

CPC COOPERATIVE PATENT CLASSIFICATION

C CHEMISTRY; METALLURGY

(NOTES omitted)

CHEMISTRY

C10 PETROLEUM, GAS OR COKE INDUSTRIES; TECHNICAL GASES CONTAINING CARBON MONOXIDE; FUELS; LUBRICANTS; PEAT

C10M LUBRICATING COMPOSITIONS (well drilling compositions [C09K 8/02](#)); USE OF CHEMICAL SUBSTANCES EITHER ALONE OR AS LUBRICATING INGREDIENTS IN A LUBRICATING COMPOSITION (lubricants for medical use [A61](#)); mould release, i.e. separating, agents for metals [B22C 3/00](#), for plastics or substances in a plastic state, in general [B29C 33/56](#), for glass [C03B 40/02](#); use of particular substances in particular apparatus or conditions, see [F16N](#) or the relevant groups for the application, e.g. [A21D 8/08](#), [B21C 9/00](#), [H01B 3/18](#); immersion oils for microscopy [G02B 21/33](#))

NOTES

1. In this subclass, the following terms are used with the meanings indicated:
 - "lubricant" or "lubricating composition" includes cutting oils, hydraulic fluids, metal drawing compositions, flushing oils, slushing oils, or the like;
 - "aliphatic" includes "cycloaliphatic".
2. In respect of the classification of mixtures, attention is drawn to Note (4) (e) below.
3. In this subclass, in the absence of an indication to the contrary, classification is made in the last appropriate place. Thus, a compound having an aromatic ring is classified as aromatic regardless of whether the substituent(s) of interest are on the ring or on an aliphatic part of the molecule.
4. In this subclass:
 - a. metal or ammonium salts of a compound are classified as that compound;
 - b. salts or adducts formed between two or more organic compounds are classified according to all compounds forming the salt or adduct, if of interest;
 - c. a specified compound, e.g. phenols, acids, substituted by a macromolecular hydrocarbon radical is classified as that compound;
 - d. base-materials or thickeners or additives consisting of a mixture for which no specific main group is provided are classified in the most indented group covering all essential constituents of the mixture, for example,
 - a base-material mixture of ketone and amide - group [C10M 105/00](#)
 - a base-material mixture of ketone and ether - group [C10M 105/08](#)
 - an additive mixture of long and short chain esters - group [C10M 129/00](#)
 - an additive mixture of short chain aliphatic and aromatic carboxylic acids- group [C10M 129/26](#);
 - e. except for aqueous lubricating compositions containing more than 10% water, which are classified separately, classification is made according to the type of ingredient or mixture of types of ingredient (base-material, thickener or additive) which characterises the composition. Attention is drawn to the fact that a mixture of essential ingredients characterised by only one of its components, rather than by the mixture as a whole, is not classified as a mixture, e.g. a lubricating composition consisting of:
 - a known base-material and a new additive is classified only in the "additive" part of the classification scheme;
 - a known base-material with both a thickener and a further additive as essential ingredients, which may be individually classified as a mixture of thickener and additive;
 - known base-material with a combination of additives as essential ingredients, which may be individually known or not, is classified in the appropriate place for the additive mixture.
5. In this subclass, it is desirable to add the indexing codes of:
 - subclass [C10M](#), relating to the chemical constitution of individual compounds of the lubricating compositions;
 - subclass [C10N](#), relating to physico-chemical aspects of the lubricating compositions or of their compounding ingredients.
 For more information about the way of allocating these indexing codes, see the notes after the titles of the respective subclasses.
6. In this subclass, until May 2003, indexing codes were added, relating to:
 - each of the essential ingredients of a mixture. However, in the case of an aqueous lubricating composition covered by group [C10M 173/00](#), the presence of water is not indicated;
 - each of the essential reactants of a reaction product covered by groups [C10M 109/02](#), [C10M 121/04](#) or [C10M 159/12](#)
 The indexing codes, which are chosen from groups [C10M 101/00 - C10M 109/00](#), [C10M 113/00 - C10M 121/00](#), [C10M 125/00 - C10M 139/00](#), [C10M 143/00 - C10M 155/00](#), [C10M 159/00](#) or [C10M 163/00 - C10M 167/00](#), were given using Combination Sets.

C10M

(continued)

7. In this subclass, until May 2003, the indexing codes of subclass [C10N](#) were added.

Documents classified with Combination Sets according to internal Notes 2), 3) and 5) are in the state of being reclassified according to Note 1).

WARNING

The following groups are no longer used for the classification of new documents from January, 1978:

- [C10M 1/00](#) - [C10M 7/00](#)

The backlog of these groups is continuously being reclassified in groups [C10M 101/00](#) - [C10M 177/00](#).

IPC3 groups

		105/20	. . Aldehydes; Ketones
		105/22	. . Carboxylic acids or their salts
		105/24	. . . having only one carboxyl group bound to an acyclic carbon atom, cycloaliphatic carbon atom or hydrogen
1/00	{Liquid compositions essentially based on mineral lubricating oils or fatty oils; Their use as lubricants}		
1/08	. {with additives}		
		105/26	. . . having more than one carboxyl group bound to an acyclic carbon atom or cycloaliphatic carbon atom
3/00	{Liquid compositions essentially based on lubricating components other than mineral lubricating oils or fatty oils and their use as lubricants; Use as lubricants of single liquid substances (compositions in general essentially based on macromolecular compounds C08L)}		
		105/28	. . . having only one carboxyl group bound to a carbon atom of a six-membered aromatic ring
		105/30	. . . having more than one carboxyl group bound to a carbon atom of a six-membered aromatic ring
5/00	{Solid or semi-solid compositions containing as the essential lubricating ingredient mineral lubricating oils or fatty oils and their use}		
		105/32	. . Esters
		105/34	. . . of monocarboxylic acids
		105/36	. . . of polycarboxylic acids
		105/38	. . . of polyhydroxy compounds
7/00	{Solid or semi-solid compositions essentially based on lubricating components other than mineral lubricating oils or fatty oils and their use as lubricants; Use as lubricants of single solid or semi-solid substances (compositions in general essentially based on macromolecular compounds C08L)}		
		105/40	. . . containing free hydroxy or carboxyl groups
		105/42	. . . Complex esters, i.e. compounds containing at least three esterified carboxyl groups and derived from the combination of at least three different types of the following five types of compound: monohydroxy compounds, polyhydroxy compounds, monocarboxylic acids, polycarboxylic acids and hydroxy carboxylic acids

Base-Materials

101/00	Lubricating compositions characterised by the base-material being a mineral or fatty oil (containing more than 10% water C10M 173/00)	105/44	. . . . derived from the combination of monocarboxylic acids, dicarboxylic acids and dihydroxy compounds only and having no free hydroxy or carboxyl groups
101/02	. Petroleum fractions		
101/025	. . {waxes}	105/46	. . . . derived from the combination of monohydroxy compounds, dihydroxy compounds and dicarboxylic acids only and having no free hydroxy or carboxyl groups
101/04	. Fatty oil fractions		
103/00	Lubricating compositions characterised by the base-material being an inorganic material (containing more than 10% water C10M 173/00)		
		105/48	. . . of carbonic acid
103/02	. Carbon; Graphite	105/50	. containing halogen
103/04	. Metals; Alloys	105/52	. . containing carbon, hydrogen and halogen only
103/06	. Metal compounds	105/525	. . . {halogenated waxes}
		105/54	. . containing carbon, hydrogen, halogen and oxygen
105/00	Lubricating compositions characterised by the base-material being a non-macromolecular organic compound	105/56	. containing nitrogen
		105/58	. . Amines, e.g. polyalkylene polyamines, quaternary amines (polyalkylene polyamines with eleven or more monomer units C10M 107/44)
105/02	. Well-defined hydrocarbons (petroleum fractions C10M 101/02)	105/60	. . . having amino groups bound to an acyclic or cycloaliphatic carbon atom
105/04	. . aliphatic		
105/06	. . aromatic	105/62	. . . . containing hydroxy groups
105/08	. containing oxygen	105/64	. . . having amino groups bound to a carbon atom of a six-membered aromatic ring
105/10	. . having hydroxy groups bound to acyclic or cycloaliphatic carbon atoms		
		105/66	. . . . containing hydroxy groups
105/12	. . . monohydroxy	105/68	. . Amides; Imides
105/14	. . . polyhydroxy	105/70	. . as ring hetero atom
105/16	. . having hydroxy groups bound to a carbon atom of a six-membered aromatic ring	105/72	. containing sulfur, selenium or tellurium
		105/74	. containing phosphorus
105/18	. . Ethers, e.g. epoxides	105/76	. containing silicon

- 105/78 . containing boron
- 105/80 . containing atoms of elements not provided for in groups [C10M 105/02](#) - [C10M 105/78](#)
- 107/00 Lubricating compositions characterised by the base-material being a macromolecular compound**
- 107/02 . Hydrocarbon polymers; Hydrocarbon polymers modified by oxidation
- 107/04 . . Polyethylene
- 107/06 . . containing propene
- 107/08 . . containing butene
- 107/10 . . containing aliphatic monomer having more than 4 carbon atoms
- 107/12 . . containing aromatic monomer, e.g. styrene
- 107/14 . . containing conjugated diene
- 107/16 . . containing non-conjugated diene
- 107/18 . . Hydrocarbon polymers modified by oxidation
- 107/20 . containing oxygen ([C10M 107/18 takes precedence](#))
- 107/22 . . Macromolecular compounds obtained by reactions only involving carbon-to-carbon unsaturated bonds
- 107/24 . . . containing monomers having an unsaturated radical bound to an alcohol, aldehyde, ketonic, ether, ketal or acetal radical
- 107/26 . . . containing monomers having an unsaturated radical bound to an acyloxy radical of a saturated carboxylic or carbonic acid
- 107/28 . . . containing monomers having an unsaturated radical bound to a carboxyl radical, e.g. acrylate
- 107/30 . . Macromolecular compounds obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds
- 107/32 . . . Condensation polymers of aldehydes or ketones; Polyesters; Polyethers
- 107/34 Polyoxyalkylenes
- 107/36 . . Polysaccharides, e.g. cellulose
- 107/38 . containing halogen
- 107/40 . containing nitrogen
- 107/42 . . Macromolecular compounds obtained by reactions only involving carbon-to-carbon unsaturated bonds
- 107/44 . . Macromolecular compounds obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds
- 107/46 . containing sulfur
- 107/48 . containing phosphorus
- 107/50 . containing silicon
- 107/52 . containing boron
- 107/54 . containing atoms of elements not provided for in groups [C10M 107/02](#) - [C10M 107/52](#)
- 109/00 Lubricating compositions characterised by the base-material being a compound of unknown or incompletely defined constitution ([C10M 101/00 takes precedence](#))**
- 109/02 . Reaction products
- 111/00 Lubrication compositions characterised by the base-material being a mixture of two or more compounds covered by more than one of the main groups [C10M 101/00](#) - [C10M 109/00](#), each of these compounds being essential**
- 111/02 . at least one of them being a non-macromolecular organic compound

- 111/04 . at least one of them being a macromolecular organic compound
- 111/06 . at least one of them being a compound of the type covered by group [C10M 109/00](#)

Thickeners**NOTE**

In groups [C10M 113/00-C10M 123/00](#), the following term is used with the meaning indicated:

- "thickener" is an agent which solidifies other liquid components to form a grease. Solid lubricants consisting of solid components are classified in groups [C10M 103/00](#) - [C10M 111/00](#).

113/00 Lubricating compositions characterised by the thickening agent being an inorganic material

- 113/02 . Carbon; Graphite
- 113/04 . Sulfur
- 113/06 . Metals; Alloys
- 113/08 . Metal compounds
- 113/10 . Clays; Micas
- 113/12 . Silica
- 113/14 . Glass
- 113/16 . Inorganic material treated with organic compounds, e.g. coated

115/00 Lubricating compositions characterised by the thickener being a non-macromolecular organic compound other than a carboxylic acid or salt thereof

- 115/02 . Hydrocarbons ([petroleum fractions C10M 121/02](#))
- 115/04 . containing oxygen
- 115/06 . containing halogen
- 115/08 . containing nitrogen
- 115/10 . containing sulfur
- 115/12 . containing phosphorus

117/00 Lubricating compositions characterised by the thickener being a non-macromolecular carboxylic acid or salt thereof

- 117/02 . having only one carboxyl group bound to an acyclic carbon atom, cycloaliphatic carbon atom or hydrogen
- 117/04 . . containing hydroxy groups
- 117/06 . having more than one carboxyl group bound to an acyclic carbon atom or cycloaliphatic carbon atom
- 117/08 . having only one carboxyl group bound to a carbon atom of a six-membered aromatic ring
- 117/10 . having more than one carboxyl group bound to a carbon atom of a six-membered aromatic ring

119/00 Lubricating compositions characterised by the thickener being a macromolecular compound

- 119/02 . Hydrocarbon polymers; Hydrocarbon polymers modified by oxidation
- 119/04 . containing oxygen ([hydrocarbon polymers modified by oxidation C10M 119/02](#))
- 119/06 . . Macromolecular compounds obtained by reactions only involving carbon-to-carbon unsaturated bonds
- 119/08 . . . containing monomers having an unsaturated radical bound to an alcohol, aldehyde, ketonic, ether, ketal or acetal radical

- 129/80 derived from the combination of monocarboxylic acids, dicarboxylic acids and dihydroxy compounds only and having no free hydroxy or carboxyl groups
- 129/82 derived from the combination of monohydroxy compounds, dihydroxy compounds and dicarboxylic acids only and having no free hydroxy or carboxyl groups
- 129/84 . . . of carbonic acid
- 129/86 . having a carbon chain of 30 or more atoms
- 129/88 . . Hydroxy compounds
- 129/90 . . . having hydroxy groups bound to acyclic or cycloaliphatic carbon atoms
- 129/91 . . . having hydroxy groups bound to a carbon atom of a six-membered aromatic ring
- 129/92 . . Carboxylic acids
- 129/93 . . . having carboxyl groups bound to acyclic or cycloaliphatic carbon atoms
- 129/94 . . . having carboxyl groups bound to a carbon atom of a six-membered aromatic ring
- 129/95 . . Esters
- 131/00 Lubricating compositions characterised by the additive being an organic non-macromolecular compound containing halogen**
- 131/02 . containing carbon, hydrogen and halogen only
- 131/04 . . aliphatic
- 131/06 . . aromatic
- 131/08 . containing carbon, hydrogen, halogen and oxygen
- 131/10 . . Alcohols; Ethers; Aldehydes; Ketones
- 131/12 . . Acids; Salts or esters thereof
- 131/14 . Halogenated waxes
- 133/00 Lubricating compositions characterised by the additive being an organic non-macromolecular compound containing nitrogen**
- 133/02 . having a carbon chain of less than 30 atoms
- 133/04 . . Amines, e.g. polyalkylene polyamines; Quaternary amines ([polyalkylene polyamines with eleven or more monomer units C10M 149/22](#))
- 133/06 . . . having amino groups bound to acyclic or cycloaliphatic carbon atoms
- 133/08 containing hydroxy groups
- 133/10 cycloaliphatic
- 133/12 . . . having amino groups bound to a carbon atom of a six-membered aromatic ring
- 133/14 containing hydroxy groups
- 133/16 . . Amides; Imides
- 133/18 . . . of carbonic or haloformic acids
- 133/20 Ureas; Semicarbazides; Allophanates
- 133/22 . . containing a carbon-to-nitrogen double bond, e.g. guanidines, hydrazones, semicarbazones
- 133/24 . . Nitriles
- 133/26 . . containing a nitrogen-to-nitrogen double bond
- 133/28 . . . Azo compounds
- 133/30 . . containing a nitrogen-to-oxygen bond
- 133/32 . . . containing a nitro group
- 133/34 . . . containing a nitroso group
- 133/36 . . . Hydroxylamines
- 133/38 . . Heterocyclic nitrogen compounds
- 133/40 . . . Six-membered ring containing nitrogen and carbon only
- 133/42 Triazines
- 133/44 . . . Five-membered ring containing nitrogen and carbon only
- 133/46 Imidazoles
- 133/48 . . . the ring containing both nitrogen and oxygen
- 133/50 Morpholines
- 133/52 . having a carbon chain of 30 or more atoms
- 133/54 . . Amines
- 133/56 . . Amides; Imides
- 133/58 . . Heterocyclic compounds
- 135/00 Lubricating compositions characterised by the additive being an organic non-macromolecular compound containing sulfur, selenium or tellurium**
- 135/02 . Sulfurised compounds
- 135/04 . . Hydrocarbons
- 135/06 . . Esters, e.g. fats
- 135/08 . containing a sulfur-to-oxygen bond
- 135/10 . . Sulfonic acids or derivatives thereof
- 135/12 . Thio-acids; Thiocyanates; Derivatives thereof
- 135/14 . . having a carbon-to-sulfur double bond
- 135/16 . . . thiourea type, i.e. containing the group
- $$\begin{array}{c} \text{S} \\ || \\ >\text{N}-\text{C}-\text{NK} \end{array}$$
- 135/18 . . . thiocarbamic type, e.g. containing the groups
- $$\begin{array}{c} \text{S} \\ || \\ >\text{N}-\text{C}-\text{S}- \end{array} \text{ or } \begin{array}{c} \text{S} \\ || \\ >\text{N}-\text{C}-\text{O}- \end{array}$$
- 135/20 . Thiols; Sulfides; Polysulfides
- 135/22 . . containing sulfur atoms bound to acyclic or cycloaliphatic carbon atoms
- 135/24 . . . containing hydroxy groups; Derivatives thereof
- 135/26 . . . containing carboxyl groups; Derivatives thereof
- 135/28 . . containing sulfur atoms bound to a carbon atom of a six-membered aromatic ring
- 135/30 . . . containing hydroxy groups; Derivatives thereof
- 135/32 . Heterocyclic sulfur, selenium or tellurium compounds
- 135/34 . . the ring containing sulfur and carbon only
- 135/36 . . the ring containing sulfur and carbon with nitrogen or oxygen
- 137/00 Lubricating compositions characterised by the additive being an organic non-macromolecular compound containing phosphorus**
- 137/02 . having no phosphorus-to-carbon bond
- 137/04 . . Phosphate esters
- 137/06 . . . Metal salts
- 137/08 . . . Ammonium or amine salts
- 137/10 . . . Thio derivatives
- 137/105 {not containing metal}
- 137/12 . having a phosphorus-to-carbon bond
- 137/14 . . containing sulfur
- 137/16 . having a phosphorus-to-nitrogen bond
- 139/00 Lubricating compositions characterised by the additive being an organic non-macromolecular compound containing atoms of elements not provided for in groups [C10M 127/00](#) - [C10M 137/00](#)**
- 139/02 . Esters of silicon acids
- 139/04 . having a silicon-to-carbon bond, e.g. silanes
- 139/06 . having a metal-to-carbon bond ([metal complexes of unknown constitution C10M 159/18](#))

141/00	Lubricating compositions characterised by the additive being a mixture of two or more compounds covered by more than one of the main groups C10M 125/00 - C10M 139/00, each of these compounds being essential	145/32	. . . . of alkylene oxides containing 4 or more carbon atoms
141/02	. at least one of them being an organic oxygen-containing compound	145/34	. . . . of two or more specified different types
141/04	. at least one of them being an organic halogen-containing compound	145/36	. . . . etherified
141/06	. at least one of them being an organic nitrogen-containing compound	145/38	. . . . esterified
141/08	. at least one of them being an organic sulfur-, selenium- or tellurium-containing compound	145/40	. Polysaccharides, e.g. cellulose
141/10	. at least one of them being an organic phosphorus-containing compound	147/00	Lubricating compositions characterised by the additive being a macromolecular compound containing halogen
141/12	. at least one of them being an organic compound containing atoms of elements not provided for in groups C10M 141/02 - C10M 141/10	147/02	. Monomer containing carbon, hydrogen and halogen only
143/00	Lubricating compositions characterised by the additive being a macromolecular hydrocarbon or such hydrocarbon modified by oxidation	147/04	. Monomer containing carbon, hydrogen, halogen and oxygen
143/02	. Polyethene	149/00	Lubricating compositions characterised by the additive being a macromolecular compound containing nitrogen
143/04	. containing propene	149/02	. Macromolecular compounds obtained by reactions only involving carbon-to-carbon unsaturated bonds
143/06	. containing butene	149/04	. . containing monomers having an unsaturated radical bound to an amino group
143/08	. containing aliphatic monomer having more than 4 carbon atoms	149/06	. . containing monomers having an unsaturated radical bound to an amido or imido group
143/10	. containing aromatic monomer, e.g. styrene	149/08	. . containing monomers having an unsaturated radical bound to a nitrile group
143/12	. containing conjugated diene	149/10	. . containing monomers having an unsaturated radical bound to a nitrogen-containing hetero ring
143/14	. containing non-conjugated diene	149/12	. Macromolecular compounds obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds
143/16	. containing cycloaliphatic monomer	149/14	. . a condensation reaction being involved
143/18	. Oxidised hydrocarbons, i.e. oxidised subsequent to macromolecular formation	149/16	. . . between the nitrogen-containing monomer and an aldehyde or ketone
145/00	Lubricating compositions characterised by the additive being a macromolecular compound containing oxygen (oxidised hydrocarbons C10M 143/18)	149/18	. . . Polyamides
145/02	. Macromolecular compounds obtained by reactions only involving carbon-to-carbon unsaturated bonds	149/20	. . . Polyureas
145/04	. . containing monomers having an unsaturated radical bound to an alcohol, aldehyde, ketonic, ether, ketal or acetal radical	149/22	. . . Polyamines
145/06	. . containing monomers having an unsaturated radical bound to an acyloxy radical of a saturated carboxylic or carbonic acid	151/00	Lubricating compositions characterised by the additive being a macromolecular compound containing sulfur, selenium or tellurium
145/08	. . . Vinyl esters of a saturated carboxylic or carbonic acid	151/02	. Macromolecular compounds obtained by reactions involving only carbon-to-carbon unsaturated bonds
145/10	. . containing monomers having an unsaturated radical bound to a carboxyl radical, e.g. acrylate	151/04	. Macromolecular compounds obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds
145/12	. . . monocarboxylic	153/00	Lubricating compositions characterised by the additive being a macromolecular compound containing phosphorus
145/14	. . . . Acrylate; Methacrylate	153/02	. Macromolecular compounds obtained by reactions involving only carbon-to-carbon unsaturated bonds
145/16	. . . polycarboxylic	153/04	. Macromolecular compounds obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds
145/18	. Macromolecular compounds obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds	155/00	Lubricating compositions characterised by the additive being a macromolecular compound containing atoms of elements not provided for in groups C10M 143/00 - C10M 153/00
145/20	. . Condensation polymers of aldehydes or ketones	155/02	. Monomer containing silicon
145/22	. . Polyesters	155/04	. Monomer containing boron
145/24	. . Polyethers		
145/26	. . . Polyoxyalkylenes		
145/28	. . . . of alkylene oxides containing 2 carbon atoms only		
145/30	. . . . of alkylene oxides containing 3 carbon atoms only		

- 157/00** Lubricating compositions characterised by the additive being a mixture of two or more macromolecular compounds covered by more than one of the main groups [C10M 143/00](#) - [C10M 155/00](#), each of these compounds being essential
- 157/02 . at least one of them being a halogen-containing compound
- 157/04 . at least one of them being a nitrogen-containing compound
- 157/06 . at least one of them being a sulfur-, selenium- or tellurium-containing compound
- 157/08 . at least one of them being a phosphorus-containing compound
- 157/10 . at least one of them being a compound containing atoms of elements not provided for in groups [C10M 157/02](#) - [C10M 157/08](#)
- 159/00** Lubricating compositions characterised by the additive being of unknown or incompletely defined constitution (carboxylic acids with less than 30 carbon atoms in the chain, of unknown or incompletely defined constitution [C10M 129/56](#))
- 159/005 . {Macromolecular compounds, e.g. macromolecular compounds composed of alternatively specified monomers not covered by the same main group}
- 159/02 . Natural products
- 159/04 . . Petroleum fractions, e.g. tars, solvents
- 159/06 . . Waxes, e.g. ozocerite, ceresine, petrolatum, slack-wax
- 159/08 . . Fatty oils
- 159/10 . . Rubber
- 159/12 . Reaction products
- 159/123 . . {obtained by phosphorus or phosphorus-containing compounds, e.g. P x S x with organic compounds}
- 159/126 . . . {with hydrocarbon polymers}
- 159/14 . . obtained by Friedel-Crafts condensation
- 159/16 . . obtained by Mannich reactions
- 159/18 . . Complexes with metals
- 159/20 . . Reaction mixtures having an excess of neutralising base, e.g. so-called overbasic or highly basic products
- 159/22 . . . containing phenol radicals
- 159/24 . . . containing sulfonic radicals
- 161/00** Lubricating compositions characterised by the additive being a mixture of a macromolecular compound and a non-macromolecular compound, each of these compounds being essential
- 163/00** Lubricating compositions characterised by the additive being a mixture of a compound of unknown or incompletely defined constitution and a non-macromolecular compound, each of these compounds being essential

NOTE

{ Compositions containing compounds covered by [C10M 159/005](#) as compounds of unknown or incompletely defined constitution are classified in [C10M 161/00](#)}

- 165/00** Lubricating compositions characterised by the additive being a mixture of a macromolecular compound and a compound of unknown or incompletely defined constitution, each of these compounds being essential

NOTE

{ Compositions containing compounds covered by [C10M 159/005](#), as compounds of unknown or incompletely defined constitution are classified in [C10M 157/00](#)}

- 167/00** Lubricating compositions characterised by the additive being a mixture of a macromolecular compound, a non-macromolecular compound and a compound of unknown or incompletely defined constitution, each of these compounds being essential

NOTE

{ Compositions containing compounds covered by [C10M 159/005](#), as compounds of unknown or incompletely defined constitution are classified in [C10M 161/00](#)}

Mixtures of base-materials, thickeners and additives

- 169/00** Lubricating compositions characterised by containing as components a mixture of at least two types of ingredient selected from base-materials, thickeners or additives, covered by the preceding groups, each of these compounds being essential
- 169/02 . Mixtures of base-materials and thickeners
- 169/04 . Mixtures of base-materials and additives
- 169/041 . . {the additives being macromolecular compounds only}
- 169/042 . . {the additives being compounds of unknown or incompletely defined constitution only}
- 169/044 . . {the additives being a mixture of non-macromolecular and macromolecular compounds}
- 169/045 . . {the additives being a mixture of compounds of unknown or incompletely defined constitution and non-macromolecular compounds}
- 169/047 . . {the additives being a mixture of compounds of unknown or incompletely defined constitution and macromolecular compounds}
- 169/048 . . {the additives being a mixture of compounds of unknown or incompletely defined constitution, non-macromolecular and macromolecular compounds}
- 169/06 . Mixtures of thickeners and additives

Compositions characterised by physical properties**NOTE**

Attention is drawn to Note (5) following the title of the subclass.

- 171/00** Lubricating compositions characterised by purely physical criteria, e.g. containing as base-material, thickener or additive, ingredients which are characterised exclusively by their numerically specified physical properties, i.e. containing ingredients which are physically well-defined but for which the chemical nature is either unspecified or only very vaguely indicated (chemically defined ingredients [C10M 101/00](#) - [C10M 169/00](#); petroleum fractions [C10M 101/02](#), [C10M 121/02](#), [C10M 159/04](#))
- 171/001 . {Electrorheological fluids; smart fluids}
 - 171/002 . {Traction fluids}
 - 171/004 . {Foam inhibited lubricant compositions}
 - 171/005 . {Volatile oil compositions; Vaporous lubricants}
 - 171/007 . {Coloured or dyes-containing lubricant compositions}
 - 171/008 . {Lubricant compositions compatible with refrigerants}
 - 171/02 . Specified values of viscosity or viscosity index
 - 171/04 . Specified molecular weight or molecular weight distribution
 - 171/06 . Particles of special shape or size

Aqueous lubricating compositions**NOTE**

Attention is drawn to Note (5) following the title of the subclass.

- 173/00** Lubricating compositions containing more than 10% water
- 173/02 . not containing mineral or fatty oils
 - 173/025 . . {for lubricating conveyor belts}

Working-up

- 175/00** Working-up used lubricants to recover useful products {(destructive distillation [C10B](#); extraction and elimination of PCBs [C10G 7/006](#), [C10G 21/006](#), [C10G 25/006](#); combustion processes [F23G](#); filtration, filters in general [B01D](#)); **Cleaning** (in a mechanical way [B08B](#); integrated processes [C23](#); solid waste [B09B](#))}
- 175/0008 . {with the use of adsorbentia}
 - 175/0016 . {with the use of chemical agents}
 - 175/0025 . {by thermal processes}
 - 175/0033 . . {using distillation processes; devices therefor}
 - 175/0041 . . {by hydrogenation processes}
 - 175/005 . {using extraction processes; apparatus therefor}
 - 175/0058 . {by filtration and centrifugation processes; apparatus therefor}
 - 175/0066 . {Use of electrical and magnetical means}
 - 175/0075 . {synthetic oil based}
 - 175/0083 . {Lubricating greases}
 - 175/0091 . {Treatment of oils in a continuous lubricating circuit (e.g. motor oil system)}
 - 175/02 . mineral-oil based
 - 175/04 . aqueous emulsion based
 - 175/06 . by ultrafiltration or osmosis

Preparation or after-treatment

- 177/00** Special methods of preparation of lubricating compositions; Chemical modification by after-treatment of components or of the whole of a lubricating composition, not covered by other classes

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- 2201/00** Inorganic compounds or elements as ingredients in lubricant compositions
- 2201/003 . used as base material
 - 2201/006 . used as thickening agents
 - 2201/02 . Water
 - 2201/022 . . Hydrogen peroxide; Oxygenated water
 - 2201/04 . Elements
 - 2201/0403 . . used as base material
 - 2201/0406 . . used as thickening agents
 - 2201/041 . . Carbon; Graphite; Carbon black
 - 2201/0413 . . . used as base material
 - 2201/0416 . . . used as thickening agents
 - 2201/042 . . . halogenated, i.e. graphite fluoride
 - 2201/0423 used as base material
 - 2201/0426 used as thickening agents
 - 2201/043 . . Sulfur; Selenium; Tellurium
 - 2201/0433 . . . used as base material
 - 2201/0436 . . . used as thickening agents
 - 2201/05 . . Metals; Alloys
 - 2201/053 . . . used as base material
 - 2201/056 . . . used as thickening agents
 - 2201/06 . Metal compounds (of chromium [C10M 2201/086](#))
 - 2201/0603 . . used as base material
 - 2201/0606 . . used as thickening agents
 - 2201/061 . . Carbides; Hydrides; Nitrides
 - 2201/0613 . . . used as base material
 - 2201/0616 . . . used as thickening agents
 - 2201/062 . . Oxides; Hydroxides; Carbonates or bicarbonates
 - 2201/0623 . . . used as base material
 - 2201/0626 . . . used as thickening agents
 - 2201/063 . . Peroxides
 - 2201/064 . . Carbonyls
 - 2201/065 . . Sulfides; Selenides; Tellurides
 - 2201/0653 . . . used as base material
 - 2201/0656 . . . used as thickening agents
 - 2201/066 . . . Molybdenum sulfide
 - 2201/0663 used as base material
 - 2201/0666 used as thickening agents
 - 2201/08 . Inorganic acids or salts thereof (of phosphorus [C10M 2201/085](#), of chromium [C10M 2201/086](#), of boron [C10M 2201/087](#); metal carbonates or bicarbonates [C10M 2201/062](#))
 - 2201/0803 . . used as base material
 - 2201/0806 . . used as thickening agent
 - 2201/081 . . containing halogen
 - 2201/082 . . containing nitrogen (nitrides [C10M 2201/061](#))
 - 2201/083 . . . nitrites
 - 2201/084 . . containing sulfur, selenium or tellurium (sulfides, tellurides, selenides [C10M 2201/065](#))
 - 2201/085 . Phosphorus oxides, acids or salts
 - 2201/0853 . . used as base material
 - 2201/0856 . . used as thickening agent
 - 2201/086 . Chromium oxides, acids or salts

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- 2201/0863 . . . used as base material
- 2201/0866 . . . used as thickening agent
- 2201/087 . . Boron oxides, acids or salts
- 2201/0873 . . . used as base material
- 2201/0876 . . . used as thickening agent
- 2201/10 . . Compounds containing silicon
- 2201/1006 . . . used as base material
- 2201/1013 . . . used as thickening agents
- 2201/102 . . . Silicates
- 2201/1023 used as base material
- 2201/1026 used as thickening agents
- 2201/103 Clays; Mica; Zeolites
- 2201/1033 used as base material
- 2201/1036 used as thickening agents
- 2201/105 . . . Silica
- 2201/1053 used as base material
- 2201/1056 used as thickening agents
- 2201/12 . . Glass
- 2201/123 . . . used as base material
- 2201/126 . . . used as thickening agents
- 2201/14 . . inorganic compounds surface treated with organic compounds
- 2201/145 . . . used as thickening agents
- 2201/16 . . Carbon dioxide
- 2201/18 . . Ammonia

2203/00 Organic non-macromolecular hydrocarbon compounds and hydrocarbon fractions as ingredients in lubricant compositions

- 2203/003 . . used as base material
- 2203/006 . . used as thickening agents
- 2203/02 . . Well-defined aliphatic compounds
- 2203/0206 . . . used as base material
- 2203/0213 . . . used as thickening agents
- 2203/022 . . . saturated
- 2203/024 . . . unsaturated
- 2203/04 . . Well-defined cycloaliphatic compounds
- 2203/045 . . . used as base material
- 2203/06 . . Well-defined aromatic compounds
- 2203/065 . . . used as base material
- 2203/10 . . Petroleum or coal fractions, e.g. tars, solvents, bitumen
- 2203/1006 . . . used as base material
- 2203/1013 . . . used as thickening agents
- 2203/102 . . . Aliphatic fractions
- 2203/1025 used as base material
- 2203/104 . . . Aromatic fractions
- 2203/1045 used as base material
- 2203/106 . . . Naphthenic fractions
- 2203/1065 used as base material
- 2203/108 . . . Residual fractions, e.g. bright stocks
- 2203/1085 used as base material

2205/00 Organic macromolecular hydrocarbon compounds or fractions, whether or not modified by oxidation as ingredients in lubricant compositions

NOTE

Copolymers are indexed with the symbol for the main monomer always being present, (e.g. [C10M 2205/026](#), [C10M 2205/022](#)) according to the last place rule, followed by the symbol

of the other monomers, (e.g. [C10M 2205/022](#), [C10M 2205/00](#))

- 2205/003 . . used as base material
- 2205/006 . . used as thickening agents
- 2205/02 . . containing acyclic monomers
- 2205/0206 . . . used as base material
- 2205/0213 . . . used as thickening agents
- 2205/022 . . . Ethene
- 2205/0225 used as base material
- 2205/024 . . . Propene
- 2205/0245 used as base material
- 2205/026 . . . Butene
- 2205/0265 used as base material
- 2205/028 . . . containing aliphatic monomers having more than four carbon atoms
- 2205/0285 used as base material
- 2205/04 . . containing aromatic monomers, e.g. styrene
- 2205/043 . . . used as base material
- 2205/046 . . . used as thickening agents
- 2205/06 . . containing conjugated dienes
- 2205/063 . . . used as base material
- 2205/066 . . . used as thickening agents
- 2205/08 . . containing non-conjugated dienes
- 2205/083 . . . used as base material
- 2205/086 . . . used as thickening agents
- 2205/10 . . containing cycloaliphatic monomers
- 2205/103 . . . used as base material
- 2205/106 . . . use as thickening agent
- 2205/12 . . Oxidised hydrocarbons, i.e. oxidised subsequent to macromolecular formation
- 2205/123 . . . used as base material
- 2205/126 . . . used as thickening agents
- 2205/14 . . Synthetic waxes, e.g. polythene waxes
- 2205/143 . . . used as base material
- 2205/146 . . . used as thickening agents
- 2205/16 . . Paraffin waxes; Petrolatum, e.g. slack wax
- 2205/163 . . . used as base material
- 2205/166 . . . used as thickening agent
- 2205/17 . . Fisher Tropsch reaction products
- 2205/173 . . . used as base material
- 2205/176 . . . used as thickening agent
- 2205/18 . . Natural waxes, e.g. ceresin, ozocerite, bees wax, carnauba; Degras
- 2205/183 . . . used as base material
- 2205/186 . . . used as thickening agents
- 2205/20 . . Natural rubber; Natural resins
- 2205/203 . . . used as base material
- 2205/206 . . . used as thickening agents
- 2205/22 . . Alkylation reaction products with aromatic type compounds, e.g. Friedel-Crafts
- 2205/223 . . . used as base material
- 2205/226 . . . use as thickening agent

2207/00 Organic non-macromolecular hydrocarbon compounds containing hydrogen, carbon and oxygen as ingredients in lubricant compositions

NOTE

In this group compounds, (e.g. phenols, succinic acid) substituted by an alkyl group derived from a polymerised olefin are not considered as macromolecular compounds

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2207/003	. used as base material	2207/129	. . . having hydrocarbon chains of thirty or more carbon atoms
2207/006	. used as thickening agents	2207/1293	. . . . used as base material
2207/02	. Hydroxy compounds	2207/1296	. . . . used as thickening agents
2207/0203	. . used as base material	2207/14	. . having carboxyl groups bound to carbon atoms of six-membered aromatic rings
2207/0206	. . used as thickening agents	2207/1403	. . . . used as base material
2207/021	. . having hydroxy groups bound to acyclic or cycloaliphatic carbon atoms	2207/1406	. . . . used as thickening agents
2207/0215	. . . used as base material	2207/141	. . . . monocarboxylic
2207/022	. . . containing at least two hydroxy groups	2207/1415	. . . . used as thickening agent
2207/0225	. . . . used as base material	2207/142	. . . . polycarboxylic
2207/023	. . having hydroxy groups bound to carbon atoms of six-membered aromatic rings	2207/1423	. . . . used as base material
2207/0235	. . . used as base material	2207/1426	. . . . used as thickening agent
2207/024	. . . having at least two phenol groups but no condensed ring	2207/144	. . . . containing hydroxy groups
2207/025	. . . with condensed rings	2207/1443	. . . . used as base material
2207/026	. . . with tertiary alkyl groups	2207/1446	. . . . used as thickening agent
2207/027	. . . Neutral salts thereof	2207/146	. . . having carboxyl groups bound to carbon atoms of six-membered aromatic rings having a hydrocarbon substituent of thirty or more carbon atoms
2207/028	. . . Overbased salts thereof	2207/1465	. . . . used as base material
2207/0285	. . . . used as base material	2207/16	. . Naphthenic acids
2207/04	. Ethers; Acetals; Ortho-esters; Ortho-carbonates	2207/163	. . . used as base material
2207/0406	. . used as base material	2207/166	. . . used as thickening agents
2207/0413	. . used as thickening agent	2207/18	. . Tall oil acids
2207/042	. . Epoxides	2207/183	. . . used as base material
2207/044	. . Cyclic ethers having four or more ring atoms, e.g. furans, dioxolanes	2207/186	. . . used as thickening agents
2207/046	. . Hydroxy ethers	2207/20	. . Rosin acids
2207/06	. Peroxides; Ozonides	2207/203	. . . used as base material
2207/08	. Aldehydes; Ketones	2207/206	. . . used as thickening agents
2207/085	. . used as base material	2207/22	. . Acids obtained from polymerised unsaturated acids
2207/09	. Metal enolates, i.e. keto-enol metal complexes	2207/223	. . . used as base material
2207/095	. . used as thickening agent	2207/226	. . . used as thickening agents
2207/10	. Carboxylic acids; Neutral salts thereof	2207/24	. . Epoxidised acids; Ester derivatives thereof
2207/103	. . used as base material	2207/243	. . . used as base material
2207/106	. . used as thickening agents	2207/246	. . . used as thickening agents
2207/12	. . having carboxyl groups bound to acyclic or cycloaliphatic carbon atoms	2207/26	. Overbased carboxylic acid salts
2207/1203	. . . used as base material	2207/2606	. . used as base material
2207/1206	. . . used as thickening agents	2207/2613	. . used as thickening agents
2207/121	. . . having hydrocarbon chains of seven or less carbon atoms	2207/262	. . derived from hydroxy substituted aromatic acids, e.g. salicylates
2207/1213	. . . . used as base material	2207/2623	. . . used as base material
2207/1216	. . . . used as thickening agent	2207/2626	. . . used as thickening agents
2207/122	. . . . monocarboxylic	2207/28	. Esters (epoxidised esters C10M 2207/24)
2207/1225	. . . . . used as thickening agent	2207/2805	. . used as base material
2207/123	. . . . polycarboxylic	2207/281	. . of (cyclo)aliphatic monocarboxylic acids
2207/1233	. . . . . used as base material	2207/2815	. . . used as base material
2207/1236	. . . . . used as thickening agent	2207/282	. . of (cyclo)aliphatic polycarboxylic acids
2207/124	. . . . containing hydroxy groups; Ethers thereof	2207/2825	. . . used as base material
2207/1245	. . . . . used as thickening agent	2207/283	. . of polyhydroxy compounds
2207/125	. . . having hydrocarbon chains of eight up to twenty-nine carbon atoms, i.e. fatty acids	2207/2835	. . . used as base material
2207/1253	. . . . . used as base material	2207/284	. . of aromatic monocarboxylic acids
2207/1256	. . . . . used as thickening agent	2207/2845	. . . used as base material
2207/126	. . . . monocarboxylic	2207/285	. . of aromatic polycarboxylic acids
2207/1265	. . . . . used as thickening agent	2207/2855	. . . used as base material
2207/127	. . . . polycarboxylic	2207/286	. . of polymerised unsaturated acids
2207/1273	. . . . . used as base material	2207/2865	. . . used as base material
2207/1276	. . . . . used as thickening agent	2207/287	. . Partial esters
2207/128	. . . . containing hydroxy groups; Ethers thereof	2207/2875	. . . used as base material
2207/1285 used as thickening agents	2207/288	. . . containing free carboxyl groups
		2207/2885 used as base material

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- 2207/289 . . . containing free hydroxy groups
- 2207/2895 . . . used as base material
- 2207/30 . . Complex esters, i.e. compounds containing at least three esterified carboxyl groups and derived from the combination of at least three different types of the following five types of compounds: monohydroxyl compounds, polyhydroxy compounds, monocarboxylic acids, polycarboxylic acids or hydroxy carboxylic acids
- 2207/301 . . . used as base material
- 2207/302 . . . derived from the combination of monocarboxylic acids, dicarboxylic acids and dihydroxy compounds only and having no free hydroxy or carboxyl groups
- 2207/3025 . . . used as base material
- 2207/304 . . . derived from the combination of monohydroxy compounds, dihydroxy compounds and dicarboxylic acids only and having no free hydroxy or carboxyl groups
- 2207/3045 . . . used as base material
- 2207/32 . . of carbonic acid
- 2207/325 . . . used as base material
- 2207/34 . . Esters having a hydrocarbon substituent of thirty or more carbon atoms, e.g. substituted succinic acid derivatives
- 2207/345 . . . used as base material
- 2207/40 . Fatty vegetable or animal oils
- 2207/401 . . used as base material
- 2207/402 . . Castor oils
- 2207/404 . . obtained from genetically modified species
- 2207/4045 . . . used as base material
- 2209/00 Organic macromolecular compounds containing oxygen as ingredients in lubricant compositions (oxidised hydrocarbons [C10M 2205/12](#))**
- 2209/003 . . used as base material
- 2209/006 . . used as thickening agents
- 2209/02 . . Macromolecular compounds obtained by reactions only involving carbon-to-carbon unsaturated bonds
- 2209/023 . . used as base material
- 2209/026 . . used as thickening agents
- 2209/04 . . containing monomers having an unsaturated radical bound to an alcohol or ester thereof; bound to an aldehyde, ketonic, ether, ketal or acetal radical
- 2209/043 . . . used as base material
- 2209/046 . . . used as thickening agents
- 2209/06 . . containing monomers having an unsaturated radical bound to an acyloxy radical of saturated carboxylic or carbonic acid
- 2209/0606 . . . used as base material
- 2209/0613 . . . used as thickening agents
- 2209/062 . . . Vinyl esters of saturated carboxylic or carbonic acids, e.g. vinyl acetate
- 2209/0625 . . . used as base material
- 2209/08 . . containing monomers having an unsaturated radical bound to a carboxyl radical, e.g. acrylate type
- 2209/0806 . . . used as base material
- 2209/0813 . . . used as thickening agents
- 2209/082 . . . monocarboxylic
- 2209/084 . . . Acrylate; Methacrylate
- 2209/0845 . . . used as base material
- 2209/086 . . . polycarboxylic, e.g. maleic acid
- 2209/0863 used as base material
- 2209/0866 used as thickening agents
- 2209/10 . . Macromolecular compounds obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds
- 2209/1003 . . . used as base material
- 2209/1006 . . . used as thickening agents
- 2209/101 . . . Condensation polymers of aldehydes or ketones and phenols, e.g. Also polyoxyalkylene ether derivatives thereof
- 2209/1013 . . . used as base material
- 2209/1016 . . . used as thickening agents
- 2209/102 . . Polyesters
- 2209/1023 . . . used as base material
- 2209/1026 . . . use as thickening agent
- 2209/103 . . Polyethers, i.e. containing di- or higher polyoxyalkylene groups
- 2209/1033 . . . used as base material
- 2209/1036 . . . used as thickening agents
- 2209/104 . . . of alkylene oxides containing two carbon atoms only
- 2209/1045 used as base material
- 2209/105 . . . of alkylene oxides containing three carbon atoms only
- 2209/1055 used as base material
- 2209/106 . . . of alkylene oxides containing four carbon atoms only
- 2209/1065 used as base material
- 2209/107 . . . of two or more specified different alkylene oxides covered by groups [C10M 2209/104](#) - [C10M 2209/106](#)
- 2209/1075 used as base material
- 2209/108 . . . etherified
- NOTE**
When applying indexing code [C10M 2209/108](#), it should be linked to the appropriate code for identifying the alkylene oxide involved, chosen from groups [C10M 2209/104](#) - [C10M 2209/107](#) and by using alpha-numerical order in the combination.
Example:
[C10M 2209/107](#) + [C10M 2209/108](#)
- 2209/1085 used as base material
- 2209/109 . . . esterified
- NOTE**
When applying indexing code [C10M 2209/109](#), it should be linked to the appropriate code for identifying the alkylene oxide involved, chosen from groups [C10M 2209/104](#) - [C10M 2209/107](#) and by using alpha-numerical order in the combination.
Example:
[C10M 2209/107](#) + [C10M 2209/109](#)
- 2209/1095 used as base material
- 2209/11 . . Complex polyesters
- 2209/1105 . . . used as base material
- 2209/111 . . . having dicarboxylic acid centres
- 2209/1115 used as base material

- 2209/112 . . . having dihydric acid centres
 2209/1125 used as base material
 2209/12 . Polysaccharides, e.g. cellulose, biopolymers
 2209/123 . . used as base material
 2209/126 . . used as thickening agents
- 2211/00 Organic non-macromolecular compounds containing halogen as ingredients in lubricant compositions**
- 2211/003 . used as base material
 2211/006 . used as thickening agents
 2211/02 . containing carbon, hydrogen and halogen only
 2211/0206 . . used as base material
 2211/0213 . . used as thickening agents
 2211/022 . . aliphatic
 2211/0225 . . . used as base material
 2211/024 . . aromatic
 2211/0245 . . . used as base material
 2211/04 . containing carbon, hydrogen, halogen, and oxygen
 2211/0406 . . used as base material
 2211/0413 . . used as thickening agents
 2211/042 . . Alcohols; Ethers; Aldehydes; Ketones
 2211/0425 . . . used as base material
 2211/044 . . Acids; Salts or esters thereof
 2211/0445 . . . used as base material
 2211/06 . Perfluorinated compounds
 2211/063 . . used as base material
 2211/066 . . used as thickening agents
 2211/08 . Halogenated waxes
 2211/083 . . used as base material
 2211/086 . . used as thickening agents
- 2213/00 Organic macromolecular compounds containing halogen as ingredients in lubricant compositions**
- 2213/003 . used as base material
 2213/006 . used as thickening agents
 2213/02 . obtained from monomers containing carbon, hydrogen and halogen only
 2213/023 . . used as base material
 2213/026 . . used as thickening agents
 2213/04 . obtained from monomers containing carbon, hydrogen, halogen and oxygen
 2213/043 . . used as base material
 2213/046 . . used as thickening agents
 2213/06 . Perfluoro polymers
 2213/0606 . . used as base material
 2213/0613 . . used as thickening agents
 2213/062 . . Polytetrafluoroethylene [PTFE]
 2213/0623 . . . used as base material
 2213/0626 . . . used as thickening agents
- 2215/00 Organic non-macromolecular compounds containing nitrogen as ingredients in lubricant compositions**
- 2215/003 . used as base material
 2215/006 . used as thickening agents
 2215/02 . Amines, e.g. polyalkylene polyamines; Quaternary amines (polyalkylene polyamines with eleven or more monomer units [C10M 2217/046](#))
 2215/023 . . used as base material
 2215/026 . . used as thickening agents
 2215/04 . . having amino groups bound to acyclic or cycloaliphatic carbon atoms
 2215/041 . . . used as base material
 2215/042 . . . containing hydroxy groups; Alkoxylated derivatives thereof
 2215/0425 used as base material
 2215/044 . . . having cycloaliphatic groups
 2215/06 . . having amino groups bound to carbon atoms of six-membered aromatic rings
 2215/061 . . . used as base material
 2215/062 . . . containing hydroxy groups bound to the aromatic ring
 2215/064 . . . Di- and triaryl amines
 2215/065 Phenyl-Naphthyl amines
 2215/066 . . . Arylene diamines
 2215/067 . . . Polyaryl amine alkanes
 2215/068 . . . having amino groups bound to polycyclic aromatic ring systems, i.e. systems with three or more condensed rings
 2215/08 . Amides
 2215/0806 . . used as base material
 2215/0813 . . used as thickening agents
 2215/082 . . containing hydroxyl groups; Alkoxylated derivatives
 2215/086 . Imides
 2215/0865 . . used as base material
 2215/10 . Amides of carbonic or haloformic acids
 2215/1006 . . used as base material
 2215/1013 . . used as thickening agents
 2215/102 . . Ureas; Semicarbazides; Allophanates
 2215/1023 . . . used as base material
 2215/1026 . . . used as thickening material
 2215/12 . Partial amides of polycarboxylic acids
 2215/121 . . used as thickening agents
 2215/122 . . Phtalamic acid
 2215/14 . Containing carbon-to-nitrogen double bonds, e.g. guanidines, hydrazones, semicarbazones
 2215/16 . Nitriles
 2215/18 . Containing nitrogen-to-nitrogen bonds, e.g. hydrazine
 2215/182 . . Azo compounds
 2215/20 . Containing nitrogen-to-oxygen bonds
 2215/202 . . containing nitro groups
 2215/204 . . containing nitroso groups
 2215/206 . . hydroxylamines
 2215/22 . Heterocyclic nitrogen compounds
 2215/2203 . . used as base material
 2215/2206 . . used as thickening agents
 2215/221 . . Six-membered rings containing nitrogen and carbon only
 2215/222 . . . Triazines
 2215/2225 used as base material
 2215/223 . . Five-membered rings containing nitrogen and carbon only
 2215/224 . . . Imidazoles
 2215/2245 used as base material
 2215/225 . . the rings containing both nitrogen and oxygen
 2215/226 . . . Morpholines
 2215/2265 used as base material
 2215/227 . . . Phthalocyanines
 2215/2275 used as thickening agents
 2215/24 . having hydrocarbon substituents containing thirty or more carbon atoms, e.g. nitrogen derivatives of substituted succinic acid
 2215/245 . . used as base material

- 2215/26 . Amines
- 2215/265 . . used as base material
- 2215/28 . Amides; Imides
- 2215/285 . . used as base material
- 2215/30 . Heterocyclic compounds
- 2215/305 . . used as base material
- 2217/00 Organic macromolecular compounds containing nitrogen as ingredients in lubricant compositions**
- 2217/003 . used as base material
- 2217/006 . used as thickening agents
- 2217/02 . Macromolecular compounds obtained from nitrogen containing monomers by reactions only involving carbon-to-carbon unsaturated bonds
- 2217/0206 . . used as base material
- 2217/0213 . . used as thickening agents
- 2217/022 . . containing monomers having an unsaturated radical bound to an amino group
- 2217/0225 . . . used as base material
- 2217/023 . . . the amino group containing an ester bond
- 2217/0235 used as base material
- 2217/024 . . containing monomers having an unsaturated radical bound to an amido or imido group
- 2217/0245 . . . used as base material
- 2217/026 . . containing monomers having an unsaturated radical bound to a nitrile group
- 2217/0265 . . . used as base material
- 2217/028 . . containing monomers having an unsaturated radical bound to a nitrogen-containing hetero ring
- 2217/0285 . . . used as base material
- 2217/04 . Macromolecular compounds from nitrogen-containing monomers obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds
- 2217/0403 . . used as base material
- 2217/0406 . . used as thickening agents
- 2217/041 . . involving a condensation reaction
- 2217/0415 . . . used as base material
- 2217/042 . . between the nitrogen-containing monomer and an aldehyde or ketone
- 2217/0425 . . . used as base material
- 2217/043 . . Mannich bases
- 2217/0435 . . . used as base material
- 2217/044 . . Polyamides
- 2217/0443 . . . used as base material
- 2217/0446 . . . used as thickening agents
- 2217/045 . . Polyureas; Polyurethanes
- 2217/0453 . . . used as base material
- 2217/0456 . . . used as thickening agents
- 2217/046 . . Polyamines, i.e. macromoleculars obtained by condensation of more than eleven amine monomers
- 2217/0465 . . . used as base material
- 2217/06 . Macromolecular compounds obtained by functionalisation of polymers with a nitrogen containing compound
- 2217/065 . . used as base material
- 2219/00 Organic non-macromolecular compounds containing sulfur, selenium or tellurium as ingredients in lubricant compositions**
- 2219/003 . used as base material
- 2219/006 . used as thickening agents
- 2219/02 . Sulfur-containing compounds obtained by sulfuration with sulfur or sulfur-containing compounds
- 2219/021 . . used as base material
- 2219/022 . . of hydrocarbons, e.g. olefines ([polyolefins C10M 2221/041](#))
- 2219/024 . . of esters, e.g. fats
- 2219/04 . containing sulfur-to-oxygen bonds, i.e. sulfones, sulfoxides
- 2219/0406 . . used as base material
- 2219/0413 . . use as thickening agent
- 2219/042 . . Sulfate esters
- 2219/044 . . Sulfonic acids, Derivatives thereof, e.g. neutral salts
- 2219/0445 . . . used as thickening agents
- 2219/046 . . Overbasedsulfonic acid salts
- 2219/0463 . . . used as base material
- 2219/0466 . . . used as thickening agents
- 2219/06 . Thio-acids; Thiocyanates; Derivatives thereof
- 2219/061 . . used as base material
- 2219/062 . . having carbon-to-sulfur double bonds
- 2219/064 . . . Thiourea type compounds
- 2219/066 . . . Thiocarbamic type compounds
- 2219/068 Thiocarbamate metal salts
- 2219/08 . Thiols; Sulfides; Polysulfides; Mercaptals
- 2219/081 . . used as base material
- 2219/082 . . containing sulfur atoms bound to acyclic or cycloaliphatic carbon atoms
- 2219/083 . . . Dibenzyl sulfide
- 2219/084 . . . containing hydroxy groups; Derivatives thereof
- 2219/085 . . . containing carboxyl groups; Derivatives thereof
- 2219/086 . . . containing sulfur atoms bound to carbon atoms of six-membered aromatic rings
- 2219/087 . . . containing hydroxy groups; Derivatives thereof, e.g. sulfurised phenols
- 2219/088 Neutral salts
- 2219/089 Overbased salts
- 2219/09 . Heterocyclic compounds containing no sulfur, selenium or tellurium compounds in the ring
- 2219/10 . Heterocyclic compounds containing sulfur, selenium or tellurium compounds in the ring
- 2219/101 . . used as base material
- 2219/102 . . containing sulfur and carbon only in the ring
- 2219/104 . . containing sulfur and carbon with nitrogen or oxygen in the ring
- 2219/106 . . . Thiadiazoles
- 2219/108 . . . Phenothiazine
- 2221/00 Organic macromolecular compounds containing sulfur, selenium or tellurium as ingredients in lubricant compositions**
- 2221/003 . used as base material
- 2221/006 . used as thickening agents
- 2221/02 . Macromolecular compounds obtained by reactions of monomers involving only carbon-to-carbon unsaturated bonds ([sulfurised polyolefins C10M 2221/041](#))
- 2221/025 . . used as base material
- 2221/04 . Macromolecular compounds obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds
- 2221/0405 . . used as base material

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- 2221/041 . . involving sulfurisation of macromolecular compounds, e.g. polyolefins
- 2221/043 . . Polyoxyalkylene ethers with a thioether group
- 2223/00 Organic non-macromolecular compounds containing phosphorus as ingredients in lubricant compositions**
- 2223/003 . used as base material
- 2223/006 . used as thickening agents
- 2223/02 . having no phosphorus-to-carbon bonds
- 2223/023 . . used as base material
- 2223/026 . . used as thickening agents
- 2223/04 . . Phosphate esters
- 2223/0405 . . . used as base material
- 2223/041 . . . Triaryl phosphates
- 2223/0415 used as base material
- 2223/042 . . . Metal salts thereof
- 2223/043 . . . Ammonium or amine salts thereof
- 2223/045 . . . Metal containing thio derivatives
- 2223/047 . . . Thioderivatives not containing metallic elements
- 2223/049 . . Phosphite
- 2223/0495 . . . used as base material
- 2223/06 . having phosphorus-to-carbon bonds
- 2223/0603 . . used as base material
- 2223/0606 . . used as thickening agents
- 2223/061 . . Metal salts
- 2223/063 . . Ammonium or amine salts
- 2223/065 . . containing sulfur
- 2223/0655 . . . used as thickening agents
- 2223/08 . having phosphorus-to-nitrogen bonds
- 2223/083 . . used as base material
- 2223/086 . . used as thickening agents
- 2223/10 . Phosphatides, e.g. lecithin, cephalin
- 2223/103 . . used as base material
- 2223/106 . . used as thickening agents
- 2223/12 . obtained by phosphorisation of organic compounds, e.g. with P_xS_y, P_xS_yHal or P_xO_y
- 2223/121 . . of alcohols or phenols
- 2225/00 Organic macromolecular compounds containing phosphorus as ingredients in lubricant compositions**
- 2225/003 . used as base material
- 2225/006 . used as thickening agents
- 2225/02 . Macromolecular compounds from phosphorus-containing monomers, obtained by reactions involving only carbon-to-carbon unsaturated bonds
- 2225/025 . . used as base material
- 2225/04 . obtained by phosphorisation of macromolecular compounds not containing phosphorus in the monomers
- 2225/0405 . . used as base material
- 2225/041 . . Hydrocarbon polymers
- 2227/00 Organic non-macromolecular compounds containing atoms of elements not provided for in groups [C10M 2203/00](#), [C10M 2207/00](#), [C10M 2211/00](#), [C10M 2215/00](#), [C10M 2219/00](#) or [C10M 2223/00](#) as ingredients in lubricant compositions**
- 2227/003 . used as base material
- 2227/006 . used as thickening agents
- 2227/02 . Esters of silicic acids
- 2227/025 . . used as base material
- 2227/04 . having a silicon-to-carbon bond, e.g. organo-silanes
- 2227/045 . . used as base material
- 2227/06 . Organic compounds derived from inorganic acids or metal salts
- 2227/0605 . . used as base material
- 2227/061 . . Esters derived from boron
- 2227/0615 . . . used as base material
- 2227/062 . . . Cyclic esters
- 2227/0625 used as base material
- 2227/063 . . Complexes of boron halides
- 2227/065 . . derived from Ti or Zr
- 2227/066 . . derived from Mo or W
- 2227/08 . having metal-to-carbon bonds ([metal complexes of unknown constitution C10M 2227/09](#))
- 2227/081 . . with a metal carbon bond belonging to a ring, e.g. ferrocene
- 2227/082 . . Pb compounds
- 2227/083 . . Sn compounds
- 2227/09 . Complexes with metals
- 2229/00 Organic macromolecular compounds containing atoms of elements not provided for in groups [C10M 2205/00](#), [C10M 2209/00](#), [C10M 2213/00](#), [C10M 2217/00](#), [C10M 2221/00](#) or [C10M 2225/00](#) as ingredients in lubricant compositions**
- 2229/003 . used as base material
- 2229/006 . used as thickening agents
- 2229/02 . Unspecified siloxanes; Silicones
- 2229/025 . . used as base material
- 2229/04 . Siloxanes with specific structure
- 2229/0405 . . used as base material
- 2229/041 . . containing aliphatic substituents
- 2229/0415 . . . used as base material
- 2229/042 . . containing aromatic substituents
- 2229/0425 . . . used as base material
- 2229/043 . . containing carbon-to-carbon double bonds
- 2229/0435 . . . used as base material
- 2229/044 . . containing silicon-to-hydrogen bonds
- 2229/0445 . . . used as base material
- 2229/045 . . containing silicon-to-hydroxyl bonds
- 2229/0455 . . . used as base material
- 2229/046 . . containing silicon-oxygen-carbon bonds
- 2229/0465 . . . used as base material
- 2229/047 . . containing alkylene oxide groups
- 2229/0475 . . . used as base material
- 2229/048 . . containing carboxyl groups
- 2229/0485 . . . used as base material
- 2229/05 . . containing atoms other than silicon, hydrogen, oxygen or carbon
- 2229/0505 . . . used as base material
- 2229/051 . . . containing halogen
- 2229/0515 used as base material
- 2229/052 . . . containing nitrogen
- 2229/0525 used as base material
- 2229/053 . . . containing sulfur
- 2229/0535 used as base material
- 2229/054 . . . containing phosphorus
- 2229/0545 used as base material
- 2290/00 Mixtures of base materials or thickeners or additives (not used, see subgroups)**
- 2290/02 . Mineral base oils; Mixtures of fractions

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- 2290/026 . Fuels
- 2290/04 . Synthetic base oils
- 2290/10 . Thickener