen, e.g. halophosphates
11/64	. . containing aluminium	11/722	. . . . {Chalcogenides}
11/641	. . . {Chalcogenides}	11/725	. . . . . {with alkaline earth metals}
11/642	. . . . {with zinc or cadmium}	11/727	. . . . {Aluminates; Silicates}
11/643	. . . . {with alkaline earth metals}	11/73	. . . . also containing alkaline earth metals
11/644	. . . {Halogenides ( <a href="#">C09K 11/641</a> , <a href="#">C09K 11/646</a> - <a href="#">C09K 11/648</a> take precedence)}	11/74	. . containing arsenic, antimony or bismuth
11/645	. . . . {with alkali or alkaline earth metals}	11/7407	. . . {Chalcogenides}
11/646	. . . {Silicates}	11/7414	. . . . {with zinc or cadmium}
11/647	. . . {Borates}	11/7421	. . . . {with alkaline earth metals}
11/648	. . . {Sulfates}	11/7428	. . . {Halogenides ( <a href="#">C09K 11/7407</a> , <a href="#">C09K 11/7442</a> - <a href="#">C09K 11/7492</a> take precedence)}
11/65	. . containing carbon (in organic compounds <a href="#">C09K 11/06</a> )	11/7435	. . . . {with alkali or alkaline earth metals}
11/655	. . . {Aluminates; Silicates}	11/7442	. . . {Aluminates; Silicates}
11/66	. . containing germanium, tin or lead	11/745	. . . {Germanates}
11/661	. . . {Chalcogenides}	11/7457	. . . {Vanadates; Chromates; Molybdates; Tungstates}
11/662	. . . . {with zinc or cadmium}	11/7464	. . . {Phosphates}
11/663	. . . . {with alkaline earth metals}	11/7471	. . . . {with alkaline earth metals}
11/664	. . . {Halogenides ( <a href="#">C09K 11/661</a> , <a href="#">C09K 11/666</a> - <a href="#">C09K 11/668</a> take precedence)}	11/7478	. . . . . {with halogens}
11/665	. . . . {with alkali or alkaline earth metals}	11/7485	. . . {Borates}
11/666	. . . {Aluminates; Silicates}	11/7492	. . . {Arsenides; Nitrides; Phosphides}
11/667	. . . {Borates}	11/75	. . . containing antimony
11/668	. . . {Sulfates}	11/751	. . . . {Chalcogenides}
11/67	. . containing refractory metals	11/752	. . . . . {with zinc or cadmium}
11/671	. . . {Chalcogenides}	11/753	. . . . . {with alkaline earth metals}
11/672	. . . . {with zinc or cadmium}	11/755	. . . . {Halogenides ( <a href="#">C09K 11/751</a> , <a href="#">C09K 11/757</a> and <a href="#">C09K 11/758</a> take precedence)}
11/673	. . . . {with alkaline earth metals}	11/756	. . . . . {with alkali or alkaline earth metals}
11/674	. . . {Halogenides ( <a href="#">C09K 11/671</a> , <a href="#">C09K 11/676</a> - <a href="#">C09K 11/679</a> take precedence)}	11/757	. . . . {Aluminates; Silicates}
11/675	. . . . {with alkali or alkaline earth metals}	11/758	. . . . {Vanadates; Chromates; Molybdates; Tungstates}
11/676	. . . {Aluminates; Silicates}	11/76	. . . . also containing phosphorus and halogen, e.g. halophosphates



11/765	. . . . . {Borates}	11/7751	. . . . . {Vanadates; Chromates; Molybdates; Tungstates}
11/77	. . containing rare earth metals	11/7752	. . . . . {Phosphates}
11/7701	. . . {Chalogenides}	11/7753	. . . . . {with alkaline earth metals}
11/7702	. . . . . {with zinc or cadmium}	11/7754	. . . . . {with halogens}
11/7703	. . . . . {with alkaline earth metals}	11/7755	. . . . . {Borates}
11/7704	. . . {Halogenides ( <a href="#">C09K 11/7701</a> , <a href="#">C09K 11/7706</a> - <a href="#">C09K 11/7714</a> take precedence))}	11/7756	. . . {containing neodymium}
11/7705	. . . . . {with alkali or alkaline earth metals}	11/7757	. . . . . {Halogenides ( <a href="#">C09K 11/7758</a> takes precedence))}
11/7706	. . . {Aluminates; Silicates}	11/7758	. . . . . {Aluminates; Silicates}
11/7707	. . . {Germanates}	11/7759	. . . {containing samarium}
11/7708	. . . {Vanadates; Chromates; Molybdates; Tungstates}	11/776	. . . . . {Chalcogenides}
11/7709	. . . {Phosphates}	11/7761	. . . . . {with alkaline earth metals}
11/771	. . . . . {with alkaline earth metals}	11/7762	. . . . . {Halogenides ( <a href="#">C09K 11/776</a> , <a href="#">C09K 11/7764</a> and <a href="#">C09K 11/7765</a> take precedence))}
11/7711	. . . . . {with halogens}	11/7763	. . . . . {with alkali or alkaline earth metals}
11/7712	. . . {Borates}	11/7764	. . . . . {Aluminates; Silicates}
11/7713	. . . {Sulfates}	11/7765	. . . . . {Vanadates; Chromates; Molybdates; Tungstates}
11/7714	. . . {Antimonates; Arsenates}	11/7766	. . . {containing two or more rare earth metals (containing europium <a href="#">C09K 11/7783</a> )}
11/7715	. . . {containing cerium}	11/7767	. . . . . {Chalcogenides}
11/7716	. . . . . {Chalcogenides}	11/7768	. . . . . {with alkaline earth metals}
11/7717	. . . . . {with zinc or cadmium}	11/7769	. . . . . {Oxides ( <a href="#">C09K 11/7768</a> takes precedence))}
11/7718	. . . . . {with alkaline earth metals}	11/777	. . . . . {Oxyhalogenides}
11/7719	. . . . . {Halogenides ( <a href="#">C09K 11/7716</a> , <a href="#">C09K 11/7721</a> - <a href="#">C09K 11/7727</a> take precedence))}	11/7771	. . . . . {Oxysulfides}
11/772	. . . . . {with alkali or alkaline earth metals}	11/7772	. . . . . {Halogenides ( <a href="#">C09K 11/7767</a> , <a href="#">C09K 11/7774</a> - <a href="#">C09K 11/7782</a> take precedence))}
11/7721	. . . . . {Aluminates; Silicates}	11/7773	. . . . . {with alkali or alkaline earth metal}
11/7722	. . . . . {Vanadates; Chromates; Molybdates; Tungstates}	11/7774	. . . . . {Aluminates; Silicates}
11/7723	. . . . . {Phosphates}	11/7775	. . . . . {Germanates}
11/7724	. . . . . {with alkaline earth metals}	11/7776	. . . . . {Vanadates; Chromates; Molybdates; Tungstates}
11/7725	. . . . . {with halogens}	11/7777	. . . . . {Phosphates}
11/7726	. . . . . {Borates}	11/7778	. . . . . {with alkaline earth metals}
11/7727	. . . . . {Sulfates}	11/7779	. . . . . {with halogens}
11/7728	. . . {comprising europium}	11/778	. . . . . {Borates}
11/7729	. . . . . {Chalcogenides}	11/7781	. . . . . {Sulfates}
11/773	. . . . . {with zinc and cadmium}	11/7782	. . . . . {Antimonates; Arsenates}
11/7731	. . . . . {with alkaline earth metals}	11/7783	. . . {containing two or more rare earth metals one of which being europium}
11/7732	. . . . . {Halogenides}	11/7784	. . . . . {Chalcogenides}
11/7733	. . . . . {with alkali or alkaline earth metals}	11/7785	. . . . . {with zinc and or cadmium}
11/7734	. . . . . {Aluminates; Silicates}	11/7786	. . . . . {with alkaline earth metals}
11/7735	. . . . . {Germanates}	11/7787	. . . . . {Oxides ( <a href="#">C09K 11/7785</a> , <a href="#">C09K 11/7786</a> take precedence))}
11/7736	. . . . . {Vanadates; Chromates; Molybdates; Tungstates}	11/7788	. . . . . {Oxyhalogenides}
11/7737	. . . . . {Phosphates}	11/7789	. . . . . {Oxysulfides}
11/7738	. . . . . {with alkaline earth metals}	11/779	. . . . . {Halogenides ( <a href="#">C09K 11/7784</a> , <a href="#">C09K 11/7792</a> - <a href="#">C09K 11/7798</a> take precedence))}
11/7739	. . . . . {with halogens}	11/7791	. . . . . {with alkali or alkaline earth metals}
11/774	. . . . . {Borates}	11/7792	. . . . . {Aluminates; Silicates}
11/7741	. . . . . {Sulfates}	11/7793	. . . . . {Germanates}
11/7742	. . . . . {Antimonates; Arsenates}	11/7794	. . . . . {Vanadates; Chromates; Molybdates; Tungstates}
11/7743	. . . {containing terbium}	11/7795	. . . . . {Phosphates}
11/7744	. . . . . {Chalcogenides}	11/7796	. . . . . {with alkaline earth metals}
11/7745	. . . . . {with zinc or cadmium}	11/7797	. . . . . {Borates}
11/7746	. . . . . {with alkaline earth metals}	11/7798	. . . . . {Antimonates; Arsenates}
11/7747	. . . . . {Halogenides ( <a href="#">C09K 11/7744</a> , <a href="#">C09K 11/7749</a> - <a href="#">C09K 11/7755</a> take precedence))}		
11/7748	. . . . . {with alkali or alkaline earth metals}		
11/7749	. . . . . {Aluminates; Silicates}		
11/775	. . . . . {Germanates}		

- 11/87 . . containing platina group metals
- 11/873 . . . {Chalcogenides}
- 11/876 . . . . {with zinc or cadmium}
- 11/88 . . containing selenium, tellurium or unspecified chalcogen elements
- 11/881 . . . {Chalcogenides}
- 11/883 . . . . {with zinc or cadmium}
- 11/885 . . . . {with alkaline earth metals}
- 11/886 . . . . {with rare earth metals}
- 11/888 . . . {Borates}
- 11/89 . . containing mercury
- 11/892 . . . {Chalcogenides}
- 11/895 . . . {Halogenides ([C09K 11/892](#) takes precedence)}
- 11/897 . . . . {with alkali or alkaline metals}

**13/00 Etching, surface-brightening or pickling compositions** (for glass [C03C 15/00](#), {[C03C 25/66](#); for mortars, concrete, artificial or natural stone or ceramics [C04B 41/5338](#) } ; for metallic material [C23F](#), [C23G 1/00](#), [C25F 1/00](#); {for semi-conductors [H01L](#)})

#### NOTE

In groups [C09K 13/02](#) - [C09K 13/12](#), in the absence of an indication to the contrary, materials are classified in the last appropriate place.

- 13/02 . containing an alkali metal hydroxide
- 13/04 . containing an inorganic acid
- 13/06 . . with organic material
- 13/08 . . containing a fluorine compound
- 13/10 . . containing a boron compound
- 13/12 . containing heavy metal salts in an amount of at least 50% of the non-solvent components

**15/00 Anti-oxidant compositions; Compositions inhibiting chemical change** ({for use in well-specified applications, see the relevant places, e.g. in etching or pickling compositions [C09K 13/00](#), [C23G](#) } , in foodstuffs [A21D](#), [A23](#), {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 [C11B 5/00](#); in detergents [C11D](#); {coating or impregnating carbon or graphite based bodies to protect them from oxidation [C04B 41/45](#) } ; corrosion inhibiting compositions for metallic material [C23F 11/00](#))

#### NOTE

In groups [C09K 15/02](#) - [C09K 15/34](#), in the absence of an indication to the contrary, a composition is classified in the last appropriate place.

- 15/02 . containing inorganic compounds
- 15/04 . containing organic compounds
- 15/06 . . containing oxygen
- 15/08 . . . containing a phenol or quinone moiety
- 15/10 . . containing sulfur
- 15/12 . . containing sulfur and oxygen
- 15/14 . . . containing a phenol or quinone moiety
- 15/16 . . containing nitrogen
- 15/18 . . . containing an amine or imine moiety
- 15/20 . . containing nitrogen and oxygen

- 15/22 . . . containing an amide or imide moiety
- 15/24 . . . containing a phenol or quinone moiety
- 15/26 . . containing nitrogen and sulfur
- 15/28 . . containing nitrogen, oxygen and sulfur
- 15/30 . . containing heterocyclic ring with at least one nitrogen atom as ring member
- 15/32 . . containing {two or more of} boron, silicon, phosphorus, selenium, tellurium or a metal
- 15/322 . . . {containing only phosphorus}
- 15/324 . . . . {containing phosphorus and sulfur}
- 15/326 . . . {containing only metals}
- 15/328 . . . {containing boron, silicon, selenium or tellurium}
- 15/34 . containing plant or animal materials of unknown composition

**17/00 Soil-conditioning materials or soil-stabilising materials** (specially adapted for boreholes or wells [C09K 8/00](#); fertilisers [C05](#); consolidating by placing solidifying or pore-filling substances in the soil [E02D 3/12](#))

#### 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 [C09K 17/02](#) - [C09K 17/50](#), in the absence of an indication to the contrary, materials are classified in the last appropriate place.

- 17/02 . containing inorganic compounds only
- 17/04 . . applied in a physical form other than a solution or a grout, e.g. as granules or gases
- 17/045 . . . {applied as gases}
- 17/06 . . Calcium compounds, e.g. lime
- 17/08 . . Aluminium compounds, e.g. aluminium hydroxide
- 17/10 . . Cements, e.g. Portland cement
- 17/12 . . Water-soluble silicates, e.g. waterglass
- 17/14 . containing organic compounds only
- 17/16 . . applied in a physical form other than a solution or a grout, e.g. as platelets or granules
- 17/18 . . Prepolymers; Macromolecular compounds
- 17/20 . . . Vinyl polymers
- 17/22 . . . . Polyacrylates; Polymethacrylates
- 17/24 . . . Condensation polymers of aldehydes or ketones
- 17/26 . . . . Phenol-aldehyde condensation polymers
- 17/28 . . . . Urea-aldehyde condensation polymers
- 17/30 . . . Polyisocyanates; Polyurethanes
- 17/32 . . . of natural origin, e.g. cellulosic materials
- 17/34 . . . Bituminous materials
- 17/36 . . Compounds having one or more carbon-to-silicon linkages
- 17/38 . . . Siloxanes
- 17/40 . containing mixtures of inorganic and organic compounds

17/42	. . Inorganic compounds mixed with organic active ingredients, e.g. accelerators	2019/0437	. . . {the specific unit being an optically active chain used as linking group between rings or as end group}
17/44	. . . the inorganic compound being cement	2019/044	. . . {the specific unit being a perfluoro chain used as an end group}
17/46	. . . the inorganic compound being a water-soluble silicate	2019/0444	. . {characterized by a linking chain between rings or ring systems, a bridging chain between extensive mesogenic moieties or an end chain group}
17/48	. . Organic compounds mixed with inorganic active ingredients, e.g. polymerisation catalysts	2019/0448	. . . {the end chain group being a polymerizable end group, e.g. -Sp-P or acrylate}
17/50	. . . the organic compound being of natural origin, e.g. cellulose derivatives	2019/0451	. . . {the end chain group being a $\text{CH}_3\text{CH}=\text{CHCH}_2\text{CH}_2$ - chain}
17/52	. Mulches	2019/0455	. . . {the linking chain being a $-\text{CF}_2\text{CF}_2-$ , $-\text{CF}_2\text{CF}_2\text{CF}_2\text{CF}_2-$ or $-\text{CH}_2\text{CF}_2\text{CF}_2\text{CH}_2-$ chain}
<b>19/00</b>	<b>Liquid crystal materials</b>	2019/0459	. . . {the linking chain being a $-\text{CF}=\text{CF}-$ chain, e.g. 1,2-difluoroethen-1,2-diyl}
	<b>NOTES</b>	2019/0462	. . . {the linking chain being a $-\text{CF}_2\text{CF}_2\text{O}-$ chain}
	1. In groups <a href="#">C09K 19/02</a> - <a href="#">C09K 19/60</a> , { with the exception of groups <a href="#">C09K 19/0208</a> - <a href="#">C09K 19/0283</a> }, in the absence of an indication to the contrary, materials are classified in the last appropriate place.	2019/0466	. . . {the linking chain being a $-\text{CF}_2\text{O}-$ chain}
	2. Mixtures containing two or more liquid crystal compounds covered individually by the same one of groups <a href="#">C09K 19/04</a> - <a href="#">C09K 19/40</a> are classified only in that group.	2019/047	. . . {the linking chain being a $-\text{CH}_2\text{CF}_2\text{O}-$ chain}
	3. If liquid crystal components of the mixtures classified in groups <a href="#">C09K 19/42</a> - <a href="#">C09K 19/50</a> are of importance as such, they should also be classified according to the compounds in groups <a href="#">C09K 19/04</a> - <a href="#">C09K 19/40</a> .	2019/0474	. . . {the linking chain being a $-\text{CHFO}-$ chain}
		2019/0477	. . {characterized by the positioning of substituents on phenylene}
19/02	. characterised by optical, electrical or physical properties of the components, in general	2019/0481	. . . {Phenylene substituted in meta position}
19/0208	. . {Twisted Nematic (T.N.); Super Twisted Nematic (S.T.N.); Optical Mode Interference (O.M.I.)}	2019/0485	. . . {Phenylene substituted in ortho position}
19/0216	. . {Super Birefringence Effect (S.B.E.); Electrically Controlled Birefringence (E.C.B.)}	2019/0488	. . {characterized by a special bonding}
19/0225	. . {Ferroelectric}	2019/0492	. . . {the special bonding being an hydrogen bond}
19/0233	. . {Electroclinic}	2019/0496	. . . {the special bonding being a specific pi-conjugated group}
19/0241	. . {Ferrielectric; Ferromagnetic}	19/06	. . Non-steroidal liquid crystal compounds
19/025	. . {Ferroelectric; Ferromagnetic}	19/061	. . . {Linear compounds without any rings}
19/0258	. . {Flexoelectric}	19/062	. . . {containing one non-condensed benzene ring}
19/0266	. . {Antiferroelectrics}	19/063	. . . {containing one non-condensed saturated non-aromatic ring, e.g. cyclohexane ring}
19/0275	. . {Blue phase}	19/065	. . . {containing one non-condensed unsaturated non-aromatic ring, e.g. cyclohexene ring}
19/0283	. . {Cubic phase}	19/066	. . . {containing one heterocyclic ring having oxygen as heteroatom}
19/0291	. . {anticlinic}	19/067	. . . {containing one heterocyclic ring having nitrogen as heteroatom}
19/04	. characterised by the chemical structure of the liquid crystal components{, e.g. by a specific unit}	19/068	. . . {containing one heterocyclic ring having sulfur as heteroatom}
19/0403	. . {the structure containing one or more specific, optionally substituted ring or ring systems}	19/08	. . . containing at least two non-condensed rings
2019/0407	. . . {containing a carbocyclic ring, e.g. dicyano-benzene, chlorofluoro-benzene or cyclohexanone}	19/10	. . . . containing at least two benzene rings
2019/0411	. . . {containing a chlorofluoro-benzene, e.g. 2-chloro-3-fluoro-phenylene-1,4-diyl}	19/12	. . . . . at least two benzene rings directly linked, e.g. biphenyls
2019/0414	. . . {containing a heterocyclic ring}	2019/121	. . . . . {Compounds containing phenylene-1,4-diyl (-Ph-)}
2019/0418	. . . {containing a dendromer structure; Dendritic liquid crystals}	2019/122	. . . . . {Ph-Ph}
19/0422	. . {Sugars (polysaccharides <a href="#">C09K 19/3819</a> )}	2019/123	. . . . . {Ph-Ph-Ph}
2019/0425	. . {characterized by a specific unit that results in a functional effect}	2019/124	. . . . . {Ph-Ph-Ph-Ph}
2019/0429	. . . {the specific unit being a carbocyclic or heterocyclic discotic unit}	2019/125	. . . . . {Ph-Ph-Ph-Ph-Ph or more Ph rings}
2019/0433	. . . {the specific unit being a luminescent or electroluminescent unit}	19/126	. . . . . {Compounds containing at least one asymmetric carbon atom}
		2019/127	. . . . . {Compounds containing phenylene-1,3-diyl}
		2019/128	. . . . . {Compounds containing phenylene-1,2-diyl}
		19/14	. . . . . linked by a carbon chain
		19/16	. . . . . the chain containing carbon-to-carbon double bonds, e.g. stilbenes
		2019/161	. . . . . {Ph-CH=CH-Ph}
		2019/163	. . . . . {Ph-Ph-CH=CH-Ph}



2019/165	. . . . .	{Ph-Ph-CH=CH-Ph-Ph}	2019/3015	. . . . .	{Cy-Cy-Ph-Cy}
2019/166	. . . . .	{Ph-Ph-Ph-CH=CH-Ph}	2019/3016	. . . . .	{Cy-Ph-Ph}
2019/168	. . . . .	{Ph-CH=CH-Ph-CH=CH-Ph}	2019/3018	. . . . .	{Ph-Cy-Ph}
19/18	. . . . .	the chain containing carbon-to-carbon triple bonds, e.g. tolans	2019/3019	. . . . .	{Cy-Cy-Ph-Ph}
2019/181	. . . . .	{Ph-C≡C-Ph}	2019/3021	. . . . .	{Cy-Ph-Ph-Cy}
2019/183	. . . . .	{Ph-Ph-C≡C-Ph}	2019/3022	. . . . .	{Cy-Ph-Cy-Ph}
2019/185	. . . . .	{Ph-Ph-C≡C-Ph-Ph}	2019/3024	. . . . .	{Ph-Cy-Cy-Ph}
2019/186	. . . . .	{Ph-C≡C-C≡C-Ph}	2019/3025	. . . . .	{Cy-Ph-Ph-Ph}
2019/188	. . . . .	{Ph-C≡C-Ph-C≡C-Ph}	2019/3027	. . . . .	{Compounds comprising 1,4-cyclohexylene and 2,3-difluoro-1,4-phenylene}
19/20	. . . . .	linked by a chain containing carbon and oxygen atoms as chain links, e.g. esters {or ethers}	19/3028	. . . . .	{in which at least two rings are linked by a carbon chain containing carbon to carbon single bonds}
19/2007	. . . . .	{the chain containing -COO- or -OCO- groups}	2019/303	. . . . .	{Cy-C <sub>2</sub> H <sub>4</sub> -Cy}
19/2014	. . . . .	{containing additionally a linking group other than -COO- or -OCO-, e.g. -CH <sub>2</sub> -CH <sub>2</sub> -, -CH=CH-, -C=C-; containing at least one additional carbon atom in the chain containing -COO- or -OCO- groups, e.g. -(CH <sub>2</sub> ) <sub>m</sub> -COO-(CH <sub>2</sub> ) <sub>n</sub> -}	2019/3031	. . . . .	{Cy-Cy-C <sub>2</sub> H <sub>4</sub> -Cy}
19/2021	. . . . .	{Compounds containing at least one asymmetric carbon atom}	2019/3033	. . . . .	{Cy-Cy-Cy-C <sub>2</sub> H <sub>4</sub> -Cy}
19/2028	. . . . .	{containing additionally a linking group other than -COO- or -OCO-, e.g. -CH <sub>2</sub> -CH <sub>2</sub> -, -CH=CH-, -C=C-; containing at least one additional carbon atom in the chain containing -COO- or -OCO- groups, e.g. -COO-CH*-CH <sub>3</sub> }	2019/3034	. . . . .	{Cy-Cy-C <sub>2</sub> H <sub>4</sub> -Cy-Cy}
2019/2035	. . . . .	{Ph-COO-Ph}	2019/3036	. . . . .	{Cy-C <sub>2</sub> H <sub>4</sub> -Ph}
2019/2042	. . . . .	{Ph-Ph-COO-Ph}	2019/3037	. . . . .	{Cy-Cy-C <sub>2</sub> H <sub>4</sub> -Ph}
2019/205	. . . . .	{Ph-Ph-Ph-COO-Ph}	2019/3039	. . . . .	{Cy-Cy-Cy-C <sub>2</sub> H <sub>4</sub> -Ph}
2019/2057	. . . . .	{Ph-Ph-Ph-Ph-COO-Ph, or more Ph rings}	2019/304	. . . . .	{Cy-C <sub>2</sub> H <sub>4</sub> -Ph-Ph}
2019/2064	. . . . .	{Ph-Ph-COO-Ph-Ph}	2019/3042	. . . . .	{Cy-Cy-C <sub>2</sub> H <sub>4</sub> -Ph-Ph}
2019/2071	. . . . .	{Ph-Ph-Ph-COO-Ph-Ph, or more Ph rings}	2019/3043	. . . . .	{Cy-Cy-C <sub>2</sub> H <sub>4</sub> -Ph-Cy}
2019/2078	. . . . .	{Ph-COO-Ph-COO-Ph}	2019/3045	. . . . .	{Cy-Ph-C <sub>2</sub> H <sub>4</sub> -Ph-Cy}
2019/2085	. . . . .	{Ph-CH=CH-Ph-COO-Ph}	2019/3046	. . . . .	{Cy-C <sub>2</sub> H <sub>4</sub> -Ph-C <sub>2</sub> H <sub>4</sub> -Cy}
2019/2092	. . . . .	{Ph-C≡C-Ph-COO-Ph}	19/3048	. . . . .	{in which at least two rings are linked by a carbon chain containing carbon to carbon double bonds}
19/22	. . . . .	linked by a chain containing carbon and nitrogen atoms as chain links, e.g. Schiff bases	2019/305	. . . . .	{Cy-CH=CH-Cy}
19/24	. . . . .	linked by a chain containing nitrogen-to-nitrogen bonds	2019/3051	. . . . .	{Cy-CH=CH-Cy-Ph}
19/26	. . . . .	Azoxy compounds	2019/3053	. . . . .	{Cy-CH=CH-Ph}
19/28	. . . . .	linked by a chain containing carbon and sulfur atoms as chain links, e.g. thioesters	2019/3054	. . . . .	{Cy-Cy-CH=CH-Ph}
19/30	. . . . .	containing saturated or unsaturated non-aromatic rings, e.g. cyclohexane rings	2019/3056	. . . . .	{Cy-Ph-CH=CH-Ph}
19/3001	. . . . .	{Cyclohexane rings}	2019/3057	. . . . .	{Cy-Ph-Ph-CH=CH-Ph}
19/3003	. . . . .	{Compounds containing at least two rings in which the different rings are directly linked (covalent bond)}	19/3059	. . . . .	{in which at least two rings are linked by a carbon chain containing carbon to carbon triple bonds}
2019/3004	. . . . .	{Cy-Cy}	2019/306	. . . . .	{Cy-C≡C-Cy}
2019/3006	. . . . .	{Cy-Cy-Cy}	2019/3062	. . . . .	{Cy-C≡C-Ph}
2019/3007	. . . . .	{Cy-Cy-Cy-Cy or more Cy rings}	2019/3063	. . . . .	{Cy-Ph-C≡C-Ph}
2019/3009	. . . . .	{Cy-Ph}	2019/3065	. . . . .	{Cy-Ph-Ph-C≡C-Ph}
2019/301	. . . . .	{Cy-Cy-Ph}	19/3066	. . . . .	{in which the rings are linked by a chain containing carbon and oxygen atoms, e.g. esters or ethers}
2019/3012	. . . . .	{Cy-Cy-Cy-Ph, or more Cy rings}	19/3068	. . . . .	{chain containing -COO- or -OCO- groups}
2019/3013	. . . . .	{Cy-Ph-Cy}	2019/3069	. . . . .	{Cy-COO-Cy}
			2019/3071	. . . . .	{Cy-Cy-COO-Cy}
			2019/3072	. . . . .	{Cy-Cy-Cy-COO-Cy, or more Cy rings}
			2019/3074	. . . . .	{Cy-Cy-COO-Cy-Cy, or more Cy rings}
			2019/3075	. . . . .	{Cy-COO-Ph}
			2019/3077	. . . . .	{Cy-Cy-COO-Ph}
			2019/3078	. . . . .	{Cy-Cy-COO-Ph-Cy}
			2019/308	. . . . .	{Cy-Cy-COO-Ph-Ph}
			2019/3081	. . . . .	{Cy-Ph-COO-Cy}
			2019/3083	. . . . .	{Cy-Ph-COO-Ph}
			2019/3084	. . . . .	{Cy-Ph-COO-Ph-Cy}
			19/3086	. . . . .	{in which at least two rings are linked by a chain containing nitrogen atoms}

19/3087	. . . . .	{in which at least two rings are linked by a chain containing sulfur atoms}	19/345	. . . . .	{the heterocyclic ring being a six-membered aromatic ring containing two nitrogen atoms}
2019/3089	. . . . .	{Cy-S-Cy}	19/3452	. . . . .	{Pyrazine}
2019/309	. . . . .	{Cy-S-Ph}	19/3455	. . . . .	{Pyridazine}
2019/3092	. . . . .	{Cy-S-Ph-Ph}	19/3458	. . . . .	{Uncondensed pyrimidines}
2019/3093	. . . . .	{Cy-Ph-S-Ph}	19/3461	. . . . .	{Pyrimidine-tolane}
2019/3095	. . . . .	{in which the end group is the monoterpene menthyl}	19/3463	. . . . .	{Pyrimidine with a carbon chain containing at least one asymmetric carbon atom, i.e. optically active pyrimidines}
2019/3096	. . . . .	{Cyclobutane rings}	19/3466	. . . . .	{Pyrimidine with at least another heterocycle in the chain}
19/3098	. . . . .	{Unsaturated non-aromatic rings, e.g. cyclohexene rings}	19/3469	. . . . .	{Pyrimidine with a specific end-group other than alkyl, alkoxy or -C*-}
19/32	. . .	containing condensed ring systems, i.e. fused, bridged or spiro ring systems	19/3472	. . . . .	{Pyrimidine condensed or bridged with another ring system}
19/321	. . . .	{Compounds containing a bicyclo [2,2,2] octane ring}	19/3475	. . . . .	{the heterocyclic ring being a six-membered aromatic ring containing at least three nitrogen atoms}
19/322	. . . .	{Compounds containing a naphthalene ring or a completely or partially hydrogenated naphthalene ring}	19/3477	. . . . .	{the heterocyclic ring being a five-membered aromatic ring containing at least one nitrogen atom}
2019/323	. . . . .	{containing a binaphthyl}	19/348	. . . . .	{containing at least two nitrogen atoms}
2019/324	. . . . .	{containing a dihydronaphthalene}	19/3483	. . . . .	{the heterocyclic ring being a non-aromatic ring}
2019/325	. . . . .	{containing a tetrahydronaphthalene, e.g. -2,6-diyl (tetralin)}	19/3486	. . . . .	{the heterocyclic ring containing nitrogen and oxygen atoms}
2019/326	. . . . .	{containing a decahydronaphthalene, e.g. -2,6-diyl (decalin)}	19/3488	. . . . .	{the heterocyclic ring having more than 6 members, e.g. macrocycles, phthalocyanines}
2019/327	. . . . .	{containing a spiro ring system}	19/3491	. . . . .	{having sulfur as hetero atom}
2019/328	. . . . .	{containing a triphenylene ring system}	19/3494	. . . . .	{the heterocyclic ring containing sulfur and oxygen atoms}
19/34	. . .	containing at least one heterocyclic ring	19/3497	. . . . .	{the heterocyclic ring containing sulfur and nitrogen atoms}
19/3402	. . . . .	{having oxygen as hetero atom ( <a href="#">sugars C09K 19/0422</a> )}	19/36	. .	Steroidal liquid crystal compounds
19/3405	. . . . .	{the heterocyclic ring being a five-membered ring}	19/38	. .	Polymers
2019/3408	. . . . .	{Five-membered ring with oxygen(s) in fused, bridged or spiro ring systems}	19/3804	. . .	{with mesogenic groups in the main chain}
19/3411	. . . . .	{the heterocyclic ring being a three-membered ring}	19/3809	. . . .	{Polyesters; Polyester derivatives, e.g. polyamides}
2019/3413	. . . . .	{Three-membered member ring with oxygen(s), e.g. oxirane in fused, bridged or spiro ring systems}	19/3814	. . . . .	{Polyethers}
2019/3416	. . . . .	{the heterocyclic ring being a four-membered ring, e.g. oxetane}	19/3819	. . . . .	{Polysaccharides or derivatives thereof}
2019/3419	. . . . .	{Four-membered ring with oxygen(s), e.g. oxetane, in fused, bridged or spiro ring systems}	19/3823	. . . . .	{containing heterocycles having at least one nitrogen as ring hetero atom}
2019/3422	. . . . .	{the heterocyclic ring being a six-membered ring}	19/3828	. . . . .	{containing triazine rings}
2019/3425	. . . . .	{Six-membered ring with oxygen(s) in fused, bridged or spiro ring systems}	19/3833	. . .	{with mesogenic groups in the side chain}
2019/3427	. . . . .	{Six-membered ring with 3 or more oxygen atoms}	19/3838	. . . . .	{Polyesters; Polyester derivatives}
2019/343	. . . . .	{the heterocyclic ring being a seven-membered ring}	19/3842	. . . . .	{Polyvinyl derivatives}
2019/3433	. . . . .	{Seven-membered ring with oxygen(s) in fused, bridged or spiro ring systems}	19/3847	. . . . .	{Polyvinylethers}
2019/3436	. . . . .	{Seven-membered ring with 3 or more oxygen atoms}	19/3852	. . . . .	{Poly(meth)acrylate derivatives}
2019/3438	. . . . .	{Crown ethers}	19/3857	. . . . .	{containing at least one asymmetric carbon atom}
19/3441	. . . . .	{having nitrogen as hetero atom}	19/3861	. . . . .	{containing condensed ring systems}
19/3444	. . . . .	{the heterocyclic ring being a six-membered aromatic ring containing one nitrogen atom, e.g. pyridine}	19/3866	. . . . .	{containing steroid groups}
19/3447	. . . . .	{Pyridine condensed or bridged with another ring system, e.g. quinoline or acridine}	19/3871	. . . . .	{containing amino acid derivatives}
			19/3876	. . . . .	{Polyoxyalkylene polymers}
			19/388	. . . . .	{Polyepoxides}
			19/3885	. . . . .	{Polyurethanes}
			19/389	. . . . .	{Polypeptides}
			19/3895	. . . . .	{containing two or more mesogenic groups per monomer unit, e.g. polyitaconates, polymaleates}

19/40	. . containing elements other than carbon, hydrogen, halogen, oxygen, nitrogen or sulfur, e.g. silicon, metals	2101/00	<b>Agricultural use</b>
19/402	. . . {containing deuterium}	2103/00	<b>Civil engineering use</b>
19/404	. . . {containing boron or phosphorus}	2105/00	<b>Erosion prevention</b>
19/406	. . . {containing silicon}	2107/00	<b>Impermeabilisation</b>
19/408	. . . . {Polysiloxanes}	2109/00	<b>pH regulation</b>
19/42	. . Mixtures of liquid crystal compounds covered by two or more of the preceding groups <a href="#">C09K 19/06</a> - <a href="#">C09K 19/40</a>	2200/00	<b>Chemical nature of materials in mouldable or extrudable form for sealing or packing joints or covers</b>
19/44	. . . containing compounds with benzene rings directly linked	2200/02	. Inorganic compounds
19/46	. . . containing esters	2200/0204	. . Elements
19/48	. . . containing Schiff bases	2200/0208	. . . Carbon
19/50	. . . containing steroidal liquid crystal compounds	2200/0213	. . . Metals
19/52	. characterised by components which are not liquid crystals, e.g. additives {with special physical aspect: solvents, solid particles}	2200/0217	. . Salts
2019/521	. . {Inorganic solid particles}	2200/0221	. . . Halogen-containing compounds
2019/523	. . {Organic solid particles}	2200/0226	. . . Nitrogen-containing compounds
2019/525	. . {Solvents}	2200/023	. . . Sulfur-containing compounds
2019/526	. . {Gelling agents}	2200/0234	. . . Phosphorous-containing compounds
2019/528	. . {Surfactants}	2200/0239	. . Oxides, hydroxides, carbonates
19/54	. . Additives having no specific mesophase {characterised by their chemical composition}	2200/0243	. . Silica-rich compounds, e.g. silicates, cement, glass
19/542	. . . {Macromolecular compounds}	2200/0247	. . . Silica
19/544	. . . . {as dispersing or encapsulating medium around the liquid crystal}	2200/0252	. . . Clays
2019/546	. . . . {creating a polymeric network}	2200/0256	. . . . Bentonite
2019/548	. . . . {stabilizing the alignment; Polymer stabilized alignment}	2200/026	. . . . Kaolin
19/56	. . . Aligning agents	2200/0265	. . . Mica
19/58	. . Dopants or charge transfer agents	2200/0269	. . Ceramics
19/582	. . . {Electrically active dopants, e.g. charge transfer agents}	2200/0273	. . Boron-containing compounds
19/584	. . . . {having a condensed ring system; macrocyclic compounds}	2200/0278	. . Fibres
19/586	. . . {Optically active dopants; chiral dopants}	2200/0282	. . . Carbon fibres
19/588	. . . . {Heterocyclic compounds}	2200/0286	. . . Asbestos
19/60	. . Pleochroic dyes	2200/0291	. . . Glass fibres
19/601	. . . {Azoic}	2200/0295	. . . Ceramic fibres
19/603	. . . {Anthroquinonic}	2200/04	. Non-macromolecular organic compounds
19/605	. . . {Azomethine dyes}	2200/0405	. . Hydrocarbons
19/606	. . . {Perylene dyes}	2200/0411	. . Halogen-containing compounds
19/608	. . . {Quinoxaline dyes}	2200/0417	. . Phosphorus-containing compounds
21/00	<b>Fireproofing materials (for use in a particular application, see the relevant places, e.g. fireproofing of wood <a href="#">B27K</a>, of polymers <a href="#">C08</a>, of textiles <a href="#">D06M</a>, of paper <a href="#">D21H</a>; fireproof paints <a href="#">C09D 5/18</a>)</b> <b>NOTE</b> In groups <a href="#">C09K 21/02</a> - <a href="#">C09K 21/14</a> , in the absence of an indication to the contrary, materials are classified in the last appropriate place.	2200/0423	. . Boron-containing compounds
21/02	. Inorganic materials	2200/0429	. . Alcohols, phenols, ethers
21/04	. . containing phosphorus	2200/0435	. . Aldehydes, ketones
21/06	. Organic materials	2200/0441	. . Carboxylic acids, salts, anhydrides or esters thereof
21/08	. . containing halogen	2200/0447	. . Fats, fatty oils, higher fatty acids or derivatives thereof
21/10	. . containing nitrogen	2200/0452	. . Carbohydrates or derivatives thereof
21/12	. . containing phosphorus	2200/0458	. . Nitrogen-containing compounds
21/14	. Macromolecular materials	2200/0464	. . . Isocyanates
		2200/047	. . . Amides, imides, imines, N-oxides
		2200/0476	. . . Heterocyclic nitrogen compounds, e.g. melamine
		2200/0482	. . . Peptides, proteins or derivatives thereof
		2200/0488	. . Sulfur-containing compounds
		2200/0494	. . Silicon-containing compounds
		2200/06	. Macromolecular organic compounds, e.g. prepolymers
		2200/0602	. . Polysaccharides or derivatives thereof
		2200/0605	. . Lignin-containing compounds
		2200/0607	. . Rubber or rubber derivatives
		2200/061	. . . Butyl rubber
		2200/0612	. . . Butadiene-acrylonitrile rubber

- 2200/0615 . . . obtained by reactions only involving carbon-to-carbon unsaturated bonds
- 2200/0617 . . . Polyalkenes
- 2200/062 . . . Polyethylene
- 2200/0622 . . . Polyvinylalcohols, polyvinylacetates
- 2200/0625 . . . Polyacrylic esters or derivatives thereof
- 2200/0627 . . . Nitrogen-containing polymers, e.g. polyacrylamide
- 2200/063 . . . Polyacrylonitriles
- 2200/0632 . . . Polystyrenes
- 2200/0635 . . . Halogen-containing polymers, e.g. PVC
- 2200/0637 . . . Fluoro-containing polymers, e.g. PTFE
- 2200/064 . . . Coumarone polymers
- 2200/0642 . . Copolymers containing at least three different monomers
- 2200/0645 . . obtained otherwise than by reactions involving carbon-to-carbon unsaturated bonds
- 2200/0647 . . . Polyepoxides
- 2200/065 . . . Polyurethanes
- 2200/0652 . . . Polyisocyanates
- 2200/0655 . . . Polyesters
- 2200/0657 . . . Polyethers
- 2200/066 . . . Polyester-polyethers
- 2200/0662 . . . Polyether-polyol
- 2200/0665 . . . Polyurea
- 2200/0667 . . . Polyamides, polyimides
- 2200/067 . . . Condensation polymers of aldehydes or ketones
- 2200/0672 . . . Phenol-aldehyde condensation polymers
- 2200/0675 . . . Melamine-formaldehyde condensation polymers
- 2200/0677 . . . Urea-formaldehyde condensation polymers
- 2200/068 . . Containing also other elements than carbon, oxygen or nitrogen in the polymer main chain
- 2200/0682 . . . Containing sulfur
- 2200/0685 . . . Containing silicon
- 2200/0687 . . Natural resins, e.g. rosin
- 2200/069 . . Bituminous materials, e.g. tar, pitch
- 2200/0692 . . Fibres
- 2200/0695 . . . Polyamide fibres
- 2200/0697 . . . Cellulose fibres
- 2205/00 Aspects relating to compounds used in compression type refrigeration systems**
- 2205/10 . Components
- 2205/102 . . Alcohols
- 2205/104 . . Carboxylic acid esters
- 2205/106 . . Carbon dioxide
- 2205/108 . . Aldehydes or ketones
- 2205/11 . . Ethers
- 2205/112 . . . Halogenated ethers
- 2205/114 . . . Cyclic ethers
- 2205/116 . . . Halogenated cyclic ethers
- 2205/12 . . Hydrocarbons
- 2205/122 . . . Halogenated hydrocarbons
- 2205/124 . . . Fluorinated cyclic hydrocarbons
- 2205/126 . . . Unsaturated fluorinated hydrocarbons
- 2205/128 . . . Perfluorinated hydrocarbons ([C09K 2205/124](#), [C09K 2205/126](#) take precedence)
- 2205/13 . . Inert gases
- 2205/132 . . containing nitrogen
- 2205/134 . . containing sulfur
- 2205/22 . . All components of a mixture being fluoro compounds
- 2205/24 . . Only one single fluoro component present
- 2205/32 . . The mixture being azeotropic
- 2205/34 . . The mixture being non-azeotropic
- 2205/40 . . Replacement mixtures
- 2205/41 . . Type R11
- 2205/42 . . Type R12
- 2205/43 . . Type R22
- 2205/44 . . Type R13B1
- 2205/45 . . Type R500
- 2205/46 . . Type R501
- 2205/47 . . Type R502
- 2205/48 . . Type R503
- 2208/00 Aspects relating to compositions of drilling or well treatment fluids**
- 2208/02 . . Spotting, i.e. using additives for releasing a stuck drill
- 2208/04 . . Hulls, shells or bark containing well drilling or treatment fluids
- 2208/06 . . Structured surfactants, i.e. well drilling or treating fluids with a lamellar or spherulitic phase
- 2208/08 . . Fiber-containing well treatment fluids
- 2208/10 . . Nanoparticle-containing well treatment fluids
- 2208/12 . . Swell inhibition, i.e. using additives to drilling or well treatment fluids for inhibiting clay or shale swelling or disintegrating
- 2208/14 . . Double emulsions, i.e. oil-in-water-in-oil emulsions or water-in-oil-in-water emulsions
- 2208/18 . . Bridging agents, i.e. particles for temporarily filling the pores of a formation; Graded salts
- 2208/20 . . Hydrogen sulfide elimination
- 2208/22 . . Hydrates inhibition by using well treatment fluids containing inhibitors of hydrate formers
- 2208/24 . . Bacteria or enzyme containing gel breakers
- 2208/26 . . Gel breakers other than bacteria or enzymes
- 2208/28 . . Friction or drag reducing additives
- 2208/30 . . Viscoelastic surfactants [VES]
- 2208/32 . . Anticorrosion additives
- 2208/34 . . Lubricant additives
- 2211/00 Chemical nature of organic luminescent or tenebrescent compounds**
- 2211/10 . . Non-macromolecular compounds
- 2211/1003 . . Carbocyclic compounds
- 2211/1007 . . . Non-condensed systems
- 2211/1011 . . . Condensed systems
- 2211/1014 . . . bridged by heteroatoms, e.g. N, P, Si or B
- 2211/1018 . . Heterocyclic compounds
- 2211/1022 . . . bridged by heteroatoms, e.g. N, P, Si or B
- 2211/1025 . . . characterised by ligands
- NOTE**
- In groups [C09K 2211/1025](#) - [C09K 2211/1074](#) indexing is made in the last appropriate place
- 2211/1029 . . . . containing one nitrogen atom as the heteroatom
- 2211/1033 . . . . with oxygen
- 2211/1037 . . . . with sulfur
- 2211/104 . . . . with other heteroatoms



2211/1044	. . . .	containing two nitrogen atoms as heteroatoms
2211/1048	. . . . .	with oxygen
2211/1051	. . . . .	with sulfur
2211/1055	. . . . .	with other heteroatoms
2211/1059	. . . .	containing three nitrogen atoms as heteroatoms
2211/1062	. . . . .	with oxygen
2211/1066	. . . . .	with sulfur
2211/107	. . . . .	with other heteroatoms
2211/1074	. . . .	containing more than three nitrogen atoms as heteroatoms
2211/1077	. . . . .	with oxygen
2211/1081	. . . . .	with sulfur
2211/1085	. . . . .	with other heteroatoms
2211/1088	. . . .	containing oxygen as the only heteroatom
2211/1092	. . . .	containing sulfur as the only heteroatom
2211/1096	. . . .	containing other heteroatoms
2211/14	.	Macromolecular compounds
2211/1408	. .	Carbocyclic compounds
2211/1416	. . .	Condensed systems
2211/1425	. . .	Non-condensed systems
2211/1433	. . .	bridged by heteroatoms, e.g. N, P, Si or B
2211/1441	. .	Heterocyclic

**NOTE**

In groups [C09K 2211/1441](#) - [C09K 2211/1483](#)  
indexing is made in the last appropriate place

2211/145	. . .	containing oxygen as the only heteroatom
2211/1458	. . .	containing sulfur as the only heteroatom
2211/1466	. . .	containing nitrogen as the only heteroatom
2211/1475	. . .	containing nitrogen and oxygen as heteroatoms
2211/1483	. . .	containing nitrogen and sulfur as heteroatoms
2211/1491	. . .	containing other combinations of heteroatoms
2211/18	.	Metal complexes
2211/181	. .	of the alkali metals and alkaline earth metals
2211/182	. .	of the rare earth metals, i.e. Sc, Y or lanthanide
2211/183	. .	of the refractory metals, i.e. Ti, V, Cr, Zr, Nb, Mo, Hf, Ta or W
2211/185	. .	of the platinum group, i.e. Os, Ir, Pt, Ru, Rh or Pd
2211/186	. .	of the light metals other than alkali metals and alkaline earth metals, i.e. Be, Al or Mg
2211/187	. .	of the iron group metals, i.e. Fe, Co or Ni
2211/188	. .	of other metals not provided for in one of the previous groups

**2219/00 Aspects relating to the form of the liquid chrystal [LC] material, or by the technical area in which LC material are used**

2219/01	.	in the form of fibres, e.g. fibres after polymerisation of LC precursor
2219/03	.	in the form of films, e.g. films after polymerisation of LC precursor
2219/11	.	used in the High Frequency technical field
2219/13	.	used in the technical field of thermotropic switches
2219/15	.	used as a medium, in which chemical reactions take place
2219/17	.	used as a medium, in which detection of chemical compounds takes place