

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

##### Informative references

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

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

## 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	<a href="#">C04B</a>
Filling pastes	<a href="#">C09D 5/34</a>
Adhesives	<a href="#">C09J</a>

### Informative references

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

Use of inorganic ingredients	<a href="#">C08K 3/00</a> - <a href="#">C08K 3/40</a>
Use of organic ingredients	<a href="#">C08K 5/00</a> - <a href="#">C08K 5/59</a>
Compositions of macromolecular compounds	<a href="#">C08L</a>

### 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](#); polishing of semi-conductors [H01L](#); friction compositions for brakes or clutches [F16D 69/02](#))}

### 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	<a href="#">B24B 31/14</a> , <a href="#">B24C 1/00</a>
Polishing compositions containing an abrasive which is not specific or polishing compositions WITHOUT abrasive	<a href="#">C09G 1/02</a>
Polishing compositions containing abrasive or grinding agents	<a href="#">C09G 1/02</a>

## Limiting references

Polishing of semi-conductors <a href="#">H01L</a> ; friction compositions for brakes or clutches	<a href="#">F16D 69/02</a>
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**Informative references**

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

Cleaning or scraping pads	<a href="#">A47L 17/00</a>
Lapping	<a href="#">B24B</a>
products specifically intended for the fabrication of abrasive tools, blocks or papers, or for operations of the kind of sand-blasting and barrelling	<a href="#">B24B 31/14</a> , <a href="#">B24C 1/00</a> ;
Tools, grinding wheels	<a href="#">B24D</a>
Sawing fluids e.g. of silicon ingots, precious stones	<a href="#">B28D</a>
Polishing of glass	<a href="#">C03C</a>
Abrasives as fillers for polymers	<a href="#">C08K 3/00</a>
; polishing compositions containing abrasive or grinding agents	<a href="#">C09G 1/02</a>
Polishing of metals	<a href="#">C23F</a>
friction compositions for brakes or clutches	<a href="#">F16D 69/02</a>
polishing of semi-conductors	<a href="#">H01L</a> ;

**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	<a href="#">B01J</a>
Abrasive particles for sand blasting	<a href="#">B24C 11/00</a>
Preparation of diamond	<a href="#">C01B 32/25</a>
Abrasives particles as fillers for polymers	<a href="#">C08K 3/00</a>

**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	<a href="#">B24B</a>
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Sawing fluids e.g. of silicon ingots, precious stones	<a href="#">B28D</a>
Polishing of glass	<a href="#">C03C 19/00</a>
Methods and processes for polishing semi-conductors	<a href="#">H01L</a>
Polishing of semi-conductors	<a href="#">H01L 21/00</a>

## C09K 3/16

### Anti-static materials

#### References

##### Limiting references

*This place does not cover:*

Conductive materials	<a href="#">H01B 1/00</a>
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##### Informative references

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

Antistatic paper	<a href="#">D21H 5/00</a>
Photo paper	<a href="#">G03C 1/00</a>

## 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,	<a href="#">C09K 5/00</a>
Rendering particulate materials free flowing, in general, e.g. making them hydrophobic	<a href="#">B01J 2/30</a>
Permanent coating ( polymer -> film)	<a href="#">C09D</a>

**Informative references**

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

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

**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	<a href="#">C05G</a>
Treatment of road surfaces	<a href="#">E01H 3/00</a>
Treatment of mines	<a href="#">E21F 5/00</a>
Treatment of tunnel walls	<a href="#">E21F 5/18</a>

**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	<a href="#">E01C 13/10</a>
Fabrication of Ice or snow for sports	<a href="#">F25C 3/00</a>

**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	<a href="#">A61M 11/00</a>
Inhalators	<a href="#">A61M 15/00</a>
Aerosol containers	<a href="#">B65D 83/14</a>

## 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	<a href="#">A01K 1/015</a>
Solid sorbents	<a href="#">B01J 20/22</a>
Treatment of water	<a href="#">C02F</a>
Apparatus for removing oil from water	<a href="#">E02B 15/04</a>

## 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	<a href="#">B60H</a>
Lubricating compositions	<a href="#">C10M</a>
Corrosion inhibitors	<a href="#">C23F 11/00</a>

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

### 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	<a href="#">C10G 32/04</a>
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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	<a href="#">C09K 8/02</a>
Compositions for plastering borehole walls	<a href="#">C09K 8/50</a>

Proppants	<a href="#">C09K 8/80</a>
Sealing or packing boreholes or wells	<a href="#">E21B 33/00</a>

### 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	<a href="#">C09K 8/42</a> , <a href="#">C04B</a>
Compositions for consolidating loose sand or the like around wells	<a href="#">C09K 8/56</a>

### 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 H<sub>2</sub>S 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	<a href="#">C23F</a>
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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	<a href="#">E21B 43/16</a>
Method/Process for enhanced recovery	<a href="#">E21B 43/16</a> - <a href="#">E21B 43/248</a>

#### Informative references

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

Surfactants as such	<a href="#">C09K 23/00</a>
Bacteria	<a href="#">C12P</a> , <a href="#">C12R</a>

### 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	<a href="#">C09K 23/00</a>
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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. CO<sub>2</sub> or carbonated gas} ([C09K 8/592](#) takes precedence)

**References****Limiting references**

*This place does not cover:*

N: e.g. CO <sub>2</sub> or carbonated gas	<a href="#">C09K 8/592</a>
Injection of CO <sub>2</sub> alone	<a href="#">E21B 43/16</a>

**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	<a href="#">E21B 43/25</a>
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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	<a href="#">C09K 8/70</a>
Methods for forming fractures or crevices	<a href="#">E21B 43/26</a>
Methods for reinforcing fractures by propping	<a href="#">E21B 43/267</a>

**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	<a href="#">C09K 8/80</a>
Methods for fracturing	<a href="#">E21B 43/26</a>

## 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	<a href="#">C09K 8/52</a>
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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	<a href="#">B01J</a>
Specific inorganic materials	<a href="#">C01</a>
Fabrication of organic particles	<a href="#">C08J</a>
Methods for reinforcing fractures by propping	<a href="#">E21B 43/267</a>

**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	<a href="#">C09K 8/70</a>
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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	<a href="#">C03C 4/06</a>
Measuring temperature by using change of colour or translucency	<a href="#">G01K 11/12</a>
Photochromic filters	<a href="#">G02B 5/23</a>
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	<a href="#">G02F 1/00</a>
Photosensitive materials for photographic purposes	<a href="#">G03C</a>
Cathodochromic screens	<a href="#">H01J 29/14</a>

**Informative references**

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

Luminescent materials	<a href="#">C09K 11/00</a>
Liquid crystal materials	<a href="#">C09K 19/00</a>

## 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, e.g. electroluminescent, chemiluminescent materials

#### 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

##### Limiting references

*This place does not cover:*

Liquid crystal materials	<a href="#">C09K 19/00</a>
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##### Informative references

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

Tenebrescent materials	<a href="#">C09K 9/00</a>
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## 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 Code (range [C09K 2211/00](#)) for specific organic compounds have to be applied for all newly classified documents.

The documents have to be circulated to the corresponding classifiers in organic chemistry or polymers.

Other neighbouring fields should receive the document if an application in the respective field is mentioned (e.g. semiconductors, markers in biotechnology).

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

all elements in the inorganic compounds are used to determine the position in the scheme including the doping materials (Si,Al)(O,N) SiAlON, SiN, AlN phosphors are classified under the respective subclasses dealing with silicates/aluminates (e.g. [C09K 11/7721](#), [C09K 11/7734](#) etc.) and additionally under [C09K 11/0883](#), in order to classify the nitride. A silicate and aluminate is a compound containing a silicon and/or aluminium atom and an anion. Under this definition nitrides ((Si,Al)(O,N)), fluorides (e.g. K<sub>2</sub>SiF<sub>6</sub>), sulfides (e.g. BaAl<sub>2</sub>S<sub>4</sub>) are considered as silicates/aluminates.

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

Markush formulae or general formulae are not classified, only concrete embodiments or examples.

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 [H01L](#)})**

### **Definition statement**

*This place covers:*

Also covers etching of silicon and germanium

### **References**

#### **Limiting references**

*This place does not cover:*

Etching of glass	<a href="#">C03C</a>
for glass	<a href="#">C03C 15/00</a> , <a href="#">C03C 25/66</a>
For mortars, concrete, artificial or natural stone or ceramics	<a href="#">C04B 41/5338</a>
Etching of polymers	<a href="#">C08J 7/00</a>
Polishing compositions	<a href="#">C09G 1/02</a>
for metallic material	<a href="#">C23F</a> , <a href="#">C23G 1/00</a> , <a href="#">C25F 1/00</a>
Etching of metals	<a href="#">C23F</a> , <a href="#">C23G</a>
Methods for etching semi-conductors	<a href="#">H01L</a>

### **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	<a href="#">A21D</a> , <a href="#">A23</a>
Compositions for preserving food	<a href="#">A23L</a>
Oxygen scavengers in packaging materials	<a href="#">B65D</a>
Coating or impregnating carbon or graphite based bodies to protect them from oxidation	<a href="#">C04B 41/45</a>
In association with organic compounds	<a href="#">C07C</a> , <a href="#">C07D</a>
In macromolecular compositions	<a href="#">C08</a>
In liquid fuels or lubricants	<a href="#">C10</a>
In fats, fatty substances, fatty oils or waxes	<a href="#">C11B 5/00</a>
In detergents	<a href="#">C11D</a>
Corrosion inhibiting compositions for metallic material	<a href="#">C23F 11/00</a>

### 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	<a href="#">C09K 8/00</a>
Mixtures of soil conditioning materials with fertilisers characterised by the fertilising activity	<a href="#">C05B</a> - <a href="#">C05G</a>
Consolidating by placing solidifying or pore-filling substances in the soil	<a href="#">E02D 3/12</a>

#### Informative references

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

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

### 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:

Protective coverings for plants	<a href="#">A01G 13/02</a>
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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	<a href="#">G02B 5/30</a>
The electronics of a liquid crystal display	<a href="#">G02F 1/00</a>
Light-modulating devices	<a href="#">G02F 1/00</a>

##### 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	<a href="#">C07D 209/00</a>
Copolymers in which the nature of only the monomers in minority is defined	<a href="#">C08F 246/00</a>
Manufacture of films or sheets	<a href="#">C08J 5/18</a>
Optical Filters	<a href="#">G02B 5/201</a>
Holograms	<a href="#">G02B 5/32</a>
Luminescent elements	<a href="#">G02F 1/133617</a>
Surface-induced orientation of the liquid crystal molecules, e.g. by alignment layers	<a href="#">G02F 1/1337</a>
Recording or reproducing by optical means; Recording by modifying optical properties, (e.g. by using electromagnetic radiation)	<a href="#">G11B 7/00</a>
Record Carriers	<a href="#">G11B 7/24</a>

## 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 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	<a href="#">C09K 19/3819</a>
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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)<sub>n</sub>-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-C<sub>2</sub>H<sub>4</sub>-Ph ([C09K 19/20](#)) and Ph-COO-Ph ([C09K 19/2007](#)) is classified in [C09K 19/20](#). Here the common node of the hierarchical tree, from which the two nodes depend, is the first node.

## 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-C<sub>2</sub>H<sub>4</sub>-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	<a href="#">C08G 63/00</a>
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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](#) through [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 ([C09K19/39A1](#)) and Cy-Ph-Ph ([C09K19/39A1](#)) is classified in [C09K19/39A1](#). Here we stay in the same nod of the hierarchical tree.
- A mixture of Cy-C<sub>2</sub>H<sub>4</sub>-Cy ([C09K19/39A2](#)) (II) and Cy-Ph-Ph ([C09K19/39A1](#)) (III) is classified in [C09K19/39A](#) (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-C<sub>2</sub>H<sub>4</sub>-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-C<sub>2</sub>H<sub>4</sub>-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-OCF<sub>2</sub>-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-OCH<sub>2</sub>-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	<a href="#">G02F 1/1337</a>
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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	<a href="#">A62C</a>
Fire-extinguishing compositions	<a href="#">A62D 1/00</a> - <a href="#">A62D 1/06</a>
Laminates	<a href="#">B32B</a>
Refractory materials	<a href="#">C04B 35/00</a> - <a href="#">C04B 35/597</a>

#### Informative references

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

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

### 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.