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
3/011  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)
3/016  . . Flame-proofing or flame-retarding additives
3/017  . . Antistatic agents
3/02  . . Elements
2003/023  . . {Silicon}
2003/026  . . {Phosphorus}
3/04  . . Carbon
3/041  . . {Carbon nanotubes}
3/042  . . {Graphene or derivatives, e.g. graphene oxides}
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**.

5/005/008 . . . . . [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]
Nitrogen-containing compounds \( \{ (C08K 5/0091 \) takes precedence \}\)

Hydrocarbons \( \{ (C08K 5/0091 \) takes precedence \}\)

Complexes with metal-heteroatom-bonds

Alcohols; Metal alcoholates

Polyhydroxylic alcohols

Metal alcoholates \( \{ \text{metal enolates (C08K 5/0091)} \}\)

Ethers; Acetals; Ketals; Ortho-esters

Aldehydes; Ketones

Quinones

Carboxylic acids; Metal salts thereof; Anhydrides thereof

Polycarboxylic acids

Carboxylic acids containing halogens

Metal salts of carboxylic acids

Esters; Ether-esters

of monocarboxylic acids

with polyalcohols

with phenols

with polyphenols

of carbonic acid \( \{ \text{e.g. R-O-C(=O)-O-R} \}\)

of acyclic polycarboxylic acids

of cyclic polycarboxylic acids

Phenols; Phenolates

Phenols containing keto groups \( \{ \text{e.g. benzophenones} \}\)

Phenols containing ester groups

[Carboxylic esters of phenolcarboxylic acids]

Phenols containing halogens

Phenolates

Peroxides

Heterocyclic compounds having oxygen in the ring

having one oxygen atom in the ring

Three-membered rings

Four-membered rings

Five-membered rings

Cyclic anhydrides

Six-membered rings

having two oxygen atoms in the ring

Five-membered rings

Six-membered rings

having more than two oxygen atoms in the ring

Nitrogen-containing compounds \( \{ (C08K 5/0091 \) takes precedence \}\)

Amines; Quaternary ammonium compounds

[containing COOH-groups; Esters or salts thereof]

with aromatically bound amino groups

Quaternary ammonium compounds

Carboxylic acid amides

Compounds containing \( \) groups, e.g. carbamates

Urea; Derivatives thereof, e.g. biuret

Compounds containing nitrogen bound to another nitrogen atom

Azo-compounds

[Diazo and polyazo compounds]

Derivatives of hydrazine

Carboxylic acid hydrazides

Semicarbazides

Compounds containing a nitrogen atom bound to two other nitrogen atoms, e.g. diazoamino-compounds

Azides

Compounds containing one or more carbon-to-nitrogen double bonds

Hydrazone; Semicarbazone

Guanidine; Derivatives thereof

Compounds containing carbon-to-nitrogen triple bonds

[Dicyandiamide]

Compounds containing nitrogen bound to oxygen

Oximes

Heterocyclic compounds having nitrogen in the ring

having one nitrogen atom in the ring

Five-membered rings

condensed with carboxylic rings

Six-membered rings

Piperidines

condensed with carboxylic rings

having two nitrogen atoms in the ring

Five-membered rings

condensed with carboxylic rings

Six-membered rings

condensed with carboxylic rings

having more than two nitrogen atoms in the ring

Five-membered rings

condensed with carboxylic rings

Six-membered rings

Triazines

{Melamine; Derivatives thereof}

{containing cyanurate groups; Tautomers thereof}

{also containing heterocyclic groups other than triazine groups}

{Salts}

condensed with carboxylic rings

having also oxygen in the ring

Five-membered rings

Six-membered rings

Sulfur-, selenium-, or tellurium-containing compounds \( \{ (C08K 5/3725 \) takes precedence \}\)

Thiols

Sulfides \( \{ \text{e.g. R-(S)x-R'} \}\)

{containing nitrogen}

containing six-membered aromatic rings \( \{ (C08K 5/3725 \) takes precedence \}\)
C08K

5/378 . . . containing heterocyclic rings
5/38 . . . Thiocarboxylic acids; Derivatives thereof, e.g. xanthates [i.e. compounds containing X-C(=N=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 \( \text{thiuram} = \overset{\text{N}}{\text{S}} \text{N} \text{S} \text{N} \)]
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 phosphorus 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(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
5/542 . . . [containing nitrogen in a heterocyclic ring]
5/5455 . . . containing at least one O group
5/5465 . . . containing at least one C≡N bond
5/5475 . . . containing at least one C=N [triple] bond
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
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
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