

CPC COOPERATIVE PATENT CLASSIFICATION

C CHEMISTRY; METALLURGY

(NOTES omitted)

CHEMISTRY

C08 ORGANIC MACROMOLECULAR COMPOUNDS; THEIR PREPARATION OR CHEMICAL WORKING-UP; COMPOSITIONS BASED THEREON (manufacture or treatment of artificial threads, fibres, bristles or ribbons [D01](#))

C08K USE OF INORGANIC OR NON-MACROMOLECULAR ORGANIC SUBSTANCES AS COMPOUNDING INGREDIENTS (pesticides, herbicides [A01N](#); pharmaceuticals, cosmetics [A61K](#); explosives [C06B](#); paints, inks, varnishes, dyes, polishes, adhesives [C09](#); lubricants [C10M](#); detergents [C11D](#); artificial filaments or fibres [D01F](#); textile treating compositions [D06](#))

NOTES

- The use of an ingredient for a specific polymer is classified by adding, in a C-set, to the group symbol of [C08K](#), the subdivision of [C08L 1/00](#) - [C08L 99/00](#). Example: Polystyrene containing a carboxylic amide is classified in ([C08K 5/20](#), [C08L 25/06](#)).
- From April 2012, the use of an ingredient for a specific polymer is classified by adding, in a C-set, to the group symbol of [C08K](#), the subdivision of [C08L 1/00](#) - [C08L 99/00](#). Example: Polystyrene containing a carboxylic amide is classified in ([C08K 5/20](#), [C08L 25/06](#)).
- In this subclass, in the absence of an indication to the contrary, an ingredient is classified in the last appropriate place.
- 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
- In this subclass, organic acid salts, alcoholates, phenolates or mercaptides are classified in the groups or subgroups of the parent compounds
- The use of an ingredient for a specific polymer is classified by adding to the group symbol of [C08K](#) and separated therefrom by a "+" sign, the subdivision of [C08L 1/00](#) - [C08L 99/00](#).
Example: Polystyrene containing a carboxylic amide is classified in [C08K 5/20](#) + [C08L 25/06](#)
- In this subclass 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 filler and macromolecule

Are not considered as compounding ingredients:

 - chemical modifying or crosslinking agents which react via a condensation or addition mechanism (for [C08B](#) polymers [C08B](#), for diene rubbers [C08C 19/30](#), for other vinyl polymers [C08F 8/00](#), for polysiloxanes [C08L 83/00](#), for other [C08G](#) polymers [C08G](#))
 - solvents or dispersion agents for making polymer solutions, emulsions or dispersions ([C08J 3/02](#))
 - blowing agents ([C08J 9/04](#))

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

3/011 . . Crosslinking or vulcanising agents, e.g. accelerators

3/01 . characterized by their specific function

- 3/012 . . Additives activating the degradation of the macromolecular compounds
- 3/013 . . Fillers, pigments or reinforcing additives
- 3/014 . . Stabilisers against oxidation, heat, light or ozone
- 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 (Fe₂O₃)}
- 2003/2275 {Ferroso-ferric oxide (Fe₃O₄)}
- 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**
- 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. C₆H₅-CH₂-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 $\begin{array}{c} \text{O} \\ \parallel \\ -\text{O}-\text{C}-\text{Nk} \end{array}$ 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}\(\text{S}\)-\text{C}\(\text{S}\)-\text{Nk} \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**
- 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**
- 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**
- 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**
- 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
- 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