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:
   a. “lubricant” or “lubricating composition” includes cutting oils, hydraulic fluids, metal drawing compositions, flushing oils, slushing oils, or the like;
   b. “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 101/00 - C10M 109/02, C10M 121/00 - 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.
IPC3 groups

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/00</td>
<td>(Liquid compositions essentially based on mineral lubricating oils or fatty oils; Their use as lubricants)</td>
</tr>
<tr>
<td>1/08</td>
<td>. (with additives)</td>
</tr>
<tr>
<td>3/00</td>
<td>(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))</td>
</tr>
<tr>
<td>5/00</td>
<td>(Solid or semi-solid compositions containing as the essential lubricating ingredient mineral lubricating oils or fatty oils and their use)</td>
</tr>
<tr>
<td>7/00</td>
<td>(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))</td>
</tr>
</tbody>
</table>

Base-Materials

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>101/00</td>
<td>Lubricating compositions characterised by the base-material being a mineral or fatty oil (containing more than 10% water C10M 173/00)</td>
</tr>
<tr>
<td>101/02</td>
<td>. Petroleum fractions</td>
</tr>
<tr>
<td>101/025</td>
<td>. (waxes)</td>
</tr>
<tr>
<td>101/04</td>
<td>. Fatty oil fractions</td>
</tr>
<tr>
<td>103/00</td>
<td>Lubricating compositions characterised by the base-material being an inorganic material (containing more than 10% water C10M 173/00)</td>
</tr>
<tr>
<td>103/02</td>
<td>. Carbon; Graphite</td>
</tr>
<tr>
<td>103/04</td>
<td>. Metals; Alloys</td>
</tr>
<tr>
<td>103/06</td>
<td>. Metal compounds</td>
</tr>
<tr>
<td>105/00</td>
<td>Lubricating compositions characterised by the base-material being a non-macromolecular organic compound</td>
</tr>
<tr>
<td>105/02</td>
<td>. Well-defined hydrocarbons (petroleum fractions C10M 101/02)</td>
</tr>
<tr>
<td>105/04</td>
<td>. aliphatic</td>
</tr>
<tr>
<td>105/06</td>
<td>. aromatic</td>
</tr>
<tr>
<td>105/08</td>
<td>. containing oxygen</td>
</tr>
<tr>
<td>105/10</td>
<td>. having hydroxy groups bound to acyclic or cycloaliphatic carbon atoms</td>
</tr>
<tr>
<td>105/12</td>
<td>. monohydroxy</td>
</tr>
<tr>
<td>105/14</td>
<td>. polyhydroxy</td>
</tr>
<tr>
<td>105/16</td>
<td>. having hydroxy groups bound to a carbon atom of a six-membered aromatic ring</td>
</tr>
<tr>
<td>105/18</td>
<td>. Ethers, e.g. epoxides</td>
</tr>
<tr>
<td>105/20</td>
<td>. Aldehydes; Ketones</td>
</tr>
<tr>
<td>105/22</td>
<td>. Carboxylic acids or their salts</td>
</tr>
<tr>
<td>105/24</td>
<td>. having only one carboxyl group bound to an acyclic carbon atom, cycloaliphatic carbon atom or hydrogen</td>
</tr>
<tr>
<td>105/26</td>
<td>. having more than one carboxyl group bound to an acyclic carbon atom or cycloaliphatic carbon atom</td>
</tr>
<tr>
<td>105/28</td>
<td>. having only one carboxyl group bound to a carbon atom of a six-membered aromatic ring</td>
</tr>
<tr>
<td>105/30</td>
<td>. having more than one carboxyl group bound to a carbon atom of a six-membered aromatic ring</td>
</tr>
<tr>
<td>105/32</td>
<td>. Esters</td>
</tr>
<tr>
<td>105/34</td>
<td>. of monocarboxylic acids</td>
</tr>
<tr>
<td>105/36</td>
<td>. of polycarboxylic acids</td>
</tr>
<tr>
<td>105/38</td>
<td>. of polyhydroy compounds</td>
</tr>
<tr>
<td>105/40</td>
<td>. containing free hydroxy or carboxyl groups</td>
</tr>
<tr>
<td>105/42</td>
<td>. 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: monohydrroxy compounds, polyhydroxy compounds, monocarboxylic acids, polycarboxylic acids and hydroxy carboxylic acids</td>
</tr>
<tr>
<td>105/44</td>
<td>. . . . derived from the combination of monocarboxylic acids, dicarboxylic acids and dihydroxy compounds only and having no free hydroxy or carboxyl groups</td>
</tr>
<tr>
<td>105/46</td>
<td>. . . . derived from the combination of monohydrroxy compounds, dihydroxy compounds and dicarboxylic acids only and having no free hydroxy or carboxyl groups</td>
</tr>
<tr>
<td>105/48</td>
<td>. . . of carboxonic acid</td>
</tr>
<tr>
<td>105/50</td>
<td>. containing halogen</td>
</tr>
<tr>
<td>105/52</td>
<td>. containing carbon, hydrogen and halogen only</td>
</tr>
<tr>
<td>105/525</td>
<td>. . . (halogenated waxes)</td>
</tr>
<tr>
<td>105/54</td>
<td>. containing carbon, hydrogen, halogen and oxygen</td>
</tr>
<tr>
<td>105/56</td>
<td>. containing nitrogen</td>
</tr>
<tr>
<td>105/58</td>
<td>. Amines, e.g. polyalkylene polyamines, quaternary amines (polyalkylene polyamines with eleven or more monomer units C10M 107/44)</td>
</tr>
<tr>
<td>105/60</td>
<td>. . . having amino groups bound to an acyclic or cycloaliphatic carbon atom</td>
</tr>
<tr>
<td>105/62</td>
<td>. . . containing hydroxy groups</td>
</tr>
<tr>
<td>105/64</td>
<td>. . . having amino groups bound to a carbon atom of a six-membered aromatic ring</td>
</tr>
<tr>
<td>105/66</td>
<td>. . . containing hydroxy groups</td>
</tr>
</tbody>
</table>
Base-Materials

105/68 . . Amides; Imides
105/70 . . as ring hetero atom
105/72 . containing sulfur, selenium or tellurium
105/74 . containing phosphorus
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 dienes
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; Polysters; 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)
Thickeners

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
119/10 . containing monomers having an unsaturated radical bound to an acyloxy radical of a saturated carboxylic or carboxonic acid
119/12 . containing monomers having an unsaturated radical bound to a carboxyl radical, e.g. acrylate
119/14 . Macromolecular compounds obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds
119/16 . Condensation polymers of aldehydes or ketones; Polysters; Polyethers
119/18 . Polyoxyalkylenes
119/20 . Polysaccharides, e.g. cellulose
119/22 . containing halogen
119/24 . containing nitrogen
119/26 . containing sulfur
119/28 . containing phosphorus
119/30 . containing atoms of elements not provided for in groups C10M 119/02 - C10M 119/28

121/00 Lubricating compositions characterised by the thickener being a compound of unknown or incompletely defined constitution
121/02 . Petroleum fractions, e.g. tars
121/04 . Reaction products

123/00 Lubricating compositions characterised by the thickener being a mixture of two or more compounds covered by more than one of the main groups C10M 113/00 - C10M 121/00, each of these compounds being essential (inorganic materials coated with organic compounds C10M 113/16)
123/02 . at least one of them being a non-macromolecular compound
123/04 . at least one of them being a macromolecular compound
123/06 . at least one of them being a compound of the type covered by group C10M 121/00

Additives

125/00 Lubricating compositions characterised by the additive being an inorganic material
125/02 . Carbon; Graphite
125/04 . Metals; Alloys
125/06 . Sulfur
125/08 . Metal carbides or hydrides
125/10 . Metal oxides, hydroxides, carbonates or bicarbonates
125/12 . Metal carbonyls
125/14 . Water (aqueous lubricating compositions containing more than 10% water C10M 173/00)
125/16 . Hydrogen peroxide; Oxygenated water
125/18 . Compounds containing halogen
125/20 . Compounds containing nitrogen
125/22 . Compounds containing sulfur, selenium or tellurium
125/24 . Compounds containing phosphorus, arsenic or antimony
125/26 . Compounds containing silicon or boron, e.g. silica, sand
125/28 . Glass
125/30 . Clay

127/00 Lubricating compositions characterised by the additive being a non-macromolecular hydrocarbon (petroleum fractions C10M 159/04)
127/02 . well-defined aliphatic
127/04 . well-defined aromatic
127/06 . Alkylated aromatic hydrocarbons

129/00 Lubricating compositions characterised by the additive being an organic non-macromolecular compound containing oxygen
129/02 . having a carbon chain of less than 30 atoms
129/04 . Hydroxy compounds
129/06 . having hydroxy groups bound to acylic or cycloaliphatic carbon atoms
129/08 . containing at least 2 hydroxy groups
129/10 . having hydroxy groups bound to a carbon atom of a six-membered aromatic ring
129/12 . with condensed rings
129/14 . containing at least 2 hydroxy groups
129/16 . Ethers
129/18 . Epoxides
129/20 . Cyclic ethers having 4 or more ring atoms, e.g. furans, dioxlolanes
129/22 . Peroxides; Ozonides
129/24 . Aldehydes; Ketones
129/26 . Carboxylic acids; Salts thereof
129/28 . having carboxyl groups bound to acylic or cycloaliphatic carbon atoms
129/30 . having 7 or less carbon atoms
129/32 . monocarboxylic
129/34 . polycarboxylic
129/36 . containing hydroxy groups
129/38 . having 8 or more carbon atoms
129/40 . monocarboxylic
129/42 . polycarboxylic
129/44 . containing hydroxy groups
129/46 . cycloaliphatic
129/48 . having carboxyl groups bound to a carbon atom of a six-membered aromatic ring
129/50 . monocarboxylic
129/52 . polycarboxylic
129/54 . containing hydroxy groups
129/56 . Acids of unknown or incompletely defined constitution
129/58 . Naphthenic acids
129/60 . Tall oil acids
129/62 . Rosin acids
129/64 . Acids obtained from polymerised unsaturated acids
129/66 . Epoxidised acids or esters
129/68 . Esters (epoxidised C10M 129/66)
129/70 . of monocarboxylic acids
129/72 . of polycarboxylic acids
129/74 . of polyhydroxy compounds
129/76 . containing free hydroxy or carboxyl groups
Additives

129/78 . . . 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, hydroxy carboxylic acids

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 carboxylic 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; Allophanes

133/22 . . . containing a carbon-to-nitrogen double bond, e.g. guanidines, hydrazines, 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

135/18 . . . thiocarbamic type, e.g. containing the groups

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

CPC - 2020.05
Additives

143/00 Lubricating compositions characterised by the additive being a macromolecular compound containing atoms of elements not provided for in groups C10M 125/00 - C10M 139/00, each of these compounds being essential
143/02 . Esters of silicon acids
143/04 . having a silicon-to-carbon bond, e.g. silanes
143/06 . 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
141/02 . at least one of them being an organic oxygen-containing compound
141/04 . at least one of them being an organic halogen-containing compound
141/06 . at least one of them being an organic nitrogen-containing compound
141/08 . at least one of them being an organic sulfur-, selenium- or tellurium-containing compound
141/10 . at least one of them being an organic phosphorus-containing compound
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

143/00 Lubricating compositions characterised by the additive being a macromolecular hydrocarbon or such hydrocarbon modified by oxidation
143/02 . Polyethylene
143/04 . containing propene
143/06 . containing butene
143/08 . containing aliphatic monomer having more than 4 carbon atoms
143/10 . containing aromatic monomer, e.g. styrene
143/12 . containing conjugated diene
143/14 . containing non-conjugated diene
143/16 . containing cycloaliphatic monomer
143/18 . Oxidised hydrocarbons, i.e. oxidised subsequent to macromolecular formation

145/00 Lubricating compositions characterised by the additive being a macromolecular compound containing oxygen (oxidised hydrocarbons C10M 143/18)
145/02 . Macromolecular compounds obtained by reactions only involving carbon-to-carbon unsaturated bonds
145/04 . containing monomers having an unsaturated radical bound to an alcohol, aldehyde, ketonic, ether, ketal or acetal radical
145/06 . containing monomers having an unsaturated radical bound to an acyloxy radical of a saturated carboxylic or carbonic acid
145/08 . Vinyl esters of a saturated carboxylic or carbonic acid
145/10 . containing monomers having an unsaturated radical bound to a carboxyl radical, e.g. acrylate
145/12 . monocarboxylic
145/14 . Acrylate; Methacrylate
145/16 . polycarboxylic

145/18 . Macromolecular compounds obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds
145/20 . Condensation polymers of aldehydes or ketones
145/22 . Polymesters
145/24 . Polyethers
145/26 . Polyoxalkylenes
145/28 . . . of alkylene oxides containing 2 carbon atoms only
145/30 . . . of alkylene oxides containing 3 carbon atoms only
145/32 . . . of alkylene oxides containing 4 or more carbon atoms
145/34 . . . of two or more specified different types
145/36 . . . etherified
145/38 . . . esterified
145/40 . Polysaccharides, e.g. cellulose

147/00 Lubricating compositions characterised by the additive being a macromolecular compound containing halogen
147/02 . Monomer containing carbon, hydrogen and halogen only
147/04 . Monomer containing carbon, hydrogen, halogen and oxygen

149/00 Lubricating compositions characterised by the additive being a macromolecular compound containing nitrogen
149/02 . Macromolecular compounds obtained by reactions only involving carbon-to-carbon unsaturated bonds
149/04 . containing monomers having an unsaturated radical bound to an amino group
149/06 . containing monomers having an unsaturated radical bound to an amido or imido group
149/08 . containing monomers having an unsaturated radical bound to a nitrile group
149/10 . containing monomers having an unsaturated radical bound to a nitrogen-containing hetero ring
149/12 . Macromolecular compounds obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds
149/14 . a condensation reaction being involved
149/16 . between the nitrogen-containing monomer and an aldehyde or ketone
149/18 . Polyamides
149/20 . Polyureas
149/22 . Polyanimes

151/00 Lubricating compositions characterised by the additive being a macromolecular compound containing sulfur, selenium or tellurium
151/02 . Macromolecular compounds obtained by reactions involving only carbon-to-carbon unsaturated bonds
151/04 . Macromolecular compounds obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds

153/00 Lubricating compositions characterised by the additive being a macromolecular compound containing phosphorus
153/02 . Macromolecular compounds obtained by reactions involving only carbon-to-carbon unsaturated bonds
153/04 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

155/02 Monomer containing silicon

155/04 Monomer containing boron

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]
171/002 . Specified values of viscosity or viscosity index
171/004 . Specified molecular weight or molecular weight distribution
171/006 . 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 magnetic 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

2201/00 Inorganic compounds or elements as ingredients in lubricant compositions

2201/003 . used as base material
2201/006 . used as thickening agents
2201/002 . Water
2201/0022 . . Hydrogen peroxide; Oxygenated water
2201/004 . Elements
2201/00403 . . used as base material
2201/00406 . . used as thickening agents
2201/0041 . . Carbon; Graphite; Carbon black
2201/00413 . . used as base material
2201/00416 . . used as thickening agents
2201/0042 . . halogenated, i.e. graphite fluoride
2201/00423 . . . used as base material
2201/00426 . . . used as thickening agents
2201/0043 . . Sulfur; Selenium; Tellurium
2201/00433 . . . used as base material
2201/00436 . . . used as thickening agents
2201/005 . . Metals; Alloys
2201/0053 . . . used as base material
2201/0056 . . . used as thickening agents
2201/006 . . Metal compounds (of chromium C10M 2201/086)
2201/00603 . . . used as base material
2201/00606 . . . used as thickening agents
2201/0061 . . Carbides; Hydrides; Nitrides
2201/00613 . . . used as base material
2201/00616 . . . used as thickening agents
2201/0062 . . Oxides; Hydroxides; Carbonates or bicarbonates
2201/00623 . . . used as base material
2201/00626 . . . used as thickening agents
2201/0063 . . Peroxides
2201/0064 . . Carboxyls
2201/0065 . . Sulfides; Selenides; Tellurides
2201/00653 . . . used as base material
2201/00656 . . . used as thickening agents
2201/0066 . . Molybdenum sulfide
2201/00663 . . . used as base material
2201/00666 . . . used as thickening agents
2201/008 . . 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)
2201/00803 . . used as base material
2201/00806 . . . used as thickening agent
2201/0081 . . containing halogen
2201/0082 . . . containing nitrogen (nitrides C10M 2201/061)
2201/0083 . . . nitriles
2201/0084 . . . containing sulfur, selenium or tellurium (sulfides, tellurides, selenides C10M 2201/065)
2201/0085 . . Phosphorus oxides, acids or salts
2201/00853 . . . used as base material
2201/00856 . . . used as thickening agent
2201/0086 . . Chromium oxides, acids or salts
### Organic non-macromolecular hydrocarbon compounds and hydrocarbon fractions as ingredients in lubricant compositions

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

### Organic macro-molecular 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)

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

### 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
C01M

2207/003 . . . used as base material
2207/006 . . . used as thickening agents
2207/02 . . . Hydroxy compounds
2207/02/03 . . . used as base material
2207/02/06 . . . used as thickening agents
2207/02/21 . . . having hydroxy groups bound to acyclic or cycloaliphatic carbon atoms
2207/02/15 . . . used as base material
2207/02/22 . . . containing at least two hydroxy groups
2207/02/23 . . . having hydroxy groups bound to carbon atoms of six-membered aromatic rings
2207/02/35 . . . used as base material
2207/02/24 . . . having at least two phenol groups but no condensed ring
2207/02/25 . . . with condensed rings
2207/02/26 . . . with tertiary alkyl groups
2207/02/27 . . . Neutral salts thereof
2207/02/28 . . . Overbased salts thereof
2207/02/28/5 . . . used as base material
2207/02/04 . . . Ethers; Acetals; Ortho-esters; Ortho-carbonates
2207/04/06 . . . used as base material
2207/04/13 . . . used as thickening agent
2207/04/2 . . . Epoxides
2207/04/44 . . . Cyclic ethers having four or more ring atoms, e.g. furans, dioxolanes
2207/04/46 . . . Hydroxy ethers
2207/06 . . . Peroxides; Ozonides
2207/08 . . . Aldehydes; Ketones
2207/08/5 . . . used as base material
2207/09/5 . . . Metal enolates, i.e. keto-enol metal complexes
2207/09/5 . . . used as thickening agent
2207/10 . . . Carboxylic acids; Neutral salts thereof
2207/10/3 . . . used as base material
2207/10/6 . . . used as thickening agents
2207/12 . . . having carboxyl groups bound to acyclic or cycloaliphatic carbon atoms
2207/12/03 . . . used as base material
2207/12/06 . . . used as thickening agents
2207/12/11 . . . having hydroxy groups bound to acyclic or cycloaliphatic carbon atoms
2207/12/11/3 . . . used as base material
2207/12/16 . . . used as thickening agent
2207/12/2 . . . monocarboxylic
2207/12/25 . . . used as thickening agent
2207/12/23 . . . polycarboxylic
2207/12/33 . . . used as base material
2207/12/36 . . . used as thickening agent
2207/12/24 . . . containing hydroxy groups; Ethers thereof
2207/12/24/5 . . . used as thickening agent
2207/12/25 . . . having hydrocarbon chains of eight up to twenty-nine carbon atoms, i.e. fatty acids
2207/12/25/3 . . . used as base material
2207/12/26 . . . used as thickening agent
2207/12/26 . . . monocarboxylic
2207/12/26/5 . . . used as thickening agent
2207/12/27 . . . polycarboxylic
2207/12/27/3 . . . used as base material
2207/12/27/6 . . . used as thickening agent
2207/12/28 . . . containing hydroxy groups; Ethers thereof
2207/12/28/5 . . . used as thickening agents
2207/12/9 . . . having hydrocarbon chains of thirty or more carbon atoms
2207/12/93 . . . used as base material
2207/12/96 . . . used as thickening agents
2207/14 . . . having carboxyl groups bound to carbon atoms of six-membered aromatic rings
2207/14/03 . . . used as base material
2207/14/06 . . . used as thickening agents
2207/14/1 . . . monocarboxylic
2207/14/15 . . . used as thickening agent
2207/14/2 . . . polycarboxylic
2207/14/23 . . . used as base material
2207/14/26 . . . used as thickening agent
2207/14/44 . . . containing hydroxy groups
2207/14/44/3 . . . used as base material
2207/14/44/6 . . . used as thickening agent
2207/14/46 . . . having carboxyl groups bound to carbon atoms of six-membered aromatic rings having a hydrocarbon substituent of thirty or more carbon atoms
2207/14/65 . . . used as base material
2207/16 . . . Naphthenic acids
2207/16/3 . . . used as base material
2207/16/66 . . . used as thickening agents
2207/18 . . . Tall oil acids
2207/18/3 . . . used as base material
2207/18/66 . . . used as thickening agents
2207/20 . . . Rosin acids
2207/20/3 . . . used as base material
2207/20/66 . . . used as thickening agents
2207/22 . . . Acids obtained from polymerised unsaturated acids
2207/22/23 . . . used as base material
2207/22/26 . . . used as thickening agents
2207/24 . . . Epoxidised acids; Ester derivatives thereof
2207/24/3 . . . used as base material
2207/24/66 . . . used as thickening agents
2207/26 . . . Overbased carboxylic acid salts
2207/26/06 . . . used as base material
2207/26/13 . . . used as thickening agents
2207/26/26 . . . derived from hydroxy substituted aromatic acids, e.g. salicylates
2207/26/23 . . . used as base material
2207/26/26 . . . used as thickening agents
2207/28 . . . Esters (epoxidised esters C10M 2207/24)
2207/28/05 . . . used as base material
2207/28/1 . . . of (cyclo)aliphatic monocarboxylic acids
2207/28/15 . . . used as base material
2207/28/2 . . . of (cyclo)aliphatic oleylcarboxylic acids
2207/28/25 . . . used as base material
2207/28/3 . . . of polyhydroxy compounds
2207/28/35 . . . used as base material
2207/28/4 . . . of aromatic monocarboxylic acids
2207/28/45 . . . used as base material
2207/28/5 . . . of aromatic poly-carboxylic acids
2207/28/55 . . . used as base material
2207/28/6 . . . of polymerised unsaturated acids
2207/28/65 . . . used as base material
2207/28/7 . . . Partial esters
2207/28/75 . . . used as base material
2207/28/8 . . . containing free carboxyl groups
2207/28/85 . . . used as base material
Organic macromolecular compounds containing oxygen as ingredients in lubricant compositions (oxidised hydrocarbons C10M 2205/12)

- containing free hydroxy groups
- used as base material
- used as thickening agents

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: monohydroxy compounds, polyhydroxy compounds, monocarboxylic acids, polycarboxylic acids or hydroxy carboxylic acids

- used as base material
- derived from the combination of monocarboxylic acids, dicarboxylic acids and dihydroxy compounds only and having no free hydroxy or carboxyl groups
- used as base material
- derived from the combination of monohydroxy compounds, dihydroxy compounds and dicarboxylic acids only and having no free hydroxy or carboxyl groups
- used as base material
- of carbonic acid
- used as base material
- Fatty vegetable or animal oils
- Castor oils
- obtained from genetically modified species
- used as base material

2209/00

Organic macromolecular compounds containing oxygen as ingredients in lubricant compositions (oxidised hydrocarbons C10M 2205/12)

- used as base material
- used as thickening agents
- Macromolecular compounds obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds
- used as base material
- used as thickening agents
- Condensation polymers of aldehydes or ketones and phenols, e.g. Also polyoxyalkylene ether derivatives thereof
- used as base material
- used as thickening agents
- Polyesters
- Polyesters, i.e. containing di- or higher polyoxyalkylene groups
- used as base material
- used as thickening agents
- of alkylene oxides containing two carbon atoms only
- used as base material
- of alkylene oxides containing three carbon atoms only
- used as base material
- of alkylene oxides containing four carbon atoms only
- used as base material
- of two or more specified different alkylene oxides covered by groups C10M 2209/104 - C10M 2209/106
- used as base material
- 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

- used as base material
- 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

- used as base material
- Complex polyesters
- having dicarboxylic acid centres
- used as base material
Organic non-macromolecular compounds containing halogen as ingredients in lubricant compositions

Organic macromolecular compounds containing halogen as ingredients in lubricant compositions

Organic non-macromolecular compounds containing nitrogen as ingredients in lubricant compositions
Organic macromolecular compounds containing sulfur as ingredients in lubricant compositions

Organic non-macromolecular compounds containing sulfur, selenium or tellurium as ingredients in lubricant compositions
Organic non-macromolecular compounds containing phosphorus as ingredients in lubricant compositions

- having phosphorus-carbon bonds
- having phosphorus-to-carbon bonds
- having no phosphorus-to-carbon bonds
- containing phosphorus
- containing atoms other than carbon, hydrogen, oxygen or carbon
- containing sulfur
- containing phosphorus
- containing nitrogen
- containing halogen
- containing oxygen or carbon
- containing atoms of elements not provided for in groups C10M 2203/00, C10M 2207/00, C10M 2213/00, C10M 2217/00, C10M 2221/00 or C10M 2225/00 as ingredients in lubricant compositions

Organic macromolecular compounds containing phosphorus as ingredients in lubricant compositions

- used as base material
- used as thickening agents
- having phosphorus-carbon bonds
- containing phosphorus
- containing sulfur
- containing phosphorus
- containing nitrogen
- containing halogen
- containing carbon-to-carbon double bonds
- containing aromatic substituents
- containing carbon-to-carbon double bonds
- containing carbon-to-hydrogen bonds
- containing silicon-to-hydroxyl bonds
- containing silicon-carbon bonds
- containing alkylene oxide groups
- containing carboxyl groups
- containing metal-to-carbon bonds
- containing no phosphorus-to-carbon bonds
- containing hydroxyl groups
- containing carboxyl groups
- containing phosphorus
- containing halogen
- containing nitrogen
- containing sulfur
- containing metal-to-carbon bonds
- containing no phosphorus-to-carbon bonds
- containing hydroxyl groups
- containing carboxyl groups
- containing phosphorus
- containing halogen
- containing nitrogen
- containing sulfur
- containing metal-to-carbon bonds
- containing no phosphorus-to-carbon bonds
- containing hydroxyl groups
- containing carboxyl groups
- containing phosphorus
- containing halogen
- containing nitrogen
- containing sulfur
- containing metal-to-carbon bonds
- containing no phosphorus-to-carbon bonds
- containing hydroxyl groups
- containing carboxyl groups
- containing phosphorus
- containing halogen
- containing nitrogen
- containing sulfur
- containing metal-to-carbon bonds
- containing no phosphorus-to-carbon bonds
- containing hydroxyl groups
- containing carboxyl groups
- containing phosphorus

Mixtures of base materials or thickeners or additives

- Mineral base oils; Mixtures of fractions
- Esters of silicic acids
- used as base material
- having a silicon-to-carbon bond, e.g. organo-silanes
- used as base material
- Organic compounds derived from inorganic acids or metal salts
- used as base material
- Esters derived from boron
- used as base material
- Cyclic esters
- used as base material
- Complexes of boron halides
- derived from Ti or Zr
- derived from Mo or W
- having metal-to-carbon bonds (metal complexes of unknown constitution C10M 2227/09)
- with a metal carbon bond belonging to a ring, e.g. ferrocene
- Pb compounds
- Sn compounds
- Complexes with metals

Organic non-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

- used as base material
- used as thickening agents
- Unspecified siloxanes; Silicones
- used as base material
- Siloxanes with specific structure
- used as base material
- containing aliphatic substituents
- containing aromatic substituents
- containing carbon-to-carbon double bonds
- containing silicon-to-carbon double bonds
- containing silicon-to-hydrogen bonds
- containing silicon-to-hydroxyl bonds
- containing silicon-carbon bonds
- containing alkylene oxide groups
- containing carboxyl groups
- containing metal-to-carbon bonds
- containing no phosphorus-to-carbon bonds
- containing hydroxyl groups
- containing carboxyl groups
- containing phosphorus
- containing halogen
- containing nitrogen
- containing sulfur
- containing metal-to-carbon bonds
- containing no phosphorus-to-carbon bonds
- containing hydroxyl groups
- containing carboxyl groups
- containing phosphorus
- containing halogen
- containing nitrogen
- containing sulfur
- containing metal-to-carbon bonds
- containing no phosphorus-to-carbon bonds
- containing hydroxyl groups
- containing carboxyl groups
- containing phosphorus
- containing halogen
- containing nitrogen
- containing sulfur
- containing metal-to-carbon bonds
- containing no phosphorus-to-carbon bonds
- containing hydroxyl groups
- containing carboxyl groups
- containing phosphorus

- used as base material
- containing halogen
- used as base material
- containing nitrogen
- used as base material
- containing sulfur
- used as base material
- containing phosphorus
- used as base material
2290/026. Fuels
2290/04. Synthetic base oils
2290/10. Thickener