CPC COOPERATIVE PATENT CLASSIFICATION

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

1. 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).

2. 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).

3. In this subclass, in the absence of an indication to the contrary, an ingredient is classified in the last appropriate place.

4. 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

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

6. 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`

7. 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)

C08K
(continued)

– blowing agents (C08J 9/04)

WARNING

The following IPC group is not used in the CPC system. Subject matter covered by this group is classified in the following CPC groups:
C08K 5/5445 `covered by` C08K 5/544

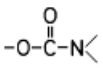
C08K 3/00	**Use of inorganic ingredients**
C08K 3/0008	. {Inorganic ingredients according to more than one of the "one dot" groups of C08K 3/02 - C08K 3/40}
C08K 3/0016	. . {Crosslinking or vulcanising agents, including accelerators}
C08K 3/0025	. . {Additives activating the degradation of the macromolecular compound}
C08K 3/0033	. . {Fillers, pigments, reinforcing additives}
C08K 3/0041	. . {Stabilisers against oxidation, heat, light, ozone}
C08K 3/005	. . {Biocides; (macromolecular substances as carriers for biocide material A01N 25/10)}
C08K 3/0058	. . {Flame-proofing or flame-retarding additives}
C08K 3/0066	. . {Antistatics}
C08K 3/0075	. {Metal containing compounds according to more than one of the "one dot" groups of C08K 3/10 - C08K 3/40}
C08K 3/0083	. . {Compounds containing metals of the 1st to 3rd Group of the Periodic system}
C08K 3/0091	. . {Compounds containing metals of the 4th to 8th Group of the Periodic system, e.g. nickel compounds}
C08K 3/02	. Elements
C08K 2003/023	. . {Silicon}
C08K 2003/026	. . {Phosphorus}
C08K 3/04	. . Carbon
C08K 2003/045	. . . {Fullerenes}
C08K 3/06	. . Sulfur
C08K 3/08	. . Metals
C08K 2003/0806	. . . {Silver}
C08K 2003/0812	. . . {Aluminium}
C08K 2003/0818	. . . {Alkali metal}
C08K 2003/0825	. . . . {Potassium}
C08K 2003/0831	. . . {Gold}
C08K 2003/0837	. . . {Bismuth}
C08K 2003/0843	. . . {Cobalt}
C08K 2003/085	. . . {Copper}
C08K 2003/0856	. . . {Iron}
C08K 2003/0862	. . . {Nickel}
C08K 2003/0868	. . . {Osmium}

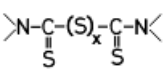
C08K 2003/0875 . . . {Antimony}
C08K 2003/0881 . . . {Titanium}
C08K 2003/0887 . . . {Tungsten}
C08K 2003/0893 . . . {Zinc}
C08K 3/10 . Metal compounds
C08K 3/12 . . Hydrides
C08K 3/14 . . Carbides
C08K 3/16 . Halogen-containing compounds
C08K 2003/162 . . {Calcium, strontium or barium halides, e.g. calcium, strontium or barium chloride}
C08K 2003/164 . . {Aluminum halide, e.g. aluminium chloride}
C08K 2003/166 . . {Magnesium halide, e.g. magnesium chloride}
C08K 2003/168 . . {Zinc halides}
C08K 3/18 . Oxygen-containing compounds, e.g. metal carbonyls
C08K 3/20 . . Oxides; Hydroxides
C08K 3/22 . . . of metals
C08K 2003/2203 . . . . {of lithium}
C08K 2003/2206 . . . . {of calcium, strontium or barium}
C08K 2003/221 . . . . {of rare earth metal}
C08K 2003/2213 . . . . . {of cerium}
C08K 2003/2217 . . . . {of magnesium}
C08K 2003/222 . . . . . {Magnesia, i.e. magnesium oxide}
C08K 2003/2224 . . . . . {Magnesium hydroxide}
C08K 2003/2227 . . . . {of aluminium}
C08K 2003/2231 . . . . {of tin}
C08K 2003/2234 . . . . {of lead}
C08K 2003/2237 . . . . {of titanium}
C08K 2003/2241 . . . . . {Titanium dioxide}
C08K 2003/2244 . . . . . {of zirconium}
C08K 2003/2248 . . . . {of copper}
C08K 2003/2251 . . . . {of chromium}
C08K 2003/2255 . . . . {of molybdenum}
C08K 2003/2258 . . . . {of tungsten}
C08K 2003/2262 . . . . {of manganese}
C08K 2003/2265 . . . . {of iron}
C08K 2003/2268 . . . . . {Ferrous oxide (FeO)}
C08K 2003/2272 . . . . . {Ferric oxide (Fe_2O_3)}
C08K 2003/2275 . . . . . {Ferroso-ferric oxide (Fe_3O_4)}
C08K 3/2279 . . . . {of antimony}
C08K 2003/2282 . . . . . {Antimonates}

C08K 2003/2286 . . . . {of silver}
C08K 2003/2289 . . . . {of cobalt}
C08K 2003/2293 . . . . {of nickel}
C08K 2003/2296 . . . . {of zinc}
C08K 3/24 . . Acids; Salts thereof {(C08K 3/16 takes precedence)}
C08K 3/26 . . . Carbonates; Bicarbonates
C08K 2003/262 . . . . {Alkali metal carbonates}
C08K 2003/265 . . . . {Calcium, strontium or barium carbonate}
C08K 2003/267 . . . . {Magnesium carbonate}
C08K 3/28 . Nitrogen-containing compounds
C08K 2003/282 . . {Binary compounds of nitrogen with aluminium}
C08K 2003/285 . . {Ammonium nitrates}
C08K 2003/287 . . {Calcium, strontium or barium nitrates}
C08K 3/30 . Sulfur-, selenium- or tellurium-containing compounds
C08K 2003/3009 . . {Sulfides}
C08K 2003/3018 . . . {of magnesium, calcium, strontium or barium}
C08K 2003/3027 . . . {of cadmium}
C08K 2003/3036 . . . {of zinc}
C08K 2003/3045 . . {Sulfates}
C08K 2003/3054 . . . {Ammonium sulfates}
C08K 2003/3063 . . . {Magnesium sulfate}
C08K 2003/3072 . . . {Iron sulfates}
C08K 2003/3081 . . . {Aluminum sulfate}
C08K 2003/309 . . {Sulfur containing acids}
C08K 3/32 . Phosphorus-containing compounds
C08K 2003/321 . . {Phosphates}
C08K 2003/322 . . . {Ammonium phosphate}
C08K 2003/323 . . . . {Ammonium polyphosphate}
C08K 2003/324 . . . {Alkali metal phosphate}
C08K 2003/325 . . . {Calcium, strontium or barium phosphate}
C08K 2003/326 . . . {Magnesium phosphate}
C08K 2003/327 . . . {Aluminium phosphate}
C08K 2003/328 . . . {Phosphates of heavy metals}
C08K 2003/329 . . {Phosphorus containing acids}
C08K 3/34 . Silicon-containing compounds
C08K 2003/343 . . {Peroxyhydrates, peroxyacids or salts thereof}
C08K 3/346 . . {Clay}
C08K 3/36 . . Silica
C08K 3/38 . Boron-containing compounds
C08K 2003/382 . . {and nitrogen}

C08K 2003/385 . . . {Binary compounds of nitrogen with boron}
C08K 2003/387 . . {Borates}
C08K 3/40 . Glass

C08K 5/00 Use of organic ingredients
C08K 5/0008 . {Organic ingredients according to more than one of the "one dot" groups of C08K 5/01 - C08K 5/59}
C08K 5/0016 . . {Plasticisers}
C08K 5/0025 . . {Crosslinking or vulcanising agents; including accelerators}
C08K 5/0033 . . {Additives activating the degradation of the macromolecular compound}
C08K 5/0041 . . {Optical brightening agents, organic pigments}
C08K 5/005 . . {Stabilisers against oxidation, heat, light, ozone}
C08K 5/0058 . . {Biocides; (macromolecular substances as carriers for biocide material A01N 25/10)}
C08K 5/0066 . . {Flame-proofing or flame-retarding additives}
C08K 5/0075 . . {Antistatics}
C08K 5/0083 . . {Nucleating agents promoting the crystallisation of the polymer matrix}
C08K 5/0091 . {Complexes with metal-heteroatom-bonds}
C08K 5/01 . Hydrocarbons {(C08K 5/0091 takes precedence)}
C08K 5/02 . Halogenated hydrocarbons {(C08K 5/0091 takes precedence)}
C08K 5/03 . . aromatic, {e.g. C_6H_5-CH_2-Cl}
C08K 5/04 . Oxygen-containing compounds {(C08K 5/0091 takes precedence)}
C08K 5/05 . . Alcohols; Metal alcoholates
C08K 5/053 . . . Polyhydroxylic alcohols
C08K 5/057 . . . Metal alcoholates {(metal enolates C08K 5/0091)}
C08K 5/06 . . Ethers; Acetals; Ketals; Ortho-esters
C08K 5/07 . . Aldehydes; Ketones
C08K 5/08 . . . Quinones
C08K 5/09 . . Carboxylic acids; Metal salts thereof; Anhydrides thereof
C08K 5/092 . . . Polycarboxylic acids
C08K 5/095 . . . Carboxylic acids containing halogens
C08K 5/098 . . . Metal salts of carboxylic acids
C08K 5/10 . . Esters; Ether-esters
C08K 5/101 . . . of monocarboxylic acids
C08K 5/103 . . . . with polyalcohols
C08K 5/105 . . . . with phenols
C08K 5/107 . . . . . with polyphenols
C08K 5/109 . . . of carbonic acid, {e.g. R-O-C(=O)-O-R}
C08K 5/11 . . . of acyclic polycarboxylic acids
C08K 5/12 . . . of cyclic polycarboxylic acids
C08K 5/13 . . Phenols; Phenolates

C08K 5/132 . . . Phenols containing keto groups, {e.g. benzophenones}
C08K 5/134 . . . Phenols containing ester groups
C08K 5/1345 . . . . {Carboxylic esters of phenolcarboxylic acids}
C08K 5/136 . . . Phenols containing halogens
C08K 5/138 . . . Phenolates
C08K 5/14 . . Peroxides
C08K 5/15 . . Heterocyclic compounds having oxygen in the ring
C08K 5/151 . . . having one oxygen atom in the ring
C08K 5/1515 . . . . Three-membered rings
C08K 5/1525 . . . . Four-membered rings
C08K 5/1535 . . . . Five-membered rings
C08K 5/1539 . . . . . Cyclic anhydrides
C08K 5/1545 . . . . Six-membered rings
C08K 5/156 . . . having two oxygen atoms in the ring
C08K 5/1565 . . . . Five-membered rings
C08K 5/1575 . . . . Six-membered rings
C08K 5/159 . . . having more than two oxygen atoms in the ring
C08K 5/16 . Nitrogen-containing compounds {(C08K 5/0091 takes precedence)}
C08K 5/17 . . Amines; Quaternary ammonium compounds
C08K 5/175 . . . {containing COOH-groups; Esters or salts thereof}
C08K 5/18 . . . with aromatically bound amino groups
C08K 5/19 . . . Quaternary ammonium compounds
C08K 5/20 . . Carboxylic acid amides
C08K 5/205 . . Compounds containing  groups, e.g. carbamates
C08K 5/21 . . Urea; Derivatives thereof, e.g. biuret
C08K 5/22 . . Compounds containing nitrogen bound to another nitrogen atom
C08K 5/23 . . . Azo-compounds
C08K 5/235 . . . . {Diazo and polyazo compounds}
C08K 5/24 . . . Derivatives of hydrazine
C08K 5/25 . . . . Carboxylic acid hydrazides
C08K 5/26 . . . . Semicarbazides
C08K 5/27 . . . Compounds containing a nitrogen atom bound to two other nitrogen atoms, e.g. diazoamino-compounds
C08K 5/28 . . . . Azides
C08K 5/29 . . Compounds containing {one or more} carbon-to-nitrogen double bonds
C08K 5/30 . . . Hydrazones; Semicarbazones
C08K 5/31 . . . Guanidine; Derivatives thereof
C08K 5/315 . . Compounds containing carbon-to-nitrogen triple bonds
C08K 5/3155 . . . {Dicyandiamide}

C08K 5/32 . . Compounds containing nitrogen bound to oxygen
C08K 5/33 . . . Oximes
C08K 5/34 . . Heterocyclic compounds having nitrogen in the ring
C08K 5/3412 . . . having one nitrogen atom in the ring
C08K 5/3415 . . . . Five-membered rings
C08K 5/3417 . . . . . condensed with carbocyclic rings
C08K 5/3432 . . . . Six-membered rings
C08K 5/3435 . . . . . Piperidines
C08K 5/3437 . . . . . condensed with carbocyclic rings
C08K 5/3442 . . . having two nitrogen atoms in the ring
C08K 5/3445 . . . . Five-membered rings
C08K 5/3447 . . . . . condensed with carbocyclic rings
C08K 5/3462 . . . . Six-membered rings
C08K 5/3465 . . . . . condensed with carbocyclic rings
C08K 5/3467 . . . having more than two nitrogen atoms in the ring
C08K 5/3472 . . . . Five-membered rings
C08K 5/3475 . . . . . condensed with carbocyclic rings
C08K 5/3477 . . . . Six-membered rings
C08K 5/3492 . . . . . Triazines
C08K 5/34922 . . . . . {Melamine; Derivatives thereof}
C08K 5/34924 . . . . . {containing cyanurate groups; Tautomers thereof}
C08K 5/34926 . . . . . {also containing heterocyclic groups other than triazine groups}
C08K 5/34928 . . . . . {Salts}
C08K 5/3495 . . . . . condensed with carbocyclic rings
C08K 5/35 . . . having also oxygen in the ring
C08K 5/353 . . . . Five-membered rings
C08K 5/357 . . . . Six-membered rings
C08K 5/36 . Sulfur-, selenium-, or tellurium-containing compounds {(C08K 5/0091 takes precedence)}
C08K 5/37 . . Thiols
C08K 5/372 . . . Sulfides, {e.g. R-(S)x-R'}
C08K 5/3725 . . . . {containing nitrogen}
C08K 5/375 . . . containing six-membered aromatic rings {(C08K 5/3725 takes precedence)}
C08K 5/378 . . . containing heterocyclic rings
C08K 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}
C08K 5/39 . . Thiocarbamic acids; Derivatives thereof, e.g. dithiocarbamates
C08K 5/40 . . . Thiurams, {i.e. compounds containing  groups}

C08K 5/405 . . . Thioureas; Derivatives thereof
C08K 5/41 . . Compounds containing sulfur bound to oxygen
C08K 5/42 . . . Sulfonic acids; Derivatives thereof
C08K 5/43 . . Compounds containing sulfur bound to nitrogen
C08K 5/435 . . . Sulfonamides
C08K 5/44 . . . Sulfenamides
C08K 5/45 . . Heterocyclic compounds having sulfur in the ring
C08K 5/46 . . . with oxygen or nitrogen in the ring
C08K 5/47 . . . . Thiazoles
C08K 5/48 . . Selenium- or tellurium-containing compounds
C08K 5/49 . Phosphorus-containing compounds {(C08K 5/0091 takes precedence)}
C08K 5/50 . . Phosphorus bound to carbon only
C08K 5/51 . . Phosphorus bound to oxygen
C08K 5/52 . . . Phosphorus bound to oxygen only
C08K 5/5205 . . . . {Salts of P-acids with N-bases}
C08K 5/521 . . . . Esters of phosphoric acids, e.g. of H_3PO_4
C08K 5/523 . . . . . with hydroxyaryl compounds
C08K 5/524 . . . . Esters of phosphorous acids, e.g. of H_3PO_3
C08K 5/526 . . . . . with hydroxyaryl compounds
C08K 5/527 . . . . Cyclic esters
C08K 5/529 . . . . Esters containing heterocyclic rings not representing cyclic esters of phosphoric or phosphorous acids
C08K 5/53 . . . bound to oxygen and to carbon only
C08K 5/5313 . . . . Phosphinic compounds, e.g. R_2=P(:O)OR'
C08K 5/5317 . . . . Phosphonic compounds, e.g. R-P(:O)(OR')$_2$
C08K 5/5333 . . . . . Esters of phosphonic acids
C08K 5/5337 . . . . . containing also halogens
C08K 5/5353 . . . . . containing also nitrogen
C08K 5/5357 . . . . . cyclic
C08K 5/5373 . . . . . containing heterocyclic rings not representing cyclic esters of phosphonic acids
C08K 5/5377 . . . . Phosphinous compounds, e.g. R_2=P-OR'
C08K 5/5393 . . . . Phosphonous compounds, e.g. R-P(OR')$_2$
C08K 5/5397 . . . . Phosphine oxides
C08K 5/5398 . . Phosphorus bound to sulfur
C08K 5/5399 . . Phosphorus bound to nitrogen
C08K 5/54 . Silicon-containing compounds {(C08K 5/0091 takes precedence)}
C08K 5/5403 . . {containing no other elements than carbon or hydrogen}
C08K 5/5406 . . {containing elements other than oxygen or nitrogen}
C08K 5/541 . . containing oxygen

C08K 5/5415 . . . containing at least one Si-O bond

C08K 5/5419 . . . . containing at least one Si-C bond

C08K 5/5425 . . . containing at least one C=C bond

C08K 5/5435 . . . containing oxygen in a ring

C08K 5/544 . . containing nitrogen

C08K 5/5442 . . . {containing nitrogen in a heterocyclic ring}

C08K 5/5455 . . . containing at least one  group {(C08K 5/5442 takes precedence)}

C08K 5/5465 . . . containing at least one C=N bond {(C08K 5/5442 takes precedence)}

C08K 5/5475 . . . containing at least one C-N {triple} bond {(C08K 5/5442 takes precedence)}

C08K 5/548 . . containing sulfur {(C08K 5/5442 takes precedence)}

C08K 5/549 . . containing silicon in a ring

C08K 5/55 . Boron-containing compounds {(C08K 5/0091 takes precedence)}

C08K 5/56 . Organo-metallic compounds, i.e. organic compounds containing a metal-to-carbon bond

C08K 5/57 . . Organo-tin compounds

C08K 5/58 . . . containing sulfur

C08K 5/59 . Arsenic- or antimony-containing compounds

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

C08K 7/02 . Fibres or whiskers

C08K 7/04 . . Inorganic

C08K 7/06 . . . Elements

C08K 7/08 . . . Oxygen-containing compounds

C08K 7/10 . . . Silicon-containing compounds

C08K 7/12 . . . . Asbestos

C08K 7/14 . . . Glass

C08K 7/16 . Solid spheres

C08K 7/18 . . Inorganic

C08K 7/20 . . . Glass

C08K 7/22 . Expanded, porous or hollow particles

C08K 7/24 . . Inorganic

C08K 7/26 . . . Silicon- containing compounds

C08K 7/28 . . . Glass

C08K 9/00 **Use of pretreated ingredients**

C08K 9/02 . Ingredients treated with inorganic substances

C08K 9/04	. Ingredients treated with organic substances {(treated with macromolecular compounds C08K 9/08)}
C08K 9/06	. . with silicon-containing compounds
C08K 9/08	. Ingredients agglomerated by treatment with a binding agent
C08K 9/10	. Encapsulated ingredients
C08K 9/12	. Adsorbed ingredients {, e.g. ingredients on carriers}
C08K 11/00	**Use of ingredients of unknown constitution, e.g. undefined reaction products**
C08K 11/005	. {Waste materials, e.g. treated or untreated sewage sludge}
C08K 13/00	**Use of mixtures of ingredients not covered by one single of the preceding main groups, each of these compounds being essential**
C08K 13/02	. Organic and inorganic ingredients
C08K 13/04	. Ingredients characterised by their shape and organic or inorganic ingredients
C08K 13/06	. Pretreated ingredients and ingredients covered by the main groups C08K 3/00 - C08K 7/00
C08K 13/08	. Ingredients of unknown constitution and ingredients covered by the main groups C08K 3/00 - C08K 9/00
C08K 2201/00	**Specific properties of additives**
C08K 2201/001	. Conductive additives
C08K 2201/002	. Physical properties
C08K 2201/003	. . Additives being defined by their diameter
C08K 2201/004	. . Additives being defined by their length
C08K 2201/005	. . Additives being defined by their particle size in general
C08K 2201/006	. . Additives being defined by their surface area
C08K 2201/007	. Fragrance additive
C08K 2201/008	. Additives improving gas barrier properties
C08K 2201/009	. Additives being defined by their hardness
C08K 2201/01	. Magnetic additives
C08K 2201/011	. Nanostructured additives
C08K 2201/012	. Additives improving oxygen scavenging properties
C08K 2201/013	. Additives applied to the surface of polymers or polymer particles
C08K 2201/014	. Additives containing two or more different additives of the same subgroup in C08K
C08K 2201/015	. Additives for heat shrinkable compositions
C08K 2201/016	. Additives defined by their aspect ratio
C08K 2201/017	. Additives being an antistatic agent
C08K 2201/018	. Additives for biodegradable polymeric composition
C08K 2201/019	. the composition being defined by the absence of a certain additive