

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 ([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

3/01 . characterized by their specific function

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

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)	3/045	. . . {Fullerenes}
3/016	. . Flame-proofing or flame-retarding additives	WARNING	
3/017	. . Antistatic agents	Group C08K 3/045 is incomplete pending reclassification of documents from groups C08K 3/04 and C08K 7/24 .	
3/02	. Elements	Groups C08K 3/045 , C08K 3/04 and C08K 7/24 should be considered in order to perform a complete search.	
2003/023	. . {Silicon}	3/046	. . . {Carbon nanorods, nanowires, nanoplatelets or nanofibres}
2003/026	. . {Phosphorus}	WARNING	
3/04	. . Carbon	Group C08K 3/046 is incomplete pending reclassification of documents from groups C08K 3/04 and C08K 7/24 .	
WARNING		Groups C08K 3/046 , C08K 3/04 and C08K 7/24 should be considered in order to perform a complete search.	
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 .		3/06	. . Sulfur
All groups listed in this warning should be considered in order to perform a complete search.		3/08	. . Metals
3/041	. . . {Carbon nanotubes}	2003/0806	. . . {Silver}
WARNING		2003/0812	. . . {Aluminium}
Group C08K 3/041 is incomplete pending reclassification of documents from groups C08K 3/04 and C08K 7/24 .		2003/0818	. . . {Alkali metal}
Groups C08K 3/041 , C08K 3/04 and C08K 7/24 should be considered in order to perform a complete search.		2003/0825	. . . . {Potassium}
3/042	. . . {Graphene or derivatives, e.g. graphene oxides}	2003/0831	. . . {Gold}
WARNING		2003/0837	. . . {Bismuth}
Group C08K 3/042 is incomplete pending reclassification of documents from groups C08K 3/04 and C08K 3/20 .		2003/0843	. . . {Cobalt}
Groups C08K 3/042 , C08K 3/04 and C08K 3/20 should be considered in order to perform a complete search.		2003/085	. . . {Copper}
3/043	. . . {Carbon nanocoils}	2003/0856	. . . {Iron}
WARNING		2003/0862	. . . {Nickel}
Group C08K 3/043 is incomplete pending reclassification of documents from groups C08K 3/04 and C08K 7/24 .		2003/0868	. . . {Osmium}
Groups C08K 3/043 , C08K 3/04 and C08K 7/24 should be considered in order to perform a complete search.		2003/0875	. . . {Antimony}
3/044	. . . {Carbon nanohorns or nanobells}	2003/0881	. . . {Titanium}
WARNING		2003/0887	. . . {Tungsten}
Group C08K 3/044 is incomplete pending reclassification of documents from groups C08K 3/04 and C08K 7/24 .		2003/0893	. . . {Zinc}
Groups C08K 3/044 , C08K 3/04 and C08K 7/24 should be considered in order to perform a complete search.		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}	2003/343	. . {Peroxyhydrates, peroxyacids or salts thereof}
2003/2206	. . . . {of calcium, strontium or barium}	3/346	. . {Clay}
2003/221	. . . . {of rare earth metal}	3/36	. . Silica
2003/2213	. . . . . {of cerium}	3/38	. Boron-containing compounds
2003/2217	. . . . . {of magnesium}	2003/382	. . {and nitrogen}
2003/222	. . . . . {Magnesia, i.e. magnesium oxide}	2003/385	. . . {Binary compounds of nitrogen with boron}
2003/2224	. . . . . {Magnesium hydroxide}	2003/387	. . {Borates}
2003/2227	. . . . . {of aluminium}	3/40	. Glass
2003/2231	. . . . . {of tin}	5/00	Use of organic ingredients
2003/2234	. . . . . {of lead}	5/0008	. {Organic ingredients according to more than one of the "one dot" groups of C08K 5/01 - C08K 5/59 }
2003/2237	. . . . . {of titanium}	5/0016	. . {Plasticisers}
2003/2241	. . . . . {Titanium dioxide}	5/0025	. . {Crosslinking or vulcanising agents; including accelerators}
2003/2244	. . . . . {of zirconium}	5/0033	. . {Additives activating the degradation of the macromolecular compound}
2003/2248	. . . . . {of copper}	5/0041	. . {Optical brightening agents, organic pigments}
2003/2251	. . . . . {of chromium}	5/005	. . {Stabilisers against oxidation, heat, light, ozone}
2003/2255	. . . . . {of molybdenum}	5/0058	. . {Biocides; (macromolecular substances as carriers for biocide material A01N 25/10)}
2003/2258	. . . . . {of tungsten}	5/0066	. . {Flame-proofing or flame-retarding additives}
2003/2262	. . . . . {of manganese}	5/0075	. . {Antistatics}
2003/2265	. . . . . {of iron}	5/0083	. . {Nucleating agents promoting the crystallisation of the polymer matrix}
2003/2268	. . . . . {Ferrous oxide (FeO)}	5/0091	. {Complexes with metal-heteroatom-bonds}
2003/2272	. . . . . {Ferric oxide (Fe ₂ O ₃)}	5/01	. Hydrocarbons {(C08K 5/0091 takes precedence)}
2003/2275	. . . . . {Ferroso-ferric oxide (Fe ₃ O ₄)}	5/02	. Halogenated hydrocarbons {(C08K 5/0091 takes precedence)}
3/2279	. . . . . {of antimony}	5/03	. . aromatic {, e.g. C ₆ H ₅ -CH ₂ -Cl}
2003/2282	. . . . . {Antimonates}	5/04	. Oxygen-containing compounds {(C08K 5/0091 takes precedence)}
2003/2286	. . . . . {of silver}	5/05	. . Alcohols; Metal alcoholates
2003/2289	. . . . . {of cobalt}	5/053	. . . Polyhydroxylic alcohols
2003/2293	. . . . . {of nickel}	5/057	. . . Metal alcoholates {(metal enolates C08K 5/0091)}
2003/2296	. . . . . {of zinc}	5/06	. . Ethers; Acetals; Ketals; Ortho-esters
3/24	. . Acids; Salts thereof {(C08K 3/16 takes precedence)}	5/07	. . Aldehydes; Ketones
3/26	. . . Carbonates; Bicarbonates	5/08	. . . Quinones
2003/262	. . . . {Alkali metal carbonates}	5/09	. . Carboxylic acids; Metal salts thereof; Anhydrides thereof
2003/265	. . . . {Calcium, strontium or barium carbonate}	5/092	. . . Polycarboxylic acids
2003/267	. . . . {Magnesium carbonate}	5/095	. . . Carboxylic acids containing halogens
3/28	. Nitrogen-containing compounds	5/098	. . . Metal salts of carboxylic acids
2003/282	. . {Binary compounds of nitrogen with aluminium}	5/10	. . Esters; Ether-esters
2003/285	. . {Ammonium nitrates}	5/101	. . . of monocarboxylic acids
2003/287	. . {Calcium, strontium or barium nitrates}	5/103	. . . . with polyalcohols
3/30	. Sulfur-, selenium- or tellurium-containing compounds	5/105	. . . . with phenols
2003/3009	. . {Sulfides}	5/107	. . . . . with polyphenols
2003/3018	. . . {of magnesium, calcium, strontium or barium}	5/109	. . . of carbonic acid {, e.g. R-O-C(=O)-O-R}
2003/3027	. . . {of cadmium}	5/11	. . . of acyclic polycarboxylic acids
2003/3036	. . . {of zinc}	5/12	. . . of cyclic polycarboxylic acids
2003/3045	. . {Sulfates}	5/13	. . Phenols; Phenolates
2003/3054	. . . {Ammonium sulfates}	5/132	. . . Phenols containing keto groups {, e.g. benzophenones}
2003/3063	. . . {Magnesium sulfate}	5/134	. . . Phenols containing ester groups
2003/3072	. . . {Iron sulfates}	5/1345	. . . . {Carboxylic esters of phenolcarboxylic acids}
2003/3081	. . . {Aluminum sulfate}	5/136	. . . Phenols containing halogens
2003/309	. . {Sulfur containing acids}	5/138	. . . Phenolates
3/32	. Phosphorus-containing compounds	5/14	. . Peroxides
2003/321	. . {Phosphates}	5/15	. . Heterocyclic compounds having oxygen in the ring
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		

- 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 $\begin{array}{c} \text{N}-\text{C}(=\text{S})-\text{C}(=\text{S})-\text{N}-\text{K} \\ \parallel \quad \quad \parallel \\ \text{S} \quad \quad \text{S} \end{array}$ 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. $R_2=P-OR'$
- 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 $\begin{array}{c} O \\ || \\ >N-C- \end{array}$ 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