

C09K

MATERIALS FOR MISCELLANEOUS APPLICATIONS, NOT PROVIDED FOR ELSEWHERE

Definition statement

This place covers:

The use of materials for applications not provided for elsewhere, e.g. sealing materials, drilling fluids.

The use of materials in general having specific properties, not provided for elsewhere, e.g. anti-static properties, anti-oxidation properties.

Materials selected for uses or applications not provided for elsewhere.

All entries in this subclass relate to specific properties (e.g. [C09K 3/16](#) relates to materials with anti-static properties) or specific applications of materials (e.g. [C09K 17/00](#) relates to soil-conditioning or soil-stabilizing materials), except for main group [C09K 3/00](#) itself, which is the residual place for classifying materials with properties or applications for which no entries exist in [C09K](#) itself nor elsewhere in IPC.

References

References out of a residual place

Examples of places in relation to which this place is residual:

e.g. preparations for medical, dental or toiletry purposes	A61K
e.g. sorbent compositions or catalysts	B01
Chemical treatment of wood or similar materials	B27K
Inorganic chemistry	C01
Organic chemistry	C07
Organic macromolecular compounds and their compositions	C08
Coating compositions, e.g. paints	C09D
Fuels	C10L
Applications of materials relating to photography, cinematography and analogous techniques	G03
Selection of materials for their conductive, insulating, or dielectric properties	H01B
Selection of materials for electrochemical generators, e.g. batteries	H01M
Selection of materials for piezoelectric materials	H10N 30/85

Informative references

Attention is drawn to the following places, which may be of interest for search:

Solid sorbent compositions	B01J 20/00
Materials for treatment of water, waste water, or sewage	C02F
Fertilisers	C05
e.g. mixtures of soil-conditioning or soil-stabilising materials with fertilisers characterised by their fertilising activity	C05G

Glossary of terms

In this place, the following terms or expressions are used with the meaning indicated:

Materials	include compounds, compositions, mixtures and preparations
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C09K 3/00

Materials not provided for elsewhere

Definition statement

This place covers:

Only materials for which no specific application is mentioned, for example thickeners that can be used for any composition are classified in this class .

Relationships with other classification places

Compositions for which an application is mentioned i.e. an application class is available , the documents are classified in the relevant application class only , for example: thickener for food [A23](#), for cosmetics [A61](#), for paints [C09D](#).

C09K 3/10

{Materials in mouldable or extrudable form} for sealing or packing joints or covers (filling pastes [C09D 5/34](#))

Definition statement

This place covers:

Material in extrudable or mouldable form used for sealing or packing joints or covers

Relationships with other classification places

[C09K](#) relates to materials not provided elsewhere,

therefore

If the sealant is only claimed with regard to a specific application and if in said specific application field a class related to the chemical nature of the sealant exists the document should only be classified in the application field

e.g.:

[B29C 73/16](#) (tyre puncture sealing)

[B60R 13/06](#) (sealing strips)

[C09K 8/50-C09K 8/518](#) (sealing or packing boreholes or wells)

References

Limiting references

This place does not cover:

Lime, cements, mortars	C04B
Filling pastes	C09D 5/34
Adhesives	C09J

Informative references

Attention is drawn to the following places, which may be of interest for search:

Use of inorganic ingredients	C08K 3/00 - C08K 3/40
Use of organic ingredients	C08K 5/00 - C08K 5/59
Compositions of macromolecular compounds	C08L

Special rules of classification

If no specific application of the sealant is cited, the document should only be classified in the appropriate [C09K 3/10](#) class.

If the sealant is claimed without specific uses the document should be classified in the appropriate [C09K 3/10](#) class,

however

If specific applications are cited (e.g. in the description) the document should additionally be classified in the relevant application fields

and

if many different applications are cited the document should only be classified in the appropriate [C09K 3/10](#) class.

[C09K 3/1006](#) is not used for classification.

All documents not falling under the definition of [C09K 3/1003](#) or in the range [C09K 3/1009](#) - [C09K 3/1021](#) should be classified in [C09K 3/10](#)

Classification of additional information is done by using Indexing Codes:

for indexing the properties and uses of the material : [C09K 3/10](#) - [C09K 2003/1096](#)

for indexing the chemical nature of the material: [C09K 2200/00](#) - [C09K 2200/0697](#)

C09K 3/14

Anti-slip materials; Abrasives {(products specifically intended for the fabrication of abrasive tools, blocks or papers, or for operations of the kind of sand-blasting and barrelling [B24B 31/14](#), [B24C 1/00](#); polishing compositions containing abrasive or grinding agents [C09G 1/02](#); friction compositions for brakes or clutches [F16D 69/02](#); polishing of semi-conductors [H10P 52/40](#))}

References

Limiting references

This place does not cover:

Products specifically intended for the fabrication of abrasive tools, blocks or papers, or for operations of the kind of sand-blasting and barrelling	B24B 31/14 , B24C 1/00
Polishing compositions containing an abrasive which is not specific or polishing compositions WITHOUT abrasive	C09G 1/02
Polishing compositions containing abrasive or grinding agents	C09G 1/02

Polishing of semi-conductors H10P ; Friction compositions for brakes or clutches	F16D 69/02
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Informative references

Attention is drawn to the following places, which may be of interest for search:

Cleaning or scraping pads	A47L 17/00
Lapping	B24B
products specifically intended for the fabrication of abrasive tools, blocks or papers, or for operations of the kind of sand-blasting and barrelling	B24B 31/14 , B24C 1/00 ;
Tools, grinding wheels	B24D
Sawing fluids e.g. of silicon ingots, precious stones	B28D
Polishing of glass	C03C
Abrasives as fillers for polymers	C08K 3/00
; polishing compositions containing abrasive or grinding agents	C09G 1/02
Polishing of metals	C23F
friction compositions for brakes or clutches	F16D 69/02
polishing of semi-conductors	H10P

Special rules of classification

In this class boron and silicon are considered as metals , as well as association of carbon with metals e.g. carbides . Particles coated with boron , silicon or carbides : [C09K 3/1445](#)

C09K 3/1409

{Abrasive particles per se (preparation of diamond [C01B 32/25](#))}

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Preparation of particles in general	B01J
Abrasive particles for sand blasting	B24C 11/00
Preparation of diamond	C01B 32/25
Abrasives particles as fillers for polymers	C08K 3/00

C09K 3/1454

{Abrasive powders, suspensions and pastes for polishing}

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Lapping	B24B
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Sawing fluids e.g. of silicon ingots, precious stones	B28D
Polishing of glass	C03C 19/00
Methods and processes for polishing semi-conductors	H10P
Polishing of semi-conductors	H10P

C09K 3/16

Anti-static materials

References

Limiting references

This place does not cover:

Conductive materials	H01B 1/00
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Informative references

Attention is drawn to the following places, which may be of interest for search:

Antistatic paper	D21H 5/00
Photo paper	G03C 1/00

C09K 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](#))

Definition statement

This place covers:

Compositions for non permanent treatment, with no formation of a permanent coating in order to reduce attachment of ice, mist or water to surfaces

Relationships with other classification places

A permanent coating, film on a surface is classified in [C09D](#), e.g. water based barrier cohesive film

References

Limiting references

This place does not cover:

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
Rendering particulate materials free flowing, in general, e.g. making them hydrophobic	B01J 2/30
Permanent coating (polymer -> film)	C09D

Informative references

Attention is drawn to the following places, which may be of interest for search:

Treatment of agricultural products	A01F 25/00
Process for dewatering	B01D 43/00
Treatment of bulk material e.g. sand or coal	B65G 3/00
Glass surfaces	C03C
Dewatering of surfaces	C23G 5/00
Treatment of textiles	D06M

C09K 3/22

for dust-laying or dust-absorbing

Definition statement

This place covers:

Compositions for non-permanent treatment in order to have dust-laying or dust absorbing

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Treatment of fertilisers in powder form	C05G
Treatment of road surfaces	E01H 3/00
Treatment of mines	E21F 5/00
Treatment of tunnel walls	E21F 5/18

C09K 3/24

for simulating ice or snow

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Artificial surfaces for winter sports	E01C 13/10
Fabrication of Ice or snow for sports	F25C 3/00

C09K 3/30

for aerosols (aerosol containers [B65D 83/14](#))

Definition statement

This place covers:

Chemical compounds and mixtures of chemical compounds for aerosols, e.g. propellants

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Sprayers for therapeutic purposes	A61M 11/00
Inhalators	A61M 15/00
Aerosol containers	B65D 83/14

C09K 3/32

for absorbing liquids to remove pollution, e.g. oil, gasoline, fat

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Litters for animals	A01K 1/015
Solid sorbents	B01J 20/22
Treatment of water	C02F
Apparatus for removing oil from water	E02B 15/04

C09K 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

Definition statement

This place covers:

Materials undergoing a change of physical change when used

Materials not undergoing a change of physical change when used

Materials undergoing chemical reactions when used

Antifreeze additives

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Arrangement or adaptations of heating, cooling, ventilating, or other air-treating devices specially for passenger or goods spaces of vehicles	B60H
Lubricating compositions	C10M
Corrosion inhibitors	C23F 11/00

Use of solar heat; selection of specific heat-exchange medium	F24S 10/501 , F24S 10/73 , F24S 10/80 , F24S 20/55 , F24S 23/11 , F24S 23/82 , F24S 70/00 - F24S 80/00
Refrigeration machines, plants or systems, combined heating and refrigeration systems; heat systems	F25B
Heat-exchange apparatus	F28D
Details of heat-exchange and heat-transfer apparatus, of general application	F28F

Special rules of classification

Last place rule applies

When classifying in [C09K 5/042](#), [C09K 5/044](#) and [C09K 5/045](#) classification of additional information is done by using Indexing Codes:

for indexing the chemical nature of the material: [C09K 2205/00](#) - [C09K 2205/48](#)

C09K 8/00

Compositions for drilling of boreholes or wells; Compositions for treating boreholes or wells, e.g. for completion or for remedial operations

References

Limiting references

This place does not cover:

Oil recovery from bituminous sands	C10G 32/04
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Special rules of classification

[C09K 8/02](#) - [C09K 8/38](#) : Last Place Rule

Drilling fluids with fluid loss additives : [C09K 8/02](#)-[C09K 8/38](#) and [C09K 8/50](#)-[C09K 8/536](#)

when appropriate use Indexing Code for "spotting" and [E21B 31/03](#)

Synonyms and Keywords

Spotting fluids	Fluids for releasing stuck drill string
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C09K 8/03

Specific additives for general use in well-drilling compositions

Definition statement

This place covers:

Only when the additive as such is disclosed without specification of the drilling fluid OR if it is for any kind of drilling fluid : [C09K 8/03](#)-[C09K 8/035](#)

Special rules of classification

mixtures of inorganic and organic additives : [C09K 8/03](#) only

C09K 8/145

{characterised by the composition of the clay}

Definition statement

This place covers:

Aqueous well-drilling compositions characterised by well defined clay composition

Relationships with other classification places

Organoclays per se are classified in [C01B 33/44](#)

Drilling fluids comprising organoclays will be classified in [C09K 8/145](#) and [C01B 33/44](#)

References**Limiting references**

This place does not cover:

organoclays per se : [C01B 33/44](#)

C09K 8/22

Synthetic organic compounds

Definition statement

This place covers:

Monomers

C09K 8/34

Organic liquids

Definition statement

This place covers:

Specific non- oil components , e.g. olefins ,paraffins , special environmently friendly components

C09K 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](#))**

References**Limiting references**

This place does not cover:

Well-drilling compositions	C09K 8/02
Compositions for plastering borehole walls	C09K 8/50

Proppants	C09K 8/80
Sealing or packing boreholes or wells	E21B 33/00

Special rules of classification

Documents classified in [C09K 8/42](#) and subgroups receive also a class and CIS codes in [C04B](#) in order to define the cementitious composition in more detail.

Multiple classes can be used where appropriate.

C09K 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](#))

Definition statement

This place covers:

Temporary seal, sealing for control of water flow in or out the formation, fluid loss control, profile modification

References

Limiting references

This place does not cover:

Permanent seal for e.g. killing/closing a well	C09K 8/42 , C04B
Compositions for consolidating loose sand or the like around wells	C09K 8/56

Special rules of classification

- No last place rule in [C09K 8/50](#) - [C09K 8/94](#), multiple classification when appropriate

- When appropriate : use Indexing Code for fibers

Synonyms and Keywords

In patent documents, the following words/expressions are often used as synonyms:

- "fluid loss control", "filtration control", "profile control" and "temporary sealing"

C09K 8/516

characterised by their form or by the form of their components, e.g. encapsulated material

Special rules of classification

For fibers : use Indexing Code

C09K 8/52

Compositions for preventing, limiting or eliminating depositions, e.g. for cleaning

Definition statement

This place covers:

Compositions for use in the well also for removing drilling residues

Cleaning is also called remediation

Relationships with other classification places

Compositions for use in the pipes [F17D](#)

Special rules of classification

- No last place rule in [C09K 8/52](#) - [C09K 8/536](#) , multiple classification needed if material incorporated in characteristic form.
- Compositions for removing drilling residues : [C09K 8/52](#)
- For preventing formation of hydrates formation [C09K 8/52](#) and Indexing Code for "hydrates inhibition"
- Compositions for removing /preventing specific depositions [C09K 8/524-C09K 8/532](#)

Glossary of terms

In this place, the following terms or expressions are used with the meaning indicated:

Cleaning	remediation
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C09K 8/532

Sulfur

Definition statement

This place covers:

Also sulfides

Special rules of classification

For H₂S use corresponding Indexing Code

C09K 8/54

Compositions for in situ inhibition of corrosion in boreholes or wells

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Corrosion inhibitors as such	C23F
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C09K 8/58

Compositions for enhanced recovery methods for obtaining hydrocarbons, i.e. for improving the mobility of the oil, e.g. displacing fluids

Definition statement

This place covers:

secondary and tertiary recovery

References**Limiting references**

This place does not cover:

Injection of Carbon dioxide alone	E21B 43/16
Method/Process for enhanced recovery	E21B 43/16 - E21B 43/248

Informative references

Attention is drawn to the following places, which may be of interest for search:

Surfactants as such	C09K 23/00
Bacteria	C12P , C12R

Special rules of classification

- No last place rule in [C09K 8/58](#)-[C09K 8/594](#), multiple classification might be needed
- Viscoelastic surfactants : Indexing Code for VES

C09K 8/582

characterised by the use of bacteria

Definition statement

This place covers:

also enzymes

Relationships with other classification places

Bacteria as such : [C12P](#), [C12R](#)

Synonyms and Keywords

In patent documents, the following abbreviations are often used:

MEOR	Enhanced oil recovery using bacteria
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C09K 8/584

characterised by the use of specific surfactants

Definition statement

This place covers:

also polymeric surfactants

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Surfactants as such	C09K 23/00
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Special rules of classification

Indexing Code for VES (viscoelastic surfactants)

C09K 8/594

Compositions used in combination with injected gas {, e.g. CO₂ or carbonated gas} ([C09K 8/592](#) takes precedence)

References**Limiting references**

This place does not cover:

N: e.g. CO ₂ or carbonated gas	C09K 8/592
Injection of CO ₂ alone	E21B 43/16

C09K 8/60

Compositions for stimulating production by acting on the underground formation

References**Limiting references**

This place does not cover:

Methods for stimulating production	E21B 43/25
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Special rules of classification

Details of composition: [C09K 8/84](#) - [C09K 8/88](#)

C09K 8/602**{containing surfactants}****Definition statement***This place covers:*

also demulsifiers surfactants

C09K 8/607**{specially adapted for clay formations}****Definition statement***This place covers:*

capillary imbibition

C09K 8/62**Compositions for forming crevices or fractures****References****Limiting references***This place does not cover:*

Gas fracturing	C09K 8/70
Methods for forming fractures or crevices	E21B 43/26
Methods for reinforcing fractures by propping	E21B 43/267

Special rules of classification[C09K 8/62](#) should be used in combination with the classes for specific components**C09K 8/665****{containing inorganic compounds (proppants [C09K 8/80](#))}****Definition statement***This place covers:*

gel breakers

C09K 8/68**containing organic compounds****Definition statement***This place covers:*

monomers and polymers

References

Limiting references

This place does not cover:

Proppants	C09K 8/80
Methods for fracturing	E21B 43/26

Special rules of classification

- defined polymers [C09K 8/68](#) and classes [C09K 8/88-C09K 8/905](#)
- defined surfactants ,[C09K 8/68](#) and class [C09K 8/602](#) and Indexing Code for viscoelastic surfactants (VES) when appropriate.
- organic gel breakers : [C09K 8/68](#) and Indexing Code for " gel breaker" or "bacteria or enzyme breaker"

C09K 8/70

characterised by their form or by the form of their components, e.g. foams

Definition statement

This place covers:

also gas

C09K 8/706

{Encapsulated breakers}

Definition statement

This place covers:

also breakers with any coating which delays the action of the breaker (i.e. also surfactant around the particles)

C09K 8/72

Eroding chemicals, e.g. acids

Definition statement

This place covers:

acid fracturing - acidizing, - fracture acidizing- matrix acidizing

References

Limiting references

This place does not cover:

Use of weak acids for cleaning without creating crevices	C09K 8/52
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Special rules of classification

Acidizing in combination with drilling , [C09K 8/72](#) and [C09K 8/02](#)

C09K 8/74**combined with additives added for specific purposes****Definition statement***This place covers:*

- corrosion inhibitors
- surfactants
- breakers

Special rules of classification

when appropriate, use Indexing Codes for :

- anticorrosion
- Viscoelastic surfactant (VES)
- "gel breaker" or "bacteria or enzyme breaker"

C09K 8/78**for preventing sealing****Definition statement***This place covers:*

Anti-sludge additives

C09K 8/80**Compositions for reinforcing fractures, e.g. compositions of proppants used to keep the fractures open****Definition statement***This place covers:*

Compositions for consolidating fractures and compositions of proppants

References**Limiting references***This place does not cover:*

Fabrication of inorganic particles	B01J
Specific inorganic materials	C01
Fabrication of organic particles	C08J
Methods for reinforcing fractures by propping	E21B 43/267

C09K 8/92

characterised by their form or by the form of their components, e.g. encapsulated material ([C09K 8/70](#) takes precedence)

Definition statement

This place covers:

also gas

References**Limiting references**

This place does not cover:

encapsulated material	C09K 8/70
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C09K 9/00

Tenebrescent materials, i.e. materials for which the range of wavelengths for energy absorption is changed as a result of excitation by some form of energy

Definition statement

This place covers:

Tenebrescent materials, i.e. materials for which the range of wavelength for energy absorption is changed as a result of excitation by some form of energy

References**Application-oriented references**

Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

Phototropic or photochromic glass	C03C 4/06
Measuring temperature by using change of colour or translucency	G01K 11/12
Photochromic filters	G02B 5/23
Devices or arrangements for the control of the intensity, colour, phase, polarisation or direction of light arriving from an independent light source, e.g. switching, gating, or modulating; Non-linear optics	G02F 1/00
Photosensitive materials for photographic purposes	G03C
Cathodochromic screens	H01J 29/14

Informative references

Attention is drawn to the following places, which may be of interest for search:

Luminescent materials	C09K 11/00
Liquid crystal materials	C09K 19/00

Special rules of classification

Markush formulae or generic formulae are not classified, only concrete embodiments or examples are classified. Simple lists of known compounds (without application in an example or embodiment) are not classified.

[C09K 9/02](#) covers organic tenebrescent materials, [C09K 11/06](#) covers organic photoluminescent materials, e.g. phosphors.

The use of Indexing Codes of [C09K 2211/00](#) for specific organic compounds is compulsory.

Further classification has to be made in other places of section C, e.g. [C07](#) or [C08](#), whenever appropriate.

If an application of tenebrescent materials is described, e.g. semiconductor devices or markers in biotechnology, then classification has also to be allocated in the relevant application place.

C09K 11/00

Luminescent materials, e.g. electroluminescent or chemiluminescent

Definition statement

This place covers:

Luminescent materials, i.e. materials emitting light after excitation by some form of energy in the form of e.g. electrical energy, chemical energy, radiation in the visible, ultraviolet, X-ray or gamma-ray range.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Tenebrescent materials	C09K 9/00
Liquid crystal materials	C09K 19/00
Composition of macromolecular compounds	C08L
Investigating materials by chemiluminescence	G01N 21/76
Organic light-emitting devices characterised by the electroluminescent layers	H10K 50/11

Special rules of classification

Markush formulae or generic formulae are not classified, only concrete embodiments or examples are classified. Simple lists of known compounds (without application in an example or embodiment) are not classified.

[C09K 11/06](#) (organic phosphors)

The respective Indexing Codes (range [C09K 2211/00](#) - [C09K 2211/1491](#)) for specific organic compounds have to be applied for all newly classified documents.

[C09K 11/08](#) (inorganic phosphors):

All elements present in inorganic compounds, including doping materials are used to determine their classification within the scheme. Compounds like SiAlON, SiN and AlN phosphors are categorised into the relevant subgroups for silicates and aluminates, e.g. groups [C09K 11/7721](#), [C09K 11/7734](#) and additionally in group [C09K 11/0883](#) to specifically classify nitrides. Silicates and aluminates

are defined as compounds containing silicon or aluminum atoms combined with anions. Under this definition, nitrides ((Si,Al)(O,N)), fluorides (e.g. K_2SiF_6), and sulfides (e.g. $BaAl_2S_4$) are also considered as silicate or aluminate compounds.

In all other cases, the last-place rule is strictly applied (no double classification in the main group and the respective subgroups).

Magnesium is considered as an earth alkali metal for the purpose of this classification scheme.

C09K 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 [H10P 52/40](#)})

Definition statement

This place covers:

Also covers etching of silicon and germanium

References

Limiting references

This place does not cover:

Etching of glass	C03C
for glass	C03C 15/00 , C03C 25/66
For mortars, concrete, artificial or natural stone or ceramics	C04B 41/5338
Etching of polymers	C08J 7/00
Polishing compositions	C09G 1/02
for metallic material	C23F , C23G 1/00 , C25F 1/00
Etching of metals	C23F , C23G
Methods for etching semi-conductors	H10P , H10W

Special rules of classification

Last place rule is to be applied

C09K 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](#))

Definition statement

This place covers:

also UV absorbers

References

Limiting references

This place does not cover:

In foodstuffs	A21D , A23
Compositions for preserving food	A23L
Oxygen scavengers in packaging materials	B65D
Coating or impregnating carbon or graphite based bodies to protect them from oxidation	C04B 41/45
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
Corrosion inhibiting compositions for metallic material	C23F 11/00

Special rules of classification

- anti-oxidised compositions : classified according to the composition itself
- inhibited compositions

In [C09K 15/00](#) - [C09K 15/34](#) : Last Place Rule

Deviation from IPC definition : In present class a metallic salt or complex is classified in [C09K 15/32](#) or [C09K 15/326](#)

C09K 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](#))

Definition statement

This place covers:

Also covers mixtures of soil conditioning materials with fertilisers if the material is characterised by the soil conditioning or soil-stabilising activity

References

Limiting references

This place does not cover:

Specially adapted for boreholes or wells	C09K 8/00
Mixtures of soil conditioning materials with fertilisers characterised by the fertilising activity	C05B - C05G
Consolidating by placing solidifying or pore-filling substances in the soil	E02D 3/12

Informative references

Attention is drawn to the following places, which may be of interest for search:

Sports fields	A63K 1/00
Treatment of contaminated soils	B09C 1/00 , B09B 3/00
Cement grouts	C04B
Fertilisers	C05B - C05G
Coating of dams	E02B 3/12
Protection of foundations	E02D 1/00 , E02D 19/00
Securing of slopes	E02D 17/20

Special rules of classification

In [C09K 17/02](#) - [C09K 17/52](#) : Last Place Rule

C09K 17/08

Aluminium compounds, e.g. aluminium hydroxide

Definition statement

This place covers:

Also aluminates, zeolites, pozzolanic materials

C09K 17/16

applied in a physical form other than a solution or a grout, e.g. as platelets or granules

Definition statement

This place covers:

Also foams

C09K 17/22

Polyacrylates; Polymethacrylates

Definition statement

This place covers:

Also polyacrylamides

C09K 17/32

of natural origin, e.g. cellulosic materials

Definition statement

This place covers:

Also starch derivatives, sugars, proteins, biopolymers

C09K 17/42

Inorganic compounds mixed with organic active ingredients, e.g. accelerators

Definition statement

This place covers:

Also microorganisms as organic active ingredient

C09K 17/52

Mulches

Definition statement

This place covers:

also

- film-forming compositions

- cover layers , geotextile

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Protection of plants with mulches	A01G 13/35
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C09K 19/00

Liquid crystal materials

Definition statement

This place covers:

Liquid crystal (LC) compounds (non-polymeric, as well as polymeric),

mixtures of liquid crystal compounds, and mixtures of liquid crystal compounds with additives that are NOT liquid crystal compounds (solvents, solid particles, macromolecular compounds, aligning agents, dopants, charge transfer agents, surfactants, pleochroic dyes).

Relationships with other classification places

Organic compounds [C07](#)

Organic macromolecular compounds [C08](#)

Optical elements, systems, or apparatus [G02B](#)

Devices or arrangements for the control of the intensity, colour, phase, polarisation or direction of light arriving from an independent light source, e.g. switching, gating, or modulating; Non-linear optics [G02F 1/00](#)

References

Limiting references

This place does not cover:

Polarising elements	G02B 5/30
The electronics of a liquid crystal display	G02F 1/00
Light-modulating devices	G02F 1/00

Informative references

Attention is drawn to the following places, which may be of interest for search:

Heterocyclic compounds containing five-membered rings, condensed with other rings, with one nitrogen atom as the only ring hetero atom	C07D 209/00
Copolymers in which the nature of only the monomers in minority is defined	C08F 246/00
Manufacture of films or sheets	C08J 5/18
Optical Filters	G02B 5/201
Holograms	G02B 5/32
Luminescent elements	G02F 1/133617
Surface-induced orientation of the liquid crystal molecules, e.g. by alignment layers	G02F 1/1337
Recording or reproducing by optical means; Recording by modifying optical properties, (e.g. by using electromagnetic radiation)	G11B 7/00
Record Carriers	G11B 7/24

Special rules of classification

In the subgroups [C09K 19/02](#) - [C09K 19/603](#), in the absence of an indication to the contrary, materials are classified in the last appropriate place. In the case of Markush formulae, the inventive idea is classified. Further, an attempt is made to classify each exemplified embodiment.

The general philosophy could be summarized as follows:

[C09K 19/02](#) - [C09K 19/0283](#)

LC compounds or the LC mixtures characterised in general by the optical, electrical or physical properties of the components are classified in the subgroups [C09K 19/02](#) - [C09K 19/0283](#). The two-dot subgroups [C09K 19/0208](#) - [C09K 19/0283](#) are non-hierarchical and each embodiment or example of a LC compound or mixture should be classified and may be placed in a different subgroup.

[C09K 19/04](#) - [C09K 19/50](#)

These subgroups cover LC compounds or the LC mixtures characterised in general by the chemical structure of the liquid crystal component, mainly the specific ring or rings or ring system(s) used, as well as the linking groups between the rings.

[C09K 19/52](#) - [C09K 19/603](#) These subgroups cover LC mixtures characterised in general by the chemical structure of the components, which are not liquid crystals, e.g. additives.

In short every document may be classified

in one or more subgroups from [C09K 19/02](#) - [C09K 19/0283](#) and/or

in one or more subgroups from [C09K 19/04](#) - [C09K 19/50](#) and/or

in one or more subgroups from [C09K 19/52](#) - [C09K 19/603](#).

We place the LC embodiments in groups, where we expect to retrieve them accurately and efficiently during search. When in doubt, classify! What goes under a specific group is straightforward, since the title of the group is comprehensive.

Next to the ECLA Scheme (based on the ring(s) of the LC molecules), a non-hierarchical Indexing Code has been developed to cater for cases, where a specific unit, a linking group, an end group, the positioning of a substituent, or a special bonding is the characterising part of the chemical structure of the liquid crystal component, instead of the ring or rings that constitute the LC molecule.

That means that documents in various groups may get the same Indexing Code.

Figuratively speaking, the Indexing Code ([C09K 19/04](#) - [C09K 2019/0496](#)) cuts vertically the EC-Scheme.

In other cases ([C09K 19/06](#) to end) the Indexing Code gives

a more detailed view of the sequence of rings and linkers in a LC molecule or

a more detailed list of the compounding ingredients.

C09K 19/02

characterised by optical, electrical or physical properties of the components, in general

Special rules of classification

LC compounds or the LC mixtures characterised in general by the optical, electrical or physical properties of the components are classified in the subgroups [C09K 19/02](#) - [C09K 19/0283](#). The two-

dot subgroups [C09K 19/0208](#) - [C09K 19/0283](#) are non-hierarchical and each embodiment or example of a LC compound or mixture should be classified and may be placed in a different subgroup.

C09K 19/04

characterised by the chemical structure of the liquid crystal components {, e.g. by a specific unit}

Definition statement

This place covers:

LC compounds or the LC mixtures characterised by the chemical structure of the liquid crystal components, that is by a specific unit - see the Indexing Code.

C09K 19/0403

{the structure containing one or more specific, optionally substituted ring or ring systems}

Definition statement

This place covers:

LC compounds or the LC mixtures characterised in that the structure contains one or more specific, optionally substituted ring or ring systems - see the Indexing Code.

C09K 19/0422

{Sugars (polysaccharides [C09K 19/3819](#))}

Definition statement

This place covers:

Sugars.

References

Limiting references

This place does not cover:

Polysaccharides	C09K 19/3819
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C09K 19/06

Non-steroidal liquid crystal compounds

Definition statement

This place covers:

Non-steroidal liquid crystal compounds; e.g. linear compounds without any rings, as well as mainly containing ONE non-condensed ring.

Special rules of classification

Non-steroidal liquid crystal compounds; e.g. linear compounds like R1-COO-R2, R-O-CH=CH2, or R-COOH, as well as mainly containing ONE non-condensed ring like R-Cy-COOH, or R-(A-Z1)_n-Cy-R2 with n=0-3.

C09K 19/08**containing at least two non-condensed rings****Definition statement***This place covers:*

Liquid crystal compounds containing at least two non-condensed rings,

e.g. not naphthyl, fluorene and the like

If the rings are clearly defined, they are classified in lower subgroups [C09K 19/10](#) - [C09K 19/3098](#)**C09K 19/10****containing at least two benzene rings****Definition statement***This place covers:*

Liquid crystal compounds containing at least two benzene rings - see the Indexing Code.

Special rules of classification

A mixture of [C09K 19/12](#) and/or [C09K 19/126](#) and/or [C09K 19/14](#) and/or [C09K 19/16](#) and/or [C09K 19/18](#) is classified in [C09K 19/10](#). Here we stay in the common nod of the hierarchical tree, from which the five nodes depend.

C09K 19/12**at least two benzene rings directly linked, e.g. biphenyls****Special rules of classification**

In [C09K 19/12](#) for example not only compounds such as Ph-Ph, Ph-Ph-Ph, Ph-Ph-Ph-Ph etc. are classified, but also mixtures of such compounds.

C09K 19/20**linked by a chain containing carbon and oxygen atoms as chain links, e.g. esters {or ethers}****Special rules of classification**

A mixture of Ph-O-C₂H₄-Ph ([C09K 19/20](#)) and Ph-COO-Ph ([C09K 19/2007](#)) is classified in [C09K 19/20](#). Here the common nod of the hierarchical tree, from which the two nodes depend, is the first nod.

C09K 19/30**containing saturated or unsaturated non-aromatic rings, e.g. cyclohexane rings****Definition statement***This place covers:*

Liquid crystal compounds containing saturated or unsaturated non-aromatic rings, e.g. cyclohexane, cyclohexene, cyclobutane rings - see the Indexing Code

Special rules of classification

A mixture of Cy-C₂H₄-Cy ([C09K 19/3028](#)) (II) and Cy-Ph-Ph ([C09K 19/3003](#)) (III) is classified in [C09K 19/3001](#) (I). Here we stay in the common nod (I) of the hierarchical tree, from which the two nods (II) and (III) depend.

A mixture of [C09K 19/3001](#) and/or [C09K 19/3003](#) and/or [C09K 19/3028](#) and/or [C09K 19/3048](#) and/or [C09K 19/3059](#) is classified in [C09K 19/3001](#). Here we stay in the common nod of the hierarchical tree, from which the five nods depend.

C09K 19/3003

{Compounds containing at least two rings in which the different rings are directly linked (covalent bond)}

Special rules of classification

A mixture of Cy-Ph-Cy ([C09K 19/3003](#)) and Cy-Ph-Ph ([C09K 19/3003](#)) is classified in [C09K 19/3003](#). Here we stay in the same nod of the hierarchical tree.

C09K 19/32

containing condensed ring systems, i.e. fused, bridged or spiro ring systems

Definition statement

This place covers:

Liquid crystal compounds containing condensed ring systems, i.e. fused, bridged or spiro ring systems.

Here is a non limited list of fused, bridged or spiro ring systems classified under this group: anthracene, phenanthrene, fluorene, triphenylene, azulene, perylene, dibenzopyrene, twistane, bicyclopentane, hexabenzocoronene, resorcinarenes, propellane, truxene, carboranes, cubane, chrysene, decacyclene, calixarenes, triptycene, metacyclophanes, cyclotrimeratrylene, cyclotetraveratrylene, trisbenzocyclononene, tetrabenzocyclododecatetraene, hexahelicene, octahelicene, fullerene.

C09K 19/34

containing at least one heterocyclic ring

Definition statement

This place covers:

Liquid crystal compounds containing at least one heterocyclic ring.

Special rules of classification

Liquid crystal compounds containing at least one heterocyclic ring, where the ring comprises oxygen, nitrogen, or sulfur or any combination of these three elements.

C09K 19/3452**{Pyrazine}****References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

Also fused compounds, like quinoxaline.

C09K 19/36**Steroidal liquid crystal compounds****Definition statement**

This place covers:

Steroidal liquid crystal compounds.

Special rules of classification

Liquid crystal cholesterol derivatives.

C09K 19/38**Polymers****Definition statement**

This place covers:

Polymeric compounds with liquid crystalline properties.

References**Limiting references**

This place does not cover:

Mechanical properties of the polymers appear	C08G 63/00
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Special rules of classification

Here we classify polyesters and polyester derivatives such as polyamides, with mesogenic groups in the main chain.

C09K 19/40**containing elements other than carbon, hydrogen, halogen, oxygen, nitrogen or sulfur, e.g. silicon, metals****Definition statement**

This place covers:

Liquid crystal compounds containing elements other than carbon, hydrogen, halogen, oxygen, nitrogen or sulfur, e.g. silicon, boron, phosphorus, metals.

C09K 19/42

Mixtures of liquid crystal compounds covered by two or more of the preceding groups [C09K 19/06](#) - [C09K 19/40](#)

Definition statement

This place covers:

Mixtures of liquid crystal compounds.

Mixtures containing two or more liquid crystal compounds covered individually by the same group [C09K 19/04](#) - [C09K 19/408](#) are classified only in that group. In other words, in [C09K 19/12](#) for example not only compounds such as Ph-Ph, Ph-Ph-Ph, Ph-Ph-Ph-Ph etc. are classified, but also mixtures of such compounds.

Different embodiments for LC mixtures may be classified in a different group. If liquid crystal components of the mixtures classified in groups from [C09K 19/42](#) - [C09K 19/50](#) are of importance as such, they should also be classified according to the compounds in groups from [C09K 19/04](#) - [C09K 19/408](#).

Special rules of classification

Here we classify mixtures of liquid crystal compounds containing compounds covered by two or more of the preceding groups [C09K 19/06](#) - [C09K 19/408](#), compare the numbered sets 4 to 12 of the main subgroups. However, if all compounds of the mixture fall under the same head subgroup, the mixture is classified in that head subgroup. Some examples might clarify this:

- A mixture of Cy-Ph-Cy ([C09K 2019/3013](#)) and Cy-Ph-Ph ([C09K 2019/3016](#)) is classified in [C09K 19/3003](#). Here we stay in the same nod of the hierarchical tree.
- A mixture of Cy-C₂H₄-Cy ([C09K 2019/303](#)) (II) and Cy-Ph-Ph ([C09K 2019/3016](#)) (III) is classified in [C09K 19/3001](#) (I). Here we stay in the common nod (I) of the hierarchical tree, from which the two nods (II) and (III) depend.
- A mixture of Ph-O-C₂H₄-Ph ([C09K 19/20](#)) and Ph-COO-Ph ([C09K 19/2007](#)) is classified in [C09K 19/20](#). Here the common nod of the hierarchical tree, from which the two nods depend, is the first nod.
- A mixture of [C09K 19/12](#) and/or [C09K 19/126](#) and/or [C09K 19/14](#) and/or [C09K 19/16](#) and/or [C09K 19/18](#) is classified in [C09K 19/10](#). Here we stay in the common nod of the hierarchical tree, from which the five nods depend.
- A mixture of [C09K 19/3001](#) and/or [C09K 19/3003](#) and/or [C09K 19/3028](#) and/or [C09K 19/3048](#) and/or [C09K 19/3059](#) is classified in [C09K 19/3001](#). Here we stay in the common nod of the hierarchical tree, from which the five nods depend.

C09K 19/44

containing compounds with benzene rings directly linked

Special rules of classification

Here we classify mixtures of liquid crystal compounds containing compounds with benzene rings directly linked falling under [C09K 19/12](#). Example Cy-C₂H₄-Cy and Ph-Ph.

C09K 19/46**containing esters****Special rules of classification**

Here we classify mixtures of liquid crystal compounds containing ester compounds falling under [C09K 19/2007](#) through [C09K 19/2028](#), or under [C09K 19/3068](#). Example Cy-OCF₂-Cy and Ph-COO-Ph.

C09K 19/48**containing Schiff bases****Special rules of classification**

Here we classify mixtures of liquid crystal compounds containing Schiff base compounds falling under [C09K 19/22](#). Example Cy-OCH₂-Cy and Ph-CH=N-Ph.

C09K 19/50**containing steroidal liquid crystal compounds****Special rules of classification**

Here we classify mixtures of liquid crystal compounds containing steroidal liquid crystal compounds falling under [C09K 19/36](#).

C09K 19/52**characterised by components which are not liquid crystals, e.g. additives {with special physical aspect: solvents, solid particles}****Special rules of classification**

These subgroups cover LC mixtures characterised in general by the chemical structure of the components, which are not liquid crystals, e.g. additives, solvents, organic or inorganic solid particles, macromolecular compounds, dopants.

C09K 19/56**Aligning agents****References****Limiting references**

This place does not cover:

The alignment layers per se	G02F 1/1337
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Special rules of classification

Here we classify Aligning Agents used in admixture with LC materials to improve the aligning properties of the LC materials.

C09K 21/00

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 [C09D 5/18](#))

Definition statement

This place covers:

Inorganic materials

Organic materials

Macromolecular materials

References

Limiting references

This place does not cover:

Fire-fighting	A62C
Fire-extinguishing compositions	A62D 1/00 - A62D 1/06
Laminates	B32B
Refractory materials	C04B 35/00 - C04B 35/597

Informative references

Attention is drawn to the following places, which may be of interest for search:

Fireproofing of wood	B27K
Fireproofing of polymers	C08
Fireproof paints	C09D 5/18
Fireproofing of textiles	D06M
Fireproofing of paper)	D21H
Protection of constructions against fire	E04B 1/94
Protection of pipes by means of non-inflammable material	F16L 57/04
Protection of cables	H01B

Special rules of classification

[C09K](#) relates to materials not provided elsewhere,

therefore

If the fire-proofing material is only claimed with regard to a particular application and if in said particular application field a class related to the chemical nature of the fireproofing material exists the document should only be classified in the application field

If no particular application of the fireproofing material is cited the document should only be classified in the appropriate [C09K 21/00](#) group.

If the fireproofing material is claimed without particular uses the document should be classified in the appropriate [C09K 21/00](#) group,

however

If particular applications are cited (e.g. in the description) the document should additionally be classified in the relevant application fields

and

if many different applications are cited the document should only be classified in the appropriate [C09K 21/00](#) group.