

## C08K

### Use of inorganic or non-macromolecular organic substances as compounding ingredients (paints, inks, varnishes, dyes, polishes, adhesives [C09](#))

#### Definition statement

*This place covers:*

- Use of inorganic or non-macromolecular organic substances as compounding ingredients in compositions of single polymers, which are not used to chemically modify the polymer, i.e. inert additives;
- Inorganic or non-macromolecular organic substances which should start or accelerate a crosslinking but which are not chemically embedded in the polymer structure;
- Radical crosslinking agents, e.g. peroxides or S-containing vulcanisation agents;
- Coupling agents, i.e. compounds able to improve the adhesion between filler and macromolecule; or silane compounds.
- Carbodiimide and derivatives (compounds which have the same chemical role as carbodiimides).
- Vulcanizing agents for diene resins

#### Relationships with other classification places

This subclass does not cover chemical elements or compounds or their preparation as such, which subject matter is covered by classes [C01](#) (inorganic chemistry) or [C07](#) (organic chemistry).

Blowing agents are classified in [C08J](#).

Glass which is defined by the chemical nature of its ingredients is classified in [C03C](#).

Polymeric compositions comprising inorganic substances and being suitable for ceramic, cement or stone like applications is classified in [C04B](#).

Polymeric compositions comprising inorganic substances and being suitable for thermoconducting, electroconducting, insulating, magnetic or resistor applications are classified in [H01B](#), [H01C](#) or [H01F](#).

Polymeric compositions comprising inorganic substances and being suitable for medical or dental applications are classified in [A61K](#).

Compositions of macromolecular compounds (with or without compounding ingredients) are classified in [C08L](#).

#### 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:*

Disinfectants, pesticides or herbicides	<a href="#">A01N</a>
Pharmaceutical, medical, medicinal, dental, therapeutical or cosmetic compositions	<a href="#">A61K</a> , <a href="#">A61L</a>
Layered products	<a href="#">B32B</a>
Compositions of cements, mortars, concrete or ceramics	<a href="#">C04B</a>
Explosive or thermic compositions	<a href="#">C06B</a>
Use of reinforcing fibrous material in the manufacture of articles or shaped materials containing macromolecular substances	<a href="#">C08J 5/04</a> - <a href="#">C08J 5/10</a>
Organic dyes and pigments; Mordants; Lakes	<a href="#">C09B</a>

Treatment of inorganic materials to enhance their pigmenting or filling properties	<a href="#">C09C</a>
Paints based on inorganic substances, with or without organic additives	<a href="#">C09D 1/00</a> - <a href="#">C09D 1/12</a>
Anti-corrosive paints containing metal dust	<a href="#">C09D 5/10</a>
Paints containing biocides, e.g. fungicides, insecticides, pesticides	<a href="#">C09D 5/14</a>
Magnetisable or magnetic paints or lacquers	<a href="#">C09D 5/23</a>
Electrically-conductive paints	<a href="#">C09D 5/24</a>
Paints containing free metal	<a href="#">C09D 5/38</a>
Other additives in coating compositions	<a href="#">C09D 7/40</a>
Use of compounds as anti-settling agents in coating compositions	<a href="#">C09D 7/45</a>
Use of compounds as anti-skinning agents in coating	<a href="#">C09D 7/46</a>
Use of compounds as levelling agents in coating compositions	<a href="#">C09D 7/47</a>
Chemical paint or ink removers with abrasives	<a href="#">C09D 9/02</a>
Chemical paint or ink removers with surface-active agents	<a href="#">C09D 9/04</a>
Pigment pastes, e.g. for mixing in paints	<a href="#">C09D 17/00</a>
Polishing compositions	<a href="#">C09F</a> , <a href="#">C09G</a>
Electrically-conductive adhesives	<a href="#">C09J 9/02</a>
Non-macromolecular additives in adhesives	<a href="#">C09J 11/02</a>
Inorganic additives in adhesives	<a href="#">C09J 11/04</a>
Organic additives in adhesives	<a href="#">C09J 11/06</a>
Macromolecular additives in adhesives	<a href="#">C09J 11/08</a>
Compositions for sealing or packing joints or covers	<a href="#">C09K 3/10</a>
Compositions for stopping leaks	<a href="#">C09K 3/12</a>
Compositions for drilling of boreholes or wells	<a href="#">C09K 8/00</a>
Soil-conditioning or soil-stabilising materials	<a href="#">C09K 17/00</a>
Lubricating compositions	<a href="#">C10M</a>
Detergent compositions	<a href="#">C11D</a>
Artificial filaments or fibres	<a href="#">D01F</a>
Textile treating compositions	<a href="#">D06M</a> , <a href="#">D06N</a>
Conductors or insulators	<a href="#">H01B</a>

### **Informative references**

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

Making microcapsules or microballoons	<a href="#">B01J 13/02</a>
Making fibre-reinforced granules	<a href="#">B29B 9/14</a>
Pretreatment of reinforcements or fillers	<a href="#">B29B 15/08</a>
Releasing, lubricating or separating agents	<a href="#">B29C 33/56</a>
Shaping composites, i.e. plastics material comprising reinforcements or fillers	<a href="#">B29C 70/00</a>
Tyres characterised by the chemical composition	<a href="#">B60C 1/00</a>

Stabilisation of cellulose esters of organic acids	<a href="#">C08B 3/30</a>
Stabilisation of cellulose esters of inorganic acids	<a href="#">C08B 5/08</a>
Preservation of rubber latex	<a href="#">C08C 1/06</a>
Chemical modification of rubber	<a href="#">C08C 19/00</a>
Polymerisation in the presence of compounding ingredients, e.g. plasticisers, dyestuffs, fillers	<a href="#">C08F 2/44</a>
Processes of plasticising macromolecular compounds	<a href="#">C08J 3/18</a>
Processes of compounding polymers with additives, in general	<a href="#">C08J 3/20</a>
Processes of crosslinking, e.g. vulcanising, of macromolecules	<a href="#">C08J 3/24</a>
Compositions of macromolecular compounds (with or without compounding ingredients)	<a href="#">C08L</a>
Coating compositions	<a href="#">C09D</a>
Coating thickening agents	<a href="#">C09D 7/43</a> - <a href="#">C09D 7/44</a>
Adhesives	<a href="#">C09J</a>
Anti-oxidant compositions; Compositions inhibiting chemical change	<a href="#">C09K 15/00</a>
Fireproofing of macromolecular materials	<a href="#">C09K 21/14</a>
Conductors or insulators	<a href="#">H01B</a>

### Special rules of classification

Reference [C09](#) is non-limiting in the subclass [C08K](#). CPC will be updated/corrected once this inconsistency in IPC is resolved.

Last place priority rule:

Within each group of this subclass, in the absence of an indication to the contrary, classification is made in the last appropriate place.

Classification guidance:

Subgroups of [C08K](#) are used for compounding ingredients (additives) in admixture with a single polymer only or with a single polymer from a list of alternative unblended polymers.

A compounding ingredient in admixture with a single polymer is classified as a single symbol in [C08K](#), and as a C-Set when the nature of the polymer is specified (see Combination-Sets information below).

Compounding ingredient(s) in a composition of more than one polymers is classified in the form of C-Sets in [C08L](#) (see Combination-Sets information in [C08L](#)).

In this subclass, the following are considered as compounding ingredients:

- inert additives
- radical crosslinking agents, e.g. peroxides, S-containing vulcanisation agents
- coupling agents, i.e. compounds able to improve the adhesion between fillers and macromolecules; or silane compounds

The following are not considered as compounding ingredients:

- chemical modifying or crosslinking agents, except silanes, which react via a condensation or addition mechanism are classified with the appropriate polymer (e.g. in [C08B](#), [C08C](#), [C08F](#), [C08G](#))
- solvents or dispersion agents for making polymer solutions, emulsions or dispersions ([C08J 3/02](#))
- blowing agents ([C08J 9/04](#))

Modified (e.g. surface-treated) additives should be classified in [C08K 9/00](#). Additional information (CCA) should be given for the specific treated additive (e.g. coated silica ([C08K 3/36](#))).

Mixtures with two or three ingredients are classified in the appropriate groups of [C08K](#), e.g. a mixture of Al<sub>2</sub>O<sub>3</sub>, an ether and an amine is classified in [C08K 3/22](#), [C08K 5/06](#) and [C08K 5/17](#).

[C08K 13/00](#) - [C08K 13/08](#) should be used for classification only for mixtures with four or more essential additives.

Ammonium salts are classified in the same way as metal salts.

In this subclass, organic acid salts, alcoholates, phenolates or mercaptides are classified in the groups or subgroups of the parent compounds.

In the fields [C09J 7/00](#) (adhesives) and [C09D 7/00](#) (coatings), the additive is classified in [C08K](#) as additional information (CCA). This does not depend on the amount of the additive in the adhesive/coating composition (see Special rule of classification in [C09J 7/00](#) and [C09D 7/00](#)).

Places to classify non-radical crosslinking and chain-extending agents:

In [C08K](#) are classified radical cross-linking agents. When the added compound reacts as crosslinking agent or chain extension agent via a non-radical mechanism (condensation or addition mechanism), it should not be classified in [C08K](#). They are principally classified by the type of crosslinking agent or by the type of the chemical modification of the polymer to be crosslinked. These are the places where such compounds in combination with polymers can be classified:

- For [C08B](#) polymers (polysaccharides): It should be referred to [C08B](#) for each specific polymer.
- For Diene rubbers ([C08C](#)): see [C08C 19/30](#).
- For Vinyl polymers ([C08F](#)): In [C08F 8/00](#), it should be referred to the chemistry of the modified polymer which is crosslinked.
- For Polyurethanes ([C08G 18/00](#)): In [C08G 18/00](#), the use of crosslinking agents is classified according to the corresponding chemistry (e.g. polyisocyanates) Carbodiimides as crosslinker can also be found in [C08G 18/797](#).
- For Epoxy resins ([C08G 59/00](#)): Crosslinking agents are classified in [C08G 59/40](#).
- For Polyesters and polycarbonates ([C08G 63/00](#) - [C08G 63/64](#)): Symbols in [C08G 63/91](#) and [C08G 64/42](#) can be given.
- For Polyethers ([C08G 65/00](#)): Symbols in [C08G 65/32](#) – [C08G 65/338](#) can be given.
- For Other polymers in [C08G](#): Symbols can be given according to the modification of the polymer induced by the crosslinking reaction or the modification of the polymer which allows the linking reaction.

Allocation of indexing codes:

- Orthogonal Indexing Codes [C08K 2201/00](#) - [C08K 2201/019](#) are used to specify the role and the physical properties of the additives.
- Orthogonal Indexing codes may be allocated in conjunction with combination-set symbols. In these situations, allocations of specific indexing codes are indicated with the related C-Sets in C-Sets classification.
- Breakdown indexing codes in [C08K 3/00](#) - [C08K 13/00](#) are used as single symbols for classification, but they are not used in forming of C-Set symbols (See C-Sets classification below).

### **Combination Sets (C-Sets):**

In this subclass, C-Sets classification is applied to the following groups, listed in the table below, if the document discloses a pertinent combination of technical features that cannot be covered by the allocation of a single symbol. The fourth column of the table indicates the place where the detailed

information about the C-Sets construction and the associated syntax rules can be found, in the section "Special rules of classification".

C-SETS ID	BASE SYMBOLS	SUBSEQUENT SYMBOLS	C-SETS FORMULA; LOCATION OF C-SETS RULES
#C8Ka	<a href="#">C08K 3/00</a> - <a href="#">C08K 13/08</a> (excluding breakdown indexing codes)	<a href="#">C08L 1/00</a> - <a href="#">C08L 101/16</a> (excluding breakdown indexing codes)	( <a href="#">C08K</a> , <a href="#">C08L</a> ); an additive with a single polymer; see <a href="#">C08K</a>
#C8Lb	<a href="#">C08L 1/00</a> - <a href="#">C08L 101/16</a> (excluding breakdown indexing codes)	<a href="#">C08L 1/00</a> - <a href="#">C08L 101/16</a> (excluding breakdown indexing codes), <a href="#">C08K 3/00</a> - <a href="#">C08K 13/08</a> (excluding breakdown indexing codes)	( <a href="#">C08L</a> , <a href="#">C08L</a> , ..., <a href="#">C08K</a> , ...); a composition comprising two or more polymers with additive(s); see <a href="#">C08L</a>
#C8Lb(Si)	<a href="#">C08L 1/00</a> - <a href="#">C08L 101/16</a> (excluding <a href="#">C08L 83/02</a> - <a href="#">C08L 83/16</a> )	<a href="#">C08L 83/02</a> - <a href="#">C08L 83/16</a> , <a href="#">C08L 83/00</a> , <a href="#">C08K 3/00</a> - <a href="#">C08K 13/08</a> (excluding breakdown indexing codes)	( <a href="#">C08L</a> , <a href="#">C08L 83/02</a> - <a href="#">C08L 83/16</a> , <a href="#">C08L 83/00</a> , ..., <a href="#">C08K</a> , ...); a composition comprising one non Si-based polymer in majority and two or more Si-based polymers with additive(s); see <a href="#">C08L</a>
#C8Lb(Si)2	<a href="#">C08L 83/02</a> - <a href="#">C08L 83/16</a>	<a href="#">C08L 83/00</a> , and optionally <a href="#">C08L 1/00</a> - <a href="#">C08L 101/16</a> , (excluding <a href="#">C08L 83/02</a> - <a href="#">C08L 83/16</a> and excluding breakdown indexing codes), <a href="#">C08K 3/00</a> - <a href="#">C08K 13/08</a> (excluding breakdown indexing codes)	( <a href="#">C08L 83/02</a> - <a href="#">C08L 83/16</a> , <a href="#">C08L 83/00</a> , ..., <a href="#">C08L</a> , ..., <a href="#">C08K</a> , ...); a composition comprising one Si-based polymer in majority with one or more Si-based polymers and optionally non-Si polymer(s) and additive(s); see <a href="#">C08L 83/00</a>
#C9De	<a href="#">C09D 101/00</a> - <a href="#">C09D 201/10</a>	<a href="#">C08K 3/00</a> - <a href="#">C08K 13/08</a> (excluding breakdown indexing codes)	( <a href="#">C09D</a> , <a href="#">C08K</a> , ...); a coating composition of one polymer with additive(s); see <a href="#">C09D 101/00</a>
#C9Df	<a href="#">C09D 101/00</a> - <a href="#">C09D 201/10</a>	<a href="#">C08L 1/00</a> - <a href="#">C08L 101/16</a> , <a href="#">C08K 3/00</a> - <a href="#">C08K 13/08</a> (excluding breakdown indexing codes)	( <a href="#">C09D</a> , <a href="#">C08L</a> , ..., <a href="#">C08K</a> , ...); a coating composition of two or more polymers with additive(s); see <a href="#">C09D 101/00</a>

#C9Df(Si)	<a href="#">C09D 101/00</a> - <a href="#">C09D 201/10</a> (excluding <a href="#">C09D 183/02</a> - <a href="#">C09D 183/16</a> )	<a href="#">C08L 83/02</a> - <a href="#">C08L 83/16</a> , <a href="#">C08L 83/00</a> , <a href="#">C08K 3/00</a> - <a href="#">C08K 13/08</a> (excluding breakdown indexing codes)	( <a href="#">C09D</a> , <a href="#">C08L 83/02</a> - <a href="#">C08L 83/16</a> , <a href="#">C08L 83/00</a> , ..., <a href="#">C08K</a> , ...); a coating composition comprising one non Si-based polymer in majority and two or more Si-based polymers and additive(s); see <a href="#">C09D 101/00</a>
#C9Df(Si)2	<a href="#">C09D 183/02</a> - <a href="#">C09D 183/16</a>	<a href="#">C08L 83/00</a> and optionally <a href="#">C08L 1/00</a> - <a href="#">C08L 101/16</a> (excluding <a href="#">C08L 83/02</a> - <a href="#">C08L 83/16</a> and excluding breakdown indexing codes), <a href="#">C08K 3/00</a> - <a href="#">C08K 13/08</a> (excluding breakdown indexing codes)	( <a href="#">C09D 183/02</a> - <a href="#">C09D 183/16</a> , <a href="#">C08L 83/00</a> ,..., <a href="#">C08L</a> ,..., <a href="#">C08K</a> ,...); a coating composition comprising one Si-based polymer in majority with one or more Si- based polymers and optionally non Si- based polymer(s) and additive(s); see <a href="#">C09D 183/00</a>
#C9Je	<a href="#">C09J 101/00</a> - <a href="#">C09J 201/10</a>	<a href="#">C08K 3/00</a> - <a href="#">C08K 13/08</a> (excluding breakdown indexing codes)	( <a href="#">C09J</a> , <a href="#">C08K</a> ,...); an adhesive composition of one polymer with additive(s); see <a href="#">C09J 101/00</a>
#C9Jf	<a href="#">C09J 101/00</a> - <a href="#">C09J 201/10</a>	<a href="#">C08L 1/00</a> - <a href="#">C08L 101/16</a> (excluding breakdown indexing codes), <a href="#">C08K 3/00</a> - <a href="#">C08K 13/08</a> (excluding breakdown indexing codes)	( <a href="#">C09J</a> , <a href="#">C08L</a> ,..., <a href="#">C08K</a> , ...); an adhesive composition of two or more polymers with additive(s); see <a href="#">C09J 101/00</a>
#C9Jf(Si)	<a href="#">C09J 101/00</a> - <a href="#">C09J 201/10</a> (excluding <a href="#">C09J 183/02</a> - <a href="#">C09J 183/16</a> )	<a href="#">C08L 83/02</a> - <a href="#">C08L 83/16</a> , <a href="#">C08L 83/00</a> , <a href="#">C08K 3/00</a> - <a href="#">C08K 13/08</a> (excluding breakdown codes)	( <a href="#">C09J</a> , <a href="#">C08L 83/02</a> - <a href="#">C08L 83/16</a> , <a href="#">C08L 83/00</a> , ..., <a href="#">C08K</a> , ...); an adhesive composition comprising one non Si-based polymer in majority and two or more Si-based polymers and additive(s); see <a href="#">C09J 101/00</a>

#C9Jf(Si)2	<a href="#">C09J 183/02</a> - <a href="#">C09J 183/16</a>	<a href="#">C08L 83/00</a> , and optionally <a href="#">C08L 1/00</a> - <a href="#">C08L 101/16</a> (excluding <a href="#">C08L 83/02</a> - <a href="#">C08L 83/16</a> and excluding breakdown indexing codes), <a href="#">C08K 3/00</a> - <a href="#">C08K 13/08</a> (excluding breakdown codes)	( <a href="#">C09J 183/02</a> - <a href="#">C09J 183/16</a> , <a href="#">C08L 83/00</a> ,..., <a href="#">C08L</a> ,..., <a href="#">C08K</a> , ...); an adhesive composition comprising one Si-based polymer in majority with one or more Si- based polymers and optionally non Si – based polymer(s) and additive(s); see <a href="#">C09J 183/00</a>
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The specific C-Sets rule is located at only one place of the base symbol in the section "Special rules of classification" in the definition. If the C-Sets rule is applicable to all groups of a subclass, it is located at the subclass level only. If the same C-Sets rule is applicable to multiple groups or subgroups within the same subclass, the C-Sets rule is placed at the highest group or subgroup of the multiple groups.

#### **C-Sets statement : #C8Ka**

- In groups [C08K 3/00](#) - [C08K 13/08](#), a composition comprising additive(s) and one polymer is classified in the form of C-Sets.
- In these C-Sets, the base symbol, representing the additive is taken from the groups [C08K 3/00](#) - [C08K 13/08](#), whereas the subsequent symbol representing the polymer combined with the additive is taken from the groups [C08L 1/00](#) - [C08L 101/16](#).

#### **C-Sets syntax rules:**

- Each of these C-Sets shall contain exactly two symbols
- Duplicate symbols are not allowed in these C-Sets.
- Breakdown and orthogonal index codes are not allowed in the C-Sets either as base symbols or as subsequent symbols.
- The order of symbols in these C-Sets is relevant as it reflects the presence of one additive and one polymer
- If a composition comprising one polymer, e.g. polymer X, and two or more additives, e.g. Additive A and B, separate C-Sets are given to each additive and the polymer X, e.g. (additive A, polymer X) and (additive B, polymer X).
- For a composition comprising one polymer and four or more essential additives, e.g. additives A, B, C, D and polymer X, a C-Set is given using [C08K13/yy](#) and separate C-Sets are given to each additive and the polymer X. For example, ([C08K13/yy](#), polymer X), (additive A, polymer X), (additive B, polymer X), (additive C, polymer X), and (additive D, polymer X).
- If an additive within [C08K](#) is disclosed in admixture with one polymer selected from a list of several polymers, but each of those polymers does not form a blend, all exemplified combinations must be classified as separate C-Sets, e.g. polystyrene or PVC containing a carboxylic amide is separately classified in ([C08K 5/20](#), [C08L 25/06](#)) and ([C08K 5/20](#), [C08L 27/06](#)).
- In the absence of examples, at least one C-Set is given on the basis of sufficient description of the polymer and the additive in the document.
- If an additive is used in admixture with two or more polymers in a blend, the composition is classified in a form of C-Sets following C-Sets rule in [C08L](#), wherein the additive is assigned as subsequent symbol (see C-Sets #C8Lb).

#### **C-Sets examples:**

- #C8Ka: An admixture comprising carbon black ([C08K 3/04](#)) combined with butadiene-styrene rubber ([C08L 9/06](#)) is classified as ([C08K 3/04](#), [C08L 9/06](#)).

- #C8Ka: An admixture comprising glass fibers ([C08K 7/14](#)) and resorcinol phosphate ([C08K 5/523](#)) combined with nylon 6, 6 ([C08L 77/06](#)) is classified as ([C08K 7/14](#), [C08L 77/06](#)) and ([C08K 5/523](#), [C08L 77/06](#)).
- #C8Ka: An admixture of styrene-butadiene rubber with carbon black ([C08K 3/04](#)), sulfur ([C08K 3/06](#)), silica ([C08K 3/36](#)) and silane coupling agent with sulfide bridge ([C08K 5/548](#)) is classified as ([C08K 13/02](#), [C08L 9/06](#)), ([C08K 3/06](#), [C08L 9/06](#)), ([C08K 3/04](#), [C08L 9/06](#)), ([C08K 5/548](#), [C08L 9/06](#)), and ([C08K 3/36](#), [C08L 9/06](#)).

## Glossary of terms

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

Acyclic	The absence of a ring structure.
Carbocyclic	The presence of a ring or ring system where all ring members are carbons.
Condensed	The presence of two rings that share at least one ring member.
Heterocyclic	The presence of a ring or ring system wherein at least one ring member is not a carbon atom.
Inorganic compound	Compound devoid of a carbon atom and containing a non-metallic element, or a compound containing a carbon atom, and satisfying one of the following criteria: the compound cannot have a carbon atom having direct bonding to another carbon atom, or the compound cannot have direct bonding between a carbon atom and a halogen or hydrogen atom, or the compound cannot have direct bonding between a carbon and a nitrogen atom by a single or double bond. The following are exceptions to the above and are to be considered as inorganic compounds: compounds consisting of only carbon atoms (e.g. fullerenes), cyanogen, cyanogen halides, cyanamide, metal carbides, phosgene, thiophosgene, hydrocyanic acid, isocyanic acid, isothiocyanic acid, fulminic acid, unsubstituted carbamic acid, and salts of the previously mentioned acids and which contain the same limitations as to a carbon atom.
Macromolecular compound	Natural or synthetic (co)polymer or resin or rubber
Metal	Any element other than hydrogen, carbon, halogen (fluorine, chlorine, bromine, iodine and astatine), oxygen, nitrogen, sulfur, selenium, tellurium, phosphorus, silicon, boron, noble gases (helium, neon, argon, krypton, xenon and radon).
Organic compound	Compound satisfying one of the following criteria: at least two carbon atoms bonded to each other, or one carbon atom bonded to at least one hydrogen atom or halogen atom, or one carbon atom bonded to at least one nitrogen atom by a single or double bond. Exceptions to the above criteria are: compounds consisting of only carbon atoms (e.g. fullerenes), cyanogen, cyanogen halides, cyanamide, metal carbides, phosgene, thiophosgene, hydrocyanic acid, isocyanic acid, isothiocyanic acid, fulminic acid, unsubstituted carbamic acid, and salts of the previously mentioned acids; these exceptions are considered to be inorganic compounds for classification purposes.

Quinone	Compound derived from compounds containing a six-membered aromatic ring or a system comprising six-membered aromatic rings (which system may be condensed or not condensed) by replacing two or four >CH groups of the six-membered aromatic rings by >C=O groups, and by removing one or two carbon-to-carbon double bonds, respectively, and rearranging the remaining carbon-to-carbon double bonds to give a ring or ring system with alternating double bonds, including the carbon-to-oxygen bonds; this means that acenaphthenequinone or camphorquinone are not considered as quinones.
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### Synonyms and Keywords

*In patent documents, the following abbreviations are often used:*

Phr	Parts per hundred parts of rubber
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## C08K 3/00

### Use of inorganic substances as compounding ingredients

#### Definition statement

*This place covers:*

Polymeric compositions comprising inert inorganic substances as compounding ingredients.

#### Relationships with other classification places

The preparation of inorganic ingredients per se are classified in different areas such as [C01B](#), [C01F](#).

#### References

##### Informative references

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

Polymeric compositions comprising inorganic substances and being suitable for laser marking applications	<a href="#">B41M 5/00</a>
Polymeric compositions comprising inorganic substances and being suitable for film applications	<a href="#">C08J 5/18</a>
Polymeric compositions comprising inorganic substances and being suitable for miscellaneous applications like liquid crystals, fire proofing materials or luminescent materials	<a href="#">C09K</a>
Polymeric compositions comprising inorganic substances and being suitable for fire resistant wire or cable applications	<a href="#">H01B 7/00</a>
Polymeric compositions comprising inorganic substances and being suitable for electromagnetic shielding (EMI) applications	<a href="#">H05K 9/00</a>

#### Special rules of classification

This group follows the special rules of Classification as outlined at subclass [C08K](#).

The inorganic substances are classified into the appropriate groups according to their chemical nature, e.g. diamonds which consist of the chemical element carbon are to be classified in [C08K 3/04](#) (carbon).

**Subgroups:**[C08K 3/011](#)

For an inorganic substance which is to be classified but is not specifically chemically defined and only described as 'Crosslinking or vulcanising agent, including accelerators'.

[C08K 3/012](#)

For an inorganic substance which is to be classified but not specifically chemically defined and only described as 'Additives activating the degradation of the macromolecular compound'.

[C08K 3/013](#)

For an inorganic substance which is to be classified but not specifically chemically defined and only described as 'Filler, pigment or reinforcing additive'.

[C08K 3/014](#)

For an inorganic substance which is to be classified but not specifically chemically defined and only described as 'Stabiliser against oxidation, heat, light or ozone'.

[C08K 3/015](#)

For an inorganic substance which is to be classified but not specifically chemically defined and only described as 'Biocide'.

[C08K 3/016](#)

For an inorganic substance which is to be classified but not specifically chemically defined and only described as 'Flame-proofing or flame-retarding additive'.

[C08K 3/017](#)

For an inorganic substance which is to be classified but is not specifically chemically defined and only described as 'Antistatic'.

[C08K 3/08](#) For metals and alloys of metals. For each of the metals included in the alloy, a 2000-series breakdown code of [C08K 3/08](#) (e.g. one of [C08K 2003/0806-C08K 2003/0893](#)) can be given.

[C08K 3/22](#) For metal oxides. Also for mixed metal oxides.

[C08K 3/24](#) For acids and salts thereof. Also for compounds based on metallates like  $\text{Me}_x\text{O}_y^{n-}$  (metallates, oxometallates) (with the exception of antimonates).

[C08K 3/30](#) For Sulfur-, selenium or tellurium-containing compounds. Also for compounds like thiomolybdate (like their equivalents with selenium and tellurium).

[C08K 3/40](#)

For glass used as inorganic substance.

If glass is used as inorganic substance and its ingredients are specifically mentioned according to their chemical nature, then rule (1) above applies.

**C-Sets classification:**

In this group, C-Sets (e.g. #C8Ka) are used. The detailed information about the C-Sets construction and the associated syntax rules are found in the "Special rules of classification" in [C08K](#).

**C-Sets searches:**

C-Sets search queries may be made according to C-Sets classification rules described in [C08K](#) and related subclasses.

**C08K 5/00****Use of organic ingredients****Definition statement**

*This place covers:*

Use of organic ingredients: polymeric compositions comprising organic substances as compounding ingredients.

**Relationships with other classification places**

The preparation of the organic ingredients themselves, with or without their use as additives, is classified in [C07](#).

The general processes of compounding and after treatment is classified in [C08J](#).

**References****Informative references**

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

Polymeric compositions comprising organic substances and being suitable for laser marking applications	<a href="#">B41M 5/00</a>
Polymeric compositions comprising organic substances and being suitable for film applications	<a href="#">C08J 5/18</a>
Polymeric compositions comprising organic substances and being suitable for miscellaneous applications like liquid crystals, fire proofing materials, luminescent or tenebrescent materials	<a href="#">C09K</a>
Polymeric compositions comprising organic substances and being suitable for conductors or conductive bodies	<a href="#">H01B 1/12</a>
Polymeric compositions comprising organic substances and being suitable for fire resistant cable or wire applications	<a href="#">H01B 7/00</a>

**Special rules of classification**

This group follows the special rules of Classification as outlined at subclass [C08K](#).

The organic substances are classified into the appropriate groups according to their chemical nature, e.g. compounds containing ester and phenol groups are classified in [C08K 5/134](#).

**Subgroups:**

[C08K 5/37](#)

In this group, 'Thiols' is meant to also comprise derivatives obtained from substitution of the thiolic H atom.

**C-Sets classification:**

In this group, C-Sets (e.g. #C8Ka) are used. The detailed information about the C-Sets construction and the associated syntax rules are found in the "Special rules of classification" in [C08K](#).

**C-Sets searches:**

C-Sets search queries may be made according to C-Sets classification rules described in [C08K](#) and related subclasses.

[C08K 5/0016](#)

For an organic substance which is to be classified but not specifically chemically defined and only described as 'plasticiser'.

[C08K 5/0025](#)

For an organic substance which is to be classified but not specifically chemically defined and only described as 'crosslinking or vulcanising agent' or 'accelerator'.

[C08K 5/005](#)

For an organic substance which is to be classified but not specifically chemically defined and only described as 'stabiliser against oxidation, heat, light, ozone'.

[C08K 5/0083](#)

For an organic substance which is to be classified but not specifically chemically defined and only described as 'nucleating', 'clarifying', or 'crystallisation improving' agent.

[C08K 5/37](#)

In this group, 'Thiols' is meant to also comprise derivatives obtained from substitution of the thiolic H atom.

**C08K 7/00****Use of ingredients characterised by shape****Definition statement**

*This place covers:*

All additives of [C08K](#) which are characterized by their shape, e.g. fibres, spherical particles, expanded particles, porous particles and hollow particles

Polymer fibres like aramide fibres are to be classified in [C08K 7/02](#).

Reinforced polymer or resin compositions and composites are classified in [C08K 7/00](#) when the amount of the fibres is generally lower than 50 % (volume or weight). Composites based on a higher content of fibres or based on fabric (woven or non-woven) are classified in [C08J 5/04](#) or in [C08J 5/24](#)

[C08J 5/04](#) and [C08J 5/24](#) refer to the reinforcement of polymer matrix (making composites) by using high amounts of fibres (generally more than 50 % (volume or weight)) in the sense that the fibres constitute the structure of the final product.

**Relationships with other classification places**

This group does not cover the preparation of the ingredients characterised by shape per se.

**References****Informative references**

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

Carbon nanotubes or preparation of such carbon nanotubes	<a href="#">C01B 32/15</a>
Carbon filaments or preparation of such filament	<a href="#">D01F 9/12</a>

## Special rules of classification

This group follows the special rules of Classification as outlined at subclass [C08K](#).

Subgroups:

[C08K 7/24](#)

For example, carbon nanotubes as additive material.

### **C-Sets classification:**

In this group, C-Sets (e.g. #C8Ka) are used. The detailed information about the C-Sets construction and the associated syntax rules are found in the "Special rules of classification" in [C08K](#).

### **C-Sets searches:**

C-Sets search queries may be made according to C-Sets classification rules described in [C08K](#) and related subclasses.

## C08K 9/00

### Use of pretreated ingredients

#### Definition statement

*This place covers:*

All additives of [C08K](#) which are characterized by being pretreated before their use as additive, the pretreatment encompassing physical as well as chemical pretreatment (resulting in physical but also in chemical attachment of the pretreating agent to the surface of the additive).

The chemical nature of pretreating agent is according to the classification scheme and as explained below.

#### Relationships with other classification places

This group does not cover the preparation of the pretreated ingredients per se.

#### References

##### *Informative references*

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

Treatments of inorganic materials with inorganic compounds to enhance their pigmenting or filling properties	<a href="#">C09C 3/06</a>
Treatments of inorganic materials with low-molecular-weight non polymer organic compounds to enhance their pigmenting or filling properties	<a href="#">C09C 3/08</a>
Treatments of inorganic materials with macromolecular organic compounds to enhance their pigmenting or filling properties	<a href="#">C09C 3/10</a>
Treatments of inorganic materials with organosilicon compounds to enhance their pigmenting or filling properties	<a href="#">C09C 3/12</a>

## Special rules of classification

This group follows the special rules of Classification as outlined at subclass [C08K](#).

**Subgroups:**

[C08K 9/04](#)

This subgroup defines physical/chemical pretreatment by non-macromolecular organic substances only

#### [C08K 9/06](#)

This subgroup defines physical/chemical pretreatment by non-macromolecular organic silicon containing substances only

#### [C08K 9/08](#)

This subgroup defines physical/chemical pretreatment by macromolecular organic substances only

#### [C08K 9/10](#)

This subgroup is used only, if the claims and/or examples of the respective document explicitly show/define/claim a literally 'encapsulation' of the respective pretreating agent on the additive

#### [C08K 9/12](#)

This subgroup is used only, if the claims and/or examples of the respective document explicitly show/define/claim a literally 'absorption' of the respective pretreating agent on the additive

For intercalated, exfoliated, or organic modified clays, symbols [C08K 9/04](#), [C08K 9/06](#) or [C08K 9/08](#) should be given.

#### **C-Sets classification:**

In this group, C-Sets (e.g. #C8Ka) are used. The detailed information about the C-Sets construction and the associated syntax rules are found in the "Special rules of classification" in [C08K](#).

#### **C-Sets searches:**

C-Sets search queries may be made according to C-Sets classification rules described in [C08K](#) and related subclasses.

## **C08K 11/00**

### **Use of ingredients of unknown constitution, e.g. undefined reaction products**

#### **Definition statement**

*This place covers:*

Any additive in the meaning of [C08K](#) which does not fall within any of the subgroups [C08K 3/00](#), [C08K 5/00](#), [C08K 7/00](#), [C08K 9/00](#) or [C08K 13/00](#).

#### **Relationships with other classification places**

This group does not cover the preparation of the ingredients of unknown constitution per se.

#### **Special rules of classification**

This group follows the special rules of Classification as outlined at subclass [C08K](#).

#### **C-Sets classification:**

In this group, C-Sets (e.g. #C8Ka) are used. The detailed information about the C-Sets construction and the associated syntax rules are found in the "Special rules of classification" in [C08K](#).

#### **C-Sets searches:**

C-Sets search queries may be made according to C-Sets classification rules described in [C08K](#) and related subclasses.

## **C08K 13/00**

**Use of mixtures of ingredients not covered by one single of the preceding main groups, each of these compounds being essential**

### **Definition statement**

*This place covers:*

This subgroup should be used for classification only for mixtures with more than three essential ingredients.

### **Special rules of classification**

This group follows the special rules of Classification as outlined at subclass [C08K](#).

### **C-Sets classification:**

In this group, C-Sets (e.g. #C8Ka) are used. The detailed information about the C-Sets construction and the associated syntax rules are found in the "Special rules of classification" in [C08K](#).

### **C-Sets searches:**

C-Sets search queries may be made according to C-Sets classification rules described in [C08K](#) and related subclasses.