

CPC COOPERATIVE PATENT CLASSIFICATION

C CHEMISTRY; METALLURGY

(NOTES omitted)

CHEMISTRY

C08 ORGANIC MACROMOLECULAR COMPOUNDS; THEIR PREPARATION OR CHEMICAL WORKING-UP; COMPOSITIONS BASED THEREON

C08K Use of inorganic or non-macromolecular organic substances as compounding ingredients (paints, inks, varnishes, dyes, polishes, adhesives [C09](#))

NOTES

1. In this subclass, in the absence of an indication to the contrary, an ingredient is classified in the last appropriate place.
2. In this subclass:
 - a mixture of ingredients is classified in the most indented group covering all the essential ingredients of the mixture, e.g.:
 - a mixture of a monohydric and a polyhydric alcohol [C08K 5/05](#)
 - a mixture of two polyhydric alcohols [C08K 5/053](#)
 - a mixture of an alcohol and an ether [C08K 5/04](#)
 - a mixture of an ether and an amine [C08K 5/00](#)
 - a mixture of an amine and a metal [C08K 13/02](#)
 - { This note is applied only for mixtures with more than three essential ingredients. Mixtures with two or three ingredients are classified in the appropriate groups of [C08K](#), e.g. a mixture of Al₂O₃, an ether and an amine is classified in [C08K 3/22](#), [C08K 5/06](#) and [C08K 5/17](#)}
 - ammonium salts are classified in the same way as metal salts
3. In this subclass, any ingredient of a mixture which is not identified by the classification according to Note (2) above, and the use of which is determined to be novel and non-obvious, must also be classified in this subclass according to Note (1). The ingredient can be either a single compound or a composition in itself. ".{This IPC Note does not apply in CPC}
4. Any ingredient of a mixture which is not identified by the classification according to Notes (2) or (3) above, and which is considered to represent information of interest for search, may also be classified in this subclass according to Note (1). This can, for example, be the case when it is considered of interest to enable searching of mixtures using a combination of classification symbols. Such non-obligatory classification should be given as "additional information".{This IPC Note does not apply in CPC}
5. {In this subclass, combination sets [C-Sets] are used. The detailed information about the C-Sets construction and the associated syntax rules is present in the definitions of [C08K](#)}
6. {In this subclass, organic acid salts, alcoholates, phenolates or mercaptides are classified in the groups or subgroups of the parent compounds}

WARNING

The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:

[C08K 5/5445](#)

covered by

[C08K 5/544](#)

3/00 Use of inorganic substances as compounding ingredients

NOTE

In this group, C-Sets are used. The detailed information about the C-Sets construction and the associated syntax rules is present in the Definitions of [C08K](#).

- | | | | |
|-------|--|----------|--|
| 3/01 | • characterized by their specific function | 3/013 | • • Fillers, pigments or reinforcing additives |
| 3/011 | • • Crosslinking or vulcanising agents, e.g. accelerators | 3/014 | • • Stabilisers against oxidation, heat, light or ozone |
| 3/012 | • • Additives activating the degradation of the macromolecular compounds | 3/015 | • • Biocides (macromolecular substances as carriers for biocide material A01N 25/10) |
| | | 3/016 | • • Flame-proofing or flame-retarding additives |
| | | 3/017 | • • Antistatic agents |
| | | 3/02 | • Elements |
| | | 2003/023 | • • {Silicon} |
| | | 2003/026 | • • {Phosphorus} |

3/04 . . Carbon

WARNING

Group [C08K 3/04](#) is impacted by reclassification into groups [C08K 3/041](#), [C08K 3/042](#), [C08K 3/043](#), [C08K 3/044](#), [C08K 3/045](#) and [C08K 3/046](#).

All groups listed in this warning should be considered in order to perform a complete search.

3/041 . . . {Carbon nanotubes}

WARNING

Group [C08K 3/041](#) is incomplete pending reclassification of documents from groups [C08K 3/04](#) and [C08K 7/24](#).

Groups [C08K 3/041](#), [C08K 3/04](#) and [C08K 7/24](#) should be considered in order to perform a complete search.

3/042 . . . {Graphene or derivatives, e.g. graphene oxides}

WARNING

Group [C08K 3/042](#) is incomplete pending reclassification of documents from groups [C08K 3/04](#) and [C08K 3/20](#).

Groups [C08K 3/042](#), [C08K 3/04](#) and [C08K 3/20](#) should be considered in order to perform a complete search.

3/043 . . . {Carbon nanocoils}

WARNING

Group [C08K 3/043](#) is incomplete pending reclassification of documents from groups [C08K 3/04](#) and [C08K 7/24](#).

Groups [C08K 3/043](#), [C08K 3/04](#) and [C08K 7/24](#) should be considered in order to perform a complete search.

3/044 . . . {Carbon nanohorns or nanobells}

WARNING

Group [C08K 3/044](#) is incomplete pending reclassification of documents from groups [C08K 3/04](#) and [C08K 7/24](#).

Groups [C08K 3/044](#), [C08K 3/04](#) and [C08K 7/24](#) should be considered in order to perform a complete search.

3/045 . . . {Fullerenes}

WARNING

Group [C08K 3/045](#) is incomplete pending reclassification of documents from groups [C08K 3/04](#) and [C08K 7/24](#).

Groups [C08K 3/045](#), [C08K 3/04](#) and [C08K 7/24](#) should be considered in order to perform a complete search.

3/046 . . . {Carbon nanorods, nanowires, nanoplatelets or nanofibres}

WARNING

Group [C08K 3/046](#) is incomplete pending reclassification of documents from groups [C08K 3/04](#) and [C08K 7/24](#).

Groups [C08K 3/046](#), [C08K 3/04](#) and [C08K 7/24](#) should be considered in order to perform a complete search.

3/06 . . Sulfur

3/08 . . Metals

2003/0806 . . . {Silver}

2003/0812 . . . {Aluminium}

2003/0818 . . . {Alkali metal}

2003/0825 . . . {Potassium}

2003/0831 . . . {Gold}

2003/0837 . . . {Bismuth}

2003/0843 . . . {Cobalt}

2003/085 . . . {Copper}

2003/0856 . . . {Iron}

2003/0862 . . . {Nickel}

2003/0868 . . . {Osmium}

2003/0875 . . . {Antimony}

2003/0881 . . . {Titanium}

2003/0887 . . . {Tungsten}

2003/0893 . . . {Zinc}

3/10 . Metal compounds

3/105 . . Compounds containing metals of Groups 1 to 3 or Groups 11 to 13 of the Periodic system

3/11 . . Compounds containing metals of Groups 4 to 10 or Groups 14 to 16 of the Periodic system

3/12 . . Hydrides

3/14 . . Carbides

3/16 . Halogen-containing compounds

2003/162 . . {Calcium, strontium or barium halides, e.g. calcium, strontium or barium chloride}

2003/164 . . {Aluminum halide, e.g. aluminium chloride}

2003/166 . . {Magnesium halide, e.g. magnesium chloride}

2003/168 . . {Zinc halides}

3/18 . Oxygen-containing compounds, e.g. metal carbonyls

3/20 . . Oxides; Hydroxides {(graphene oxides [C08K 3/042](#))}**WARNING**

Group [C08K 3/20](#) is impacted by reclassification into group [C08K 3/042](#).

Groups [C08K 3/20](#), and [C08K 3/042](#) should be considered in order to perform a complete search.

3/22 . . . of metals

2003/2203 . . . {of lithium}

2003/2206 . . . {of calcium, strontium or barium}

2003/221 . . . {of rare earth metal}

2003/2213 . . . {of cerium}

2003/2217 . . . {of magnesium}

2003/222 . . . {Magnesia, i.e. magnesium oxide}

2003/2224 . . . {Magnesium hydroxide}

2003/2227 . . . {of aluminium}

2003/2231 . . . {of tin}

2003/2234 . . . {of lead}

2003/2237	. . . . {of titanium}
2003/2241	. . . . {Titanium dioxide}
2003/2244	. . . . {of zirconium}
2003/2248	. . . . {of copper}
2003/2251	. . . . {of chromium}
2003/2255	. . . . {of molybdenum}
2003/2258	. . . . {of tungsten}
2003/2262	. . . . {of manganese}
2003/2265	. . . . {of iron}
2003/2268	. . . . {Ferrous oxide (FeO)}
2003/2272	. . . . {Ferric oxide (Fe ₂ O ₃)}
2003/2275	. . . . {Ferroso-ferric oxide (Fe ₃ O ₄)}
3/2279	. . . . {of antimony}
2003/2282	. . . . {Antimonates}
2003/2286	. . . . {of silver}
2003/2289	. . . . {of cobalt}
2003/2293	. . . . {of nickel}
2003/2296	. . . . {of zinc}
3/24	. . Acids; Salts thereof {(C08K 3/16 takes precedence)}
3/26	. . . Carbonates; Bicarbonates
2003/262	. . . . {Alkali metal carbonates}
2003/265	. . . . {Calcium, strontium or barium carbonate}
2003/267	. . . . {Magnesium carbonate}
3/28	. . Nitrogen-containing compounds
2003/282	. . {Binary compounds of nitrogen with aluminium}
2003/285	. . {Ammonium nitrates}
2003/287	. . {Calcium, strontium or barium nitrates}
3/30	. . Sulfur-, selenium- or tellurium-containing compounds
2003/3009	. . {Sulfides}
2003/3018	. . . {of magnesium, calcium, strontium or barium}
2003/3027	. . . {of cadmium}
2003/3036	. . . {of zinc}
2003/3045	. . {Sulfates}
2003/3054	. . . {Ammonium sulfates}
2003/3063	. . . {Magnesium sulfate}
2003/3072	. . . {Iron sulfates}
2003/3081	. . . {Aluminum sulfate}
2003/309	. . {Sulfur containing acids}
3/32	. . Phosphorus-containing compounds
2003/321	. . {Phosphates}
2003/322	. . . {Ammonium phosphate}
2003/323	. . . . {Ammonium polyphosphate}
2003/324	. . . {Alkali metal phosphate}
2003/325	. . . {Calcium, strontium or barium phosphate}
2003/326	. . . {Magnesium phosphate}
2003/327	. . . {Aluminium phosphate}
2003/328	. . . {Phosphates of heavy metals}
2003/329	. . {Phosphorus containing acids}
3/34	. . Silicon-containing compounds
2003/343	. . {Peroxyhydrates, peroxyacids or salts thereof}
3/346	. . {Clay}
3/36	. . Silica
3/38	. . Boron-containing compounds
2003/382	. . {and nitrogen}
2003/385	. . . {Binary compounds of nitrogen with boron}
2003/387	. . {Borates}
3/40	. . Glass

5/00 Use of organic ingredients

NOTE

In this group, C-Sets are used. The detailed information about the C-Sets construction and the associated syntax rules is present in the Definitions of [C08K](#).

5/0008	. . {Organic ingredients according to more than one of the "one dot" groups of C08K 5/01 - C08K 5/59 }
5/0016	. . {Plasticisers}
5/0025	. . {Crosslinking or vulcanising agents; including accelerators}
5/0033	. . {Additives activating the degradation of the macromolecular compound}
5/0041	. . {Optical brightening agents, organic pigments}
5/005	. . {Stabilisers against oxidation, heat, light, ozone}
5/0058	. . {Biocides; (macromolecular substances as carriers for biocide material A01N 25/10)}
5/0066	. . {Flame-proofing or flame-retarding additives}
5/0075	. . {Antistatics}
5/0083	. . {Nucleating agents promoting the crystallisation of the polymer matrix}
5/0091	. . {Complexes with metal-heteroatom-bonds}
5/01	. Hydrocarbons {(C08K 5/0091 takes precedence)}
5/02	. Halogenated hydrocarbons {(C08K 5/0091 takes precedence)}
5/03	. . aromatic {, e.g. C ₆ H ₅ -CH ₂ -Cl}
5/04	. Oxygen-containing compounds {(C08K 5/0091 takes precedence)}
5/05	. . Alcohols; Metal alcoholates
5/053	. . . Polyhydroxylic alcohols
5/057	. . . Metal alcoholates {(metal enolates C08K 5/0091)}
5/06	. . Ethers; Acetals; Ketals; Ortho-esters
5/07	. . Aldehydes; Ketones
5/08	. . . Quinones
5/09	. . Carboxylic acids; Metal salts thereof; Anhydrides thereof
5/092	. . . Polycarboxylic acids
5/095	. . . Carboxylic acids containing halogens
5/098	. . . Metal salts of carboxylic acids
5/10	. . Esters; Ether-esters
5/101	. . . of monocarboxylic acids
5/103	. . . . with polyalcohols
5/105	. . . . with phenols
5/107	. . . . with polyphenols
5/109	. . . of carbonic acid {, e.g. R-O-C(=O)-O-R}
5/11	. . . of acyclic polycarboxylic acids
5/12	. . . of cyclic polycarboxylic acids
5/13	. . Phenols; Phenolates
5/132	. . . Phenols containing keto groups {, e.g. benzophenones}
5/134	. . . Phenols containing ester groups
5/1345	. . . . {Carboxylic esters of phenolcarboxylic acids}
5/136	. . . Phenols containing halogens
5/138	. . . Phenolates
5/14	. . Peroxides
5/15	. . Heterocyclic compounds having oxygen in the ring
5/151	. . . having one oxygen atom in the ring
5/1515	. . . . Three-membered rings

- 5/1525 Four-membered rings
- 5/1535 Five-membered rings
- 5/1539 Cyclic anhydrides
- 5/1545 Six-membered rings
- 5/156 . . . having two oxygen atoms in the ring
- 5/1565 Five-membered rings
- 5/1575 Six-membered rings
- 5/159 . . . having more than two oxygen atoms in the ring
- 5/16 . Nitrogen-containing compounds [{\(C08K 5/0091 takes precedence\)}](#)
- 5/17 . . Amines; Quaternary ammonium compounds
- 5/175 . . . [{containing COOH-groups; Esters or salts thereof}](#)
- 5/18 . . . with aromatically bound amino groups
- 5/19 . . . Quaternary ammonium compounds
- 5/20 . . Carboxylic acid amides
- 5/205 . . Compounds containing $\begin{array}{c} \text{O} \\ \parallel \\ -\text{O}-\text{C}-\text{N}-\text{K} \end{array}$ groups, e.g. carbamates
- 5/21 . . Urea; Derivatives thereof, e.g. biuret
- 5/22 . . Compounds containing nitrogen bound to another nitrogen atom
- 5/23 . . . Azo-compounds
- 5/235 [{Diazo and polyazo compounds}](#)
- 5/24 . . . Derivatives of hydrazine
- 5/25 Carboxylic acid hydrazides
- 5/26 Semicarbazides
- 5/27 . . . Compounds containing a nitrogen atom bound to two other nitrogen atoms, e.g. diazoamino-compounds
- 5/28 Azides
- 5/29 . . Compounds containing [{one or more}](#) carbon-to-nitrogen double bonds
- 5/30 . . . Hydrazones; Semicarbazones
- 5/31 . . . Guanidine; Derivatives thereof
- 5/315 . . Compounds containing carbon-to-nitrogen triple bonds
- 5/3155 . . . [{Dicyandiamide}](#)
- 5/32 . . Compounds containing nitrogen bound to oxygen
- 5/33 . . . Oximes
- 5/34 . . Heterocyclic compounds having nitrogen in the ring
- 5/3412 . . . having one nitrogen atom in the ring
- 5/3415 Five-membered rings
- 5/3417 condensed with carbocyclic rings
- 5/3432 Six-membered rings
- 5/3435 Piperidines
- 5/3437 condensed with carbocyclic rings
- 5/3442 . . . having two nitrogen atoms in the ring
- 5/3445 Five-membered rings
- 5/3447 condensed with carbocyclic rings
- 5/3462 Six-membered rings
- 5/3465 condensed with carbocyclic rings
- 5/3467 . . . having more than two nitrogen atoms in the ring
- 5/3472 Five-membered rings
- 5/3475 condensed with carbocyclic rings
- 5/3477 Six-membered rings
- 5/3492 Triazines
- 5/34922 [{Melamine; Derivatives thereof}](#)
- 5/34924 [{containing cyanurate groups; Tautomers thereof}](#)
- 5/34926 [{also containing heterocyclic groups other than triazine groups}](#)
- 5/34928 [{Salts}](#)
- 5/3495 condensed with carbocyclic rings
- 5/35 . . . having also oxygen in the ring
- 5/353 Five-membered rings
- 5/357 Six-membered rings
- 5/36 . Sulfur-, selenium-, or tellurium-containing compounds [{\(C08K 5/0091 takes precedence\)}](#)
- 5/37 . . Thiols
- 5/372 . . . Sulfides [{, e.g. R-\(S\)_x-R'}](#)
- 5/3725 [{containing nitrogen}](#)
- 5/375 . . . containing six-membered aromatic rings [{\(C08K 5/3725 takes precedence\)}](#)
- 5/378 . . . containing heterocyclic rings
- 5/38 . . Thiocarbonic acids; Derivatives thereof, e.g. xanthates [{; i.e. compounds containing -X-C\(=X\)- groups, X being oxygen or sulfur, at least one X being sulfur}](#)
- 5/39 . . Thiocarbamic acids; Derivatives thereof, e.g. dithiocarbamates
- 5/40 . . . Thiurams, [{i.e. compounds containing](#) $\begin{array}{c} \text{>N}-\text{C}-\{\text{S}\}_x-\text{C}-\text{N}-\text{K} \\ \parallel \quad \parallel \\ \text{S} \quad \text{S} \end{array}$ [groups}](#)
- 5/405 . . . Thioureas; Derivatives thereof
- 5/41 . . Compounds containing sulfur bound to oxygen
- 5/42 . . . Sulfonic acids; Derivatives thereof
- 5/43 . . Compounds containing sulfur bound to nitrogen
- 5/435 . . . Sulfonamides
- 5/44 . . . Sulfenamides
- 5/45 . . Heterocyclic compounds having sulfur in the ring
- 5/46 . . . with oxygen or nitrogen in the ring
- 5/47 Thiazoles
- 5/48 . . Selenium- or tellurium-containing compounds
- 5/49 . Phosphorus-containing compounds [{\(C08K 5/0091 takes precedence\)}](#)
- 5/50 . . Phosphorus bound to carbon only
- 5/51 . . Phosphorus bound to oxygen
- 5/52 . . . Phosphorus bound to oxygen only
- 5/5205 [{Salts of P-acids with N-bases}](#)
- 5/521 Esters of phosphoric acids, e.g. of H₃PO₄
- 5/523 with hydroxyaryl compounds
- 5/524 Esters of phosphorous acids, e.g. of H₃PO₃
- 5/526 with hydroxyaryl compounds
- 5/527 Cyclic esters
- 5/529 Esters containing heterocyclic rings not representing cyclic esters of phosphoric or phosphorous acids
- 5/53 . . . bound to oxygen and to carbon only
- 5/5313 Phosphinic compounds, e.g. R₂=P(:O)OR'
- 5/5317 Phosphonic compounds, e.g. R—P(:O)(OR')₂
- 5/5333 Esters of phosphonic acids
- 5/5337 containing also halogens
- 5/5353 containing also nitrogen
- 5/5357 cyclic
- 5/5373 containing heterocyclic rings not representing cyclic esters of phosphonic acids
- 5/5377 Phosphinous compounds, e.g. R₂=P—OR'

- 5/5393 Phosphonous compounds, e.g. R—P(OR')₂
- 5/5397 Phosphine oxides
- 5/5398 . . Phosphorus bound to sulfur
- 5/5399 . . Phosphorus bound to nitrogen
- 5/54 . Silicon-containing compounds {(C08K 5/0091 takes precedence)}
- 5/5403 . . {containing no other elements than carbon or hydrogen}
- 5/5406 . . {containing elements other than oxygen or nitrogen}
- 5/541 . . containing oxygen
- 5/5415 . . . containing at least one Si—O bond
- 5/5419 containing at least one Si—C bond
- 5/5425 . . . containing at least one C=C bond
- 5/5435 . . . containing oxygen in a ring
- 5/544 . . containing nitrogen
- 5/5442 . . . {containing nitrogen in a heterocyclic ring}
- 5/5455 . . . containing at least one $\begin{array}{c} \text{O} \\ \parallel \\ >\text{N}-\text{C}- \end{array}$ group
{(C08K 5/5442 takes precedence)}
- 5/5465 . . . containing at least one C=N bond
{(C08K 5/5442 takes precedence)}
- 5/5475 . . . containing at least one C-N {triple} bond
{(C08K 5/5442 takes precedence)}
- 5/548 . . containing sulfur {(C08K 5/5442 takes precedence)}
- 5/549 . . containing silicon in a ring
- 5/55 . Boron-containing compounds {(C08K 5/0091 takes precedence)}
- 5/56 . Organo-metallic compounds, i.e. organic compounds containing a metal-to-carbon bond
- 5/57 . . Organo-tin compounds
- 5/58 . . . containing sulfur
- 5/59 . Arsenic- or antimony-containing compounds

7/00 Use of ingredients characterised by shape

NOTE

In this group, C-Sets are used. The detailed information about the C-Sets construction and the associated syntax rules is present in the Definitions of C08K.

- 7/02 . Fibres or whiskers
- 7/04 . . inorganic
- 7/06 . . . Elements
- 7/08 . . . Oxygen-containing compounds
- 7/10 . . . Silicon-containing compounds
- 7/12 Asbestos
- 7/14 . . . Glass
- 7/16 . Solid spheres
- 7/18 . . inorganic
- 7/20 . . . Glass
- 7/22 . Expanded, porous or hollow particles

- 7/24 . . inorganic

WARNING

Group C08K 7/24 is impacted by reclassification into groups C08K 3/041, C08K 3/042, C08K 3/043, C08K 3/044, C08K 3/045 and C08K 3/046.

All groups listed in this warning should be considered in order to perform a complete search.

- 7/26 . . . Silicon- containing compounds

- 7/28 . . . Glass

9/00 Use of pretreated ingredients

NOTE

In this group, C-Sets are used. The detailed information about the C-Sets construction and the associated syntax rules is present in the Definitions of C08K.

- 9/02 . Ingredients treated with inorganic substances
- 9/04 . Ingredients treated with organic substances {(treated with macromolecular compounds C08K 9/08)}
- 9/06 . . with silicon-containing compounds
- 9/08 . Ingredients agglomerated by treatment with a binding agent
- 9/10 . Encapsulated ingredients
- 9/12 . Adsorbed ingredients {, e.g. ingredients on carriers}

11/00 Use of ingredients of unknown constitution, e.g. undefined reaction products

NOTE

In this group, C-Sets are used. The detailed information about the C-Sets construction and the associated syntax rules is present in the Definitions of C08K.

- 11/005 . {Waste materials, e.g. treated or untreated sewage sludge}

13/00 Use of mixtures of ingredients not covered by one single of the preceding main groups, each of these compounds being essential

NOTE

In this group, C-Sets are used. The detailed information about the C-Sets construction and the associated syntax rules is present in the Definitions of C08K.

- 13/02 . Organic and inorganic ingredients
- 13/04 . Ingredients characterised by their shape and organic or inorganic ingredients
- 13/06 . Pretreated ingredients and ingredients covered by the main groups C08K 3/00 - C08K 7/00
- 13/08 . Ingredients of unknown constitution and ingredients covered by the main groups C08K 3/00 - C08K 9/00

2201/00 Specific properties of additives

- 2201/001 . Conductive additives
- 2201/002 . Physical properties
- 2201/003 . . Additives being defined by their diameter
- 2201/004 . . Additives being defined by their length

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- 2201/005 . . Additives being defined by their particle size in general
- 2201/006 . . Additives being defined by their surface area
- 2201/007 . Fragrance additive
- 2201/008 . Additives improving gas barrier properties
- 2201/009 . Additives being defined by their hardness
- 2201/01 . Magnetic additives
- 2201/011 . Nanostructured additives
- 2201/012 . Additives improving oxygen scavenging properties
- 2201/013 . Additives applied to the surface of polymers or polymer particles
- 2201/014 . Additives containing two or more different additives of the same subgroup in [C08K](#)
- 2201/015 . Additives for heat shrinkable compositions
- 2201/016 . Additives defined by their aspect ratio
- 2201/017 . Additives being an antistatic agent
- 2201/018 . Additives for biodegradable polymeric composition
- 2201/019 . the composition being defined by the absence of a certain additive