

CPC COOPERATIVE PATENT CLASSIFICATION

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.
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

- 1/00** {Liquid compositions essentially based on mineral lubricating oils or fatty oils; Their use as lubricants}
- 1/08 . {with additives}
- 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](#))}
- 5/00** {Solid or semi-solid compositions containing as the essential lubricating ingredient mineral lubricating oils or fatty oils and their use}
- 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](#))}

- 105/24 . . . having only one carboxyl group bound to an acyclic carbon atom, cycloaliphatic carbon atom or hydrogen
- 105/26 . . . having more than one carboxyl group bound to an acyclic carbon atom or cycloaliphatic carbon atom
- 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
- 105/32 . . Esters
- 105/34 . . . of monocarboxylic acids
- 105/36 . . . of polycarboxylic acids
- 105/38 . . . of polyhydroxy compounds
- 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](#))
- 101/02 . Petroleum fractions
- 101/025 . . {waxes}
- 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](#))
- 103/02 . Carbon; Graphite
- 103/04 . Metals; Alloys
- 103/06 . Metal compounds
- 105/00** Lubricating compositions characterised by the base-material being a non-macromolecular organic compound
- 105/02 . Well-defined hydrocarbons (petroleum fractions [C10M 101/02](#))
- 105/04 . . aliphatic
- 105/06 . . aromatic
- 105/08 . containing oxygen
- 105/10 . . having hydroxy groups bound to acyclic or cycloaliphatic carbon atoms
- 105/12 . . . monohydroxy
- 105/14 . . . polyhydroxy
- 105/16 . . having hydroxy groups bound to a carbon atom of a six-membered aromatic ring
- 105/18 . . Ethers, e.g. epoxides
- 105/20 . . Aldehydes; Ketones
- 105/22 . . Carboxylic acids or their salts

- 105/44 derived from the combination of monocarboxylic acids, dicarboxylic acids and dihydroxy compounds only and having no free hydroxy or carboxyl groups
- 105/46 derived from the combination of monohydroxy compounds, dihydroxy compounds and dicarboxylic acids only and having no free hydroxy or carboxyl groups
- 105/48 . . . of carbonic acid
- 105/50 . containing halogen
- 105/52 . . containing carbon, hydrogen and halogen only
- 105/525 . . . {halogenated waxes}
- 105/54 . . containing carbon, hydrogen, halogen and oxygen
- 105/56 . containing nitrogen
- 105/58 . . Amines, e.g. polyalkylene polyamines, quaternary amines (polyalkylene polyamines with eleven or more monomer units [C10M 107/44](#))
- 105/60 . . . having amino groups bound to an acyclic or cycloaliphatic carbon atom
- 105/62 containing hydroxy groups
- 105/64 . . . having amino groups bound to a carbon atom of a six-membered aromatic ring
- 105/66 containing hydroxy groups
- 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 . . Polyethene
- 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 diens
- 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**

A thickener is an agent which solidifies other liquid components to form a grease (solid lubricants consisting of solid components [C10M 101/00](#) - [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
- 119/10 . . . containing monomers having an unsaturated radical bound to an acyloxy radical of a saturated carboxylic or carbonic 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; Polyesters; Polyethers	129/06	. . . having hydroxy groups bound to acyclic or cycloaliphatic carbon atoms
119/18	. . . . Polyoxyalkylenes	129/08	. . . . containing at least 2 hydroxy groups
119/20	. . Polysaccharides, e.g. cellulose	129/10	. . . having hydroxy groups bound to a carbon atom of a six-membered aromatic ring
119/22	. containing halogen	129/12	. . . . with condensed rings
119/24	. containing nitrogen	129/14	. . . . containing at least 2 hydroxy groups
119/26	. containing sulfur	129/16	. . Ethers
119/28	. containing phosphorus	129/18	. . . Epoxides
119/30	. containing atoms of elements not provided for in groups C10M 119/02 - C10M 119/28	129/20	. . . Cyclic ethers having 4 or more ring atoms, e.g. furans, dioxolanes
121/00	Lubricating compositions characterised by the thickener being a compound of unknown or incompletely defined constitution	129/22	. . Peroxides; Ozonides
121/02	. Petroleum fractions, e.g. tars	129/24	. . Aldehydes; Ketones
121/04	. Reaction products	129/26	. . Carboxylic acids; Salts thereof
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)	129/28	. . . having carboxyl groups bound to acyclic or cycloaliphatic carbon atoms
123/02	. at least one of them being a non-macromolecular compound	129/30	. . . . having 7 or less carbon atoms
123/04	. at least one of them being a macromolecular compound	129/32	. . . . . monocarboxylic
123/06	. at least one of them being a compound of the type covered by group C10M 121/00	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
		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 carbonic acid
		129/86	. having a carbon chain of 30 or more atoms
		129/88	. . Hydroxy compounds
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		

- 129/90 . . . 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

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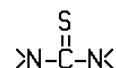
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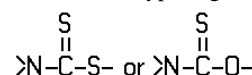
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Lubricating compositions characterised by the additive being an organic non-macromolecular compound containing sulfur, selenium or tellurium

- . Sulfurised compounds
- . . Hydrocarbons
- . . Esters, e.g. fats
- . containing a sulfur-to-oxygen bond
- . . Sulfonic acids or derivatives thereof
- . Thio-acids; Thiocyanates; Derivatives thereof
- . . having a carbon-to-sulfur double bond
- . . . thiourea type, i.e. containing the group



- . . . thiocarbamic type, e.g. containing the groups



- . Thiols; Sulfides; Polysulfides
- . . containing sulfur atoms bound to acyclic or cycloaliphatic carbon atoms
- . . . containing hydroxy groups; Derivatives thereof
- . . . containing carboxyl groups; Derivatives thereof
- . . containing sulfur atoms bound to a carbon atom of a six-membered aromatic ring
- . . . containing hydroxy groups; Derivatives thereof
- . Heterocyclic sulfur, selenium or tellurium compounds
- . . the ring containing sulfur and carbon only
- . . the ring containing sulfur and carbon with nitrogen or oxygen

Lubricating compositions characterised by the additive being an organic non-macromolecular compound containing phosphorus

- . having no phosphorus-to-carbon bond
- . . Phosphate esters
- . . . Metal salts
- . . . Ammonium or amine salts
- . . . Thio derivatives
- {not containing metal}
- . having a phosphorus-to-carbon bond
- . . containing sulfur
- . having a phosphorus-to-nitrogen bond

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](#)

- . Esters of silicon acids
- . having a silicon-to-carbon bond, e.g. silanes
- . having a metal-to-carbon bond (metal complexes of unknown constitution [C10M 159/18](#))

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

- . at least one of them being an organic oxygen-containing compound
- . at least one of them being an organic halogen-containing compound

141/06	<ul style="list-style-type: none"> at least one of them being an organic nitrogen-containing compound 	147/02	<ul style="list-style-type: none"> Monomer containing carbon, hydrogen and halogen only
141/08	<ul style="list-style-type: none"> at least one of them being an organic sulfur-, selenium- or tellurium-containing compound 	147/04	<ul style="list-style-type: none"> Monomer containing carbon, hydrogen, halogen and oxygen
141/10	<ul style="list-style-type: none"> at least one of them being an organic phosphorus-containing compound 	149/00	Lubricating compositions characterised by the additive being a macromolecular compound containing nitrogen
141/12	<ul style="list-style-type: none"> at least one of them being an organic compound containing atoms of elements not provided for in groups C10M 141/02 - C10M 141/10 	149/02	<ul style="list-style-type: none"> Macromolecular compounds obtained by reactions only involving carbon-to-carbon unsaturated bonds
143/00	Lubricating compositions characterised by the additive being a macromolecular hydrocarbon or such hydrocarbon modified by oxidation	149/04	<ul style="list-style-type: none"> containing monomers having an unsaturated radical bound to an amino group
143/02	<ul style="list-style-type: none"> Polyethylene 	149/06	<ul style="list-style-type: none"> containing monomers having an unsaturated radical bound to an amido or imido group
143/04	<ul style="list-style-type: none"> containing propene 	149/08	<ul style="list-style-type: none"> containing monomers having an unsaturated radical bound to a nitrile group
143/06	<ul style="list-style-type: none"> containing butene 	149/10	<ul style="list-style-type: none"> containing monomers having an unsaturated radical bound to a nitrogen-containing hetero ring
143/08	<ul style="list-style-type: none"> containing aliphatic monomer having more than 4 carbon atoms 	149/12	<ul style="list-style-type: none"> Macromolecular compounds obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds
143/10	<ul style="list-style-type: none"> containing aromatic monomer, e.g. styrene 	149/14	<ul style="list-style-type: none"> a condensation reaction being involved
143/12	<ul style="list-style-type: none"> containing conjugated diene 	149/16	<ul style="list-style-type: none"> between the nitrogen-containing monomer and an aldehyde or ketone
143/14	<ul style="list-style-type: none"> containing non-conjugated diene 	149/18	<ul style="list-style-type: none"> Polyamides
143/16	<ul style="list-style-type: none"> containing cycloaliphatic monomer 	149/20	<ul style="list-style-type: none"> Polyureas
143/18	<ul style="list-style-type: none"> Oxidised hydrocarbons, i.e. oxidised subsequent to macromolecular formation 	149/22	<ul style="list-style-type: none"> Polyamines
145/00	Lubricating compositions characterised by the additive being a macromolecular compound containing oxygen (oxidised hydrocarbons C10M 143/18)	151/00	Lubricating compositions characterised by the additive being a macromolecular compound containing sulfur, selenium or tellurium
145/02	<ul style="list-style-type: none"> Macromolecular compounds obtained by reactions only involving carbon-to-carbon unsaturated bonds 	151/02	<ul style="list-style-type: none"> Macromolecular compounds obtained by reactions involving only carbon-to-carbon unsaturated bonds
145/04	<ul style="list-style-type: none"> containing monomers having an unsaturated radical bound to an alcohol, aldehyde, ketonic, ether, ketal or acetal radical 	151/04	<ul style="list-style-type: none"> Macromolecular compounds obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds
145/06	<ul style="list-style-type: none"> containing monomers having an unsaturated radical bound to an acyloxy radical of a saturated carboxylic or carbonic acid 	153/00	Lubricating compositions characterised by the additive being a macromolecular compound containing phosphorus
145/08	<ul style="list-style-type: none"> Vinyl esters of a saturated carboxylic or carbonic acid 	153/02	<ul style="list-style-type: none"> Macromolecular compounds obtained by reactions involving only carbon-to-carbon unsaturated bonds
145/10	<ul style="list-style-type: none"> containing monomers having an unsaturated radical bound to a carboxyl radical, e.g. acrylate 	153/04	<ul style="list-style-type: none"> Macromolecular compounds obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds
145/12	<ul style="list-style-type: none"> monocarboxylic 	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
145/14	<ul style="list-style-type: none"> Acrylate; Methacrylate 	155/02	<ul style="list-style-type: none"> Monomer containing silicon
145/16	<ul style="list-style-type: none"> polycarboxylic 	155/04	<ul style="list-style-type: none"> Monomer containing boron
145/18	<ul style="list-style-type: none"> Macromolecular compounds obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds 	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
145/20	<ul style="list-style-type: none"> Condensation polymers of aldehydes or ketones 	157/02	<ul style="list-style-type: none"> at least one of them being a halogen-containing compound
145/22	<ul style="list-style-type: none"> Polyesters 	157/04	<ul style="list-style-type: none"> at least one of them being a nitrogen-containing compound
145/24	<ul style="list-style-type: none"> Polyethers 	157/06	<ul style="list-style-type: none"> at least one of them being a sulfur-, selenium- or tellurium-containing compound
145/26	<ul style="list-style-type: none"> Polyoxyalkylenes 	157/08	<ul style="list-style-type: none"> at least one of them being a phosphorus-containing compound
145/28	<ul style="list-style-type: none"> of alkylene oxides containing 2 carbon atoms only 		
145/30	<ul style="list-style-type: none"> of alkylene oxides containing 3 carbon atoms only 		
145/32	<ul style="list-style-type: none"> of alkylene oxides containing 4 or more carbon atoms 		
145/34	<ul style="list-style-type: none"> of two or more specified different types 		
145/36	<ul style="list-style-type: none"> etherified 		
145/38	<ul style="list-style-type: none"> esterified 		
145/40	<ul style="list-style-type: none"> Polysaccharides, e.g. cellulose 		
147/00	Lubricating compositions characterised by the additive being a macromolecular compound containing halogen		

- 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 ultra-filtration 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
- 2201/02 . 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; Selenenium; 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
- 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

- 2207/003 . used as base material
- 2207/006 . used as thickening agents
- 2207/02 . Hydroxy compounds
- 2207/0203 . . used as base material
- 2207/0206 . . used as thickening agents
- 2207/021 . . having hydroxy groups bound to acyclic or cycloaliphatic carbon atoms
- 2207/0215 . . . used as base material
- 2207/022 . . . containing at least two hydroxy groups
- 2207/0225 used as base material
- 2207/023 . . having hydroxy groups bound to carbon atoms of six-membered aromatic rings
- 2207/0235 . . . used as base material
- 2207/024 . . . having at least two phenol groups but no condensed ring
- 2207/025 . . . with condensed rings
- 2207/026 . . . with tertiary alkyl groups
- 2207/027 . . . Neutral salts thereof
- 2207/028 . . . Overbased salts thereof
- 2207/0285 used as base material
- 2207/04 . Ethers; Acetals; Ortho-esters; Ortho-carbonates
- 2207/0406 . . used as base material
- 2207/0413 . . used as thickening agent
- 2207/042 . . Epoxides

2207/044	. . Cyclic ethers having four or more ring atoms, e.g. furans, dioxolanes	2207/183	. . . used as base material
2207/046	. . Hydroxy ethers	2207/186	. . . used as thickening agents
2207/06	. Peroxides; Ozonides	2207/20	. . Rosin acids
2207/08	. Aldehydes; Ketones	2207/203	. . . used as base material
2207/085	. . used as base material	2207/206	. . . used as thickening agents
2207/09	. Metal enolates, i.e. keto-enol metal complexes	2207/22	. . Acids obtained from polymerised unsaturated acids
2207/095	. . used as thickening agent	2207/223	. . . used as base material
2207/10	. Carboxylic acids; Neutral salts thereof	2207/226	. . . used as thickening agents
2207/103	. . used as base material	2207/24	. . Epoxidised acids; Ester derivatives thereof
2207/106	. . used as thickening agents	2207/243	. . . used as base material
2207/12	. . having carboxyl groups bound to acyclic or cycloaliphatic carbon atoms	2207/246	. . . used as thickening agents
2207/1203	. . . used as base material	2207/26	. Overbaed carboxylic acid salts
2207/1206	. . . used as thickening agents	2207/2606	. . used as base material
2207/121	. . . having hydrocarbon chains of seven or less carbon atoms	2207/2613	. . used as thickening agents
2207/1213	. . . . used as base material	2207/262	. . derived from hydroxy substituted aromatic acids, e.g. salicylates
2207/1216	. . . . used as thickening agent	2207/2623	. . . used as base material
2207/122	. . . . monocarboxylic	2207/2626	. . . used as thickening agents
2207/1225	. . . . . used as thickening agent	2207/28	. Esters (epoxidised esters C10M 2207/24)
2207/123	. . . . polycarboxylic	2207/2805	. . used as base material
2207/1233	. . . . . used as base material	2207/281	. . of (cyclo)aliphatic monocarboxylic acids
2207/1236	. . . . . used as thickening agent	2207/2815	. . . used as base material
2207/124	. . . . containing hydroxy groups; Ethers thereof	2207/282	. . of (cyclo)aliphatic oolcarboxylic acids
2207/1245	. . . . . used as thickening agent	2207/2825	. . . used as base material
2207/125	. . . having hydrocarbon chains of eight up to twenty-nine carbon atoms, i.e. fatty acids	2207/283	. . of polyhydroxy compounds
2207/1253	. . . . used as base material	2207/2835	. . . used as base material
2207/1256	. . . . used as thickening agent	2207/284	. . of aromatic monocarboxylic acids
2207/126	. . . . monocarboxylic	2207/2845	. . . used as base material
2207/1265	. . . . . used as thickening agent	2207/285	. . of aromatic polycarboxylic acids
2207/127	. . . . polycarboxylic	2207/2855	. . . used as base material
2207/1273	. . . . . used as base material	2207/286	. . of polymerised unsaturated acids
2207/1276	. . . . . used as thickening agent	2207/2865	. . . used as base material
2207/128	. . . . containing hydroxy groups; Ethers thereof	2207/287	. . Partial esters
2207/1285	. . . . . used as thickening agents	2207/2875	. . . used as base material
2207/129	. . . having hydrocarbon chains of thirty or more carbon atoms	2207/288	. . . containing free carboxyl groups
2207/1293	. . . . used as base material	2207/2885	. . . . used as base material
2207/1296	. . . . used as thickening agents	2207/289	. . . containing free hydroxy groups
2207/14	. . having carboxyl groups bound to carbon atoms of six-membered aromatic rings	2207/2895	. . . . used as base material
2207/1403	. . . 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
2207/1406	. . . used as thickening agents	2207/301	. . . used as base material
2207/141	. . . monocarboxylic	2207/302	. . . derived from the combination of monocarboxylic acids, dicarboxylic acids and dihydroxy compounds only and having no free hydroxy or carboxyl groups
2207/1415	. . . . used as thickening agent	2207/3025	. . . . used as base material
2207/142	. . . polycarboxylic	2207/304	. . . derived from the combination of monohydroxy compounds, dihydroxy compounds and dicarboxylic acids only and having no free hydroxy or carboxyl groups
2207/1423	. . . . used as base material	2207/3045	. . . . used as base material
2207/1426	. . . . used as thickening agent	2207/32	. . of carbonic acid
2207/144	. . . containing hydroxy groups	2207/325	. . . used as base material
2207/1443	. . . . used as base material	2207/34	. . Esters having a hydrocarbon substituent of thirty or more carbon atoms, e.g. substituted succinic acid derivatives
2207/1446	. . . . used as thickening agent	2207/345	. . . used as base material
2207/146	. . . having carboxyl groups bound to carbon atoms of six-membered aromatic rings having a hydrocarbon substituent of thirty or more carbon atoms		
2207/1465	. . . . used as base material		
2207/16	. . Naphthenic acids		
2207/163	. . . used as base material		
2207/166	. . . used as thickening agents		
2207/18	. . Tall oil acids		

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 <u>macromolecular</u> 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	2215/1006	. . used as base material
2211/063	. . used as base material	2215/1013	. . used as thickening agents
2211/066	. . used as thickening agents	2215/102	. . Ureas; Semicarbazides; Allophanates
2211/08	. Halogenated waxes	2215/1023	. . . used as base material
2211/083	. . used as base material	2215/1026	. . . used as thickening material
2211/086	. . used as thickening agents	2215/12	. Partial amides of polycarboxylic acids
2213/00	Organic <u>macromolecular</u> compounds containing halogen as ingredients in lubricant compositions	2215/121	. . used as thickening agents
2213/003	. used as base material	2215/122	. . Phtalamic acid
2213/006	. used as thickening agents	2215/14	. Containing carbon-to-nitrogen double bonds, e.g. guanidines, hydrazones, semicarbazones
2213/02	. obtained from monomers containing carbon, hydrogen and halogen only	2215/16	. Nitriles
2213/023	. . used as base material	2215/18	. Containing nitrogen-to-nitrogen bonds, e.g. hydrazine
2213/026	. . used as thickening agents	2215/182	. . Azo compounds
2213/04	. obtained from monomers containing carbon, hydrogen, halogen and oxygen	2215/20	. Containing nitrogen-to-oxygen bonds
2213/043	. . used as base material	2215/202	. . containing nitro groups
2213/046	. . used as thickening agents	2215/204	. . containing nitroso groups
2213/06	. Perfluoro polymers	2215/206	. . hydroxylamines
2213/0606	. . used as base material	2215/22	. Heterocyclic nitrogen compounds
2213/0613	. . used as thickening agents	2215/2203	. . used as base material
2213/062	. . Polytetrafluoroethylene [PTFE]	2215/2206	. . used as thickening agents
2213/0623	. . . used as base material	2215/221	. . Six-membered rings containing nitrogen and carbon only
2213/0626	. . . used as thickening agents	2215/222	. . . Triazines
2215/00	Organic <u>non-macromolecular</u> compounds containing nitrogen as ingredients in lubricant compositions	2215/2225	. . . . used as base material
2215/003	. used as base material	2215/223	. . Five-membered rings containing nitrogen and carbon only
2215/006	. used as thickening agents	2215/224	. . . Imidazoles
2215/02	. Amines, e.g. polyalkylene polyamines; Quaternary amines (polyalkylene polyamines with eleven or more monomer units C10M 2217/046)	2215/2245	. . . . used as base material
2215/023	. . used as base material	2215/225	. . the rings containing both nitrogen and oxygen
2215/026	. . used as thickening agents	2215/226	. . . Morpholines
2215/04	. . having amino groups bound to acyclic or cycloaliphatic carbon atoms	2215/2265	. . . . used as base material
2215/041	. . . used as base material	2215/227	. . . Phthalocyanines
2215/042	. . . containing hydroxy groups; Alkoxyated derivatives thereof	2215/2275	. . . . used as thickening agents
2215/0425	. . . . used as base material	2215/24	. having hydrocarbon substituents containing <u>thirty or more carbon atoms</u> , e.g. nitrogen derivatives of substituted succinic acid
2215/044	. . . having cycloaliphatic groups	2215/245	. . used as base material
2215/06	. . having amino groups bound to carbon atoms of six-membered aromatic rings	2215/26	. Amines
2215/061	. . . used as base material	2215/265	. . used as base material
2215/062	. . . containing hydroxy groups bound to the aromatic ring	2215/28	. Amides; Imides
2215/064	. . . Di- and triaryl amines	2215/285	. . used as base material
2215/065	. . . . Phenyl-Naphthyl amines	2215/30	. Heterocyclic compounds
2215/066	. . . Arylene diamines	2215/305	. . used as base material
2215/067	. . . Polyaryl amine alkanes	2217/00	Organic <u>macromolecular</u> compounds containing nitrogen as ingredients in lubricant compositions
2215/068	. . . having amino groups bound to polycyclic aromatic ring systems, i.e. systems with three or more condensed rings	2217/003	. used as base material
2215/08	. Amides	2217/006	. used as thickening agents
2215/0806	. . used as base material	2217/02	. Macromolecular compounds obtained from nitrogen containing monomers by reactions only involving carbon-to-carbon unsaturated bonds
2215/0813	. . used as thickening agents	2217/0206	. . used as base material
2215/082	. . containing hydroxyl groups; Alkoxyated derivatives	2217/0213	. . used as thickening agents
2215/086	. Imides	2217/022	. . containing monomers having an unsaturated radical bound to an amino group
2215/0865	. . used as base material	2217/0225	. . . used as base material
2215/10	. Amides of carbonic or haloformic acids	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	2219/08	. Thiols; Sulfides; Polysulfides; Mercaptals
2217/0265	. . . used as base material	2219/081	. . . used as base material
2217/028	. . containing monomers having an unsaturated radical bound to a nitrogen-containing hetero ring	2219/082	. . containing sulfur atoms bound to acyclic or cycloaliphatic carbon atoms
2217/0285	. . . used as base material	2219/083	. . . Dibenzyl sulfide
2217/04	. Macromolecular compounds from nitrogen-containing monomers obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds	2219/084	. . . containing hydroxy groups; Derivatives thereof
2217/0403	. . used as base material	2219/085	. . . containing carboxyl groups; Derivatives thereof
2217/0406	. . used as thickening agents	2219/086	. . . containing sulfur atoms bound to carbon atoms of six-membered aromatic rings
2217/041	. . involving a condensation reaction	2219/087	. . . containing hydroxy groups; Derivatives thereof, e.g. sulfurised phenols
2217/0415	. . . used as base material	2219/088	. . . . Neutral salts
2217/042	. . between the nitrogen-containing monomer and an aldehyde or ketone	2219/089	. . . . Overbased salts
2217/0425	. . . used as base material	2219/09	. Heterocyclic compounds containing no sulfur, selenium or tellurium compounds in the ring
2217/043	. . Mannich bases	2219/10	. Heterocyclic compounds containing sulfur, selenium or tellurium compounds in the ring
2217/0435	. . . used as base material	2219/101	. . used as base material
2217/044	. . Polyamides	2219/102	. . containing sulfur and carbon only in the ring
2217/0443	. . . used as base material	2219/104	. . containing sulfur and carbon with nitrogen or oxygen in the ring
2217/0446	. . . used as thickening agents	2219/106	. . . Thiadiazoles
2217/045	. . Polyureas; Polyurethanes	2219/108	. . . Phenothiazine
2217/0453	. . . used as base material	2221/00	Organic <u>macromolecular</u> compounds containing sulfur, selenium or tellurium as ingredients in lubricant compositions
2217/0456	. . . used as thickening agents	2221/003	. used as base material
2217/046	. . Polyamines, i.e. macromoleculars obtained by condensation of more than eleven amine monomers	2221/006	. used as thickening agents
2217/0465	. . . used as base material	2221/02	. Macromolecular compounds obtained by reactions of monomers involving only carbon-to-carbon unsaturated bonds (sulfurised polyolefins C10M 2219/022)
2217/06	. Macromolecular compounds obtained by functionalisation of polymers with a nitrogen containing compound	2221/025	. . used as base material
2217/065	. . used as base material	2221/04	. Macromolecular compounds obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds
2219/00	Organic <u>non-macromolecular</u> compounds containing sulfur, selenium or tellurium as ingredients in lubricant compositions	2221/0405	. . used as base material
2219/003	. used as base material	2221/041	. . involving sulfurisation of macromolecular compounds
2219/006	. used as thickening agents	2221/043	. . Polyoxyalkylene ethers with a thioether group
2219/02	. Sulfur-containing compounds obtained by sulfurisation with sulfur or sulfur-containing compounds	2223/00	Organic <u>non-macromolecular</u> compounds containing phosphorus as ingredients in lubricant compositions
2219/021	. . used as base material	2223/003	. used as base material
2219/022	. . of hydrocarbons, e.g. sulfurised olefines and polyolefins	2223/006	. used as thickening agents
2219/024	. . of esters, e.g. fats	2223/02	. having no phosphorus-to-carbon bonds
2219/04	. containing sulfur-to-oxygen bonds, i.e. sulfones, sulfoxides	2223/023	. . used as base material
2219/0406	. . used as base material	2223/026	. . used as thickening agents
2219/0413	. . use as thickening agent	2223/04	. . Phosphate esters
2219/042	. . Sulfate esters	2223/0405	. . . used as base material
2219/044	. . Sulfonic acids, Derivatives thereof, e.g. neutral salts	2223/041	. . . Triaryl phosphates
2219/0445	. . . used as thickening agents	2223/0415	. . . . used as base material
2219/046	. . <u>Overbased</u> sulfonic acid salts	2223/042	. . . Metal salts thereof
2219/0463	. . . used as base material	2223/043	. . . Ammonium or amine salts thereof
2219/0466	. . . used as thickening agents	2223/045	. . . Metal containing thio derivatives
2219/06	. Thio-acids; Thiocyanates; Derivatives thereof	2223/047	. . . Thioderivatives not containing metallic elements
2219/061	. . used as base material	2223/049	. . Phosphite
2219/062	. . having carbon-to-sulfur double bonds	2223/0495	. . . used as base material
2219/064	. . . Thiourea type compounds	2223/06	. having phosphorus-to-carbon bonds
2219/066	. . . Thiocarbamic type compounds	2223/0603	. . used as base material
2219/068	. . . . Thiocarbamate metal salts	2223/0606	. . used as thickening agents

2223/061	. . Metal salts	2229/003	. used as base material
2223/063	. . Ammonium or amine salts	2229/006	. used as thickening agents
2223/065	. . containing sulfur	2229/02	. Unspecified siloxanes; Silicones
2223/0655	. . . used as thickening agents	2229/025	. . used as base material
2223/08	. having phosphorus-to-nitrogen bonds	2229/04	. Siloxanes with specific structure
2223/083	. . used as base material	2229/0405	. . used as base material
2223/086	. . used as thickening agents	2229/041	. . containing aliphatic substituents
2223/10	. Phosphatides, e.g. lecithin, cephalin	2229/0415	. . . used as base material
2223/103	. . used as base material	2229/042	. . containing alromatic substituents
2223/106	. . used as thickening agents	2229/0425	. . . used as base material
2223/12	. obtained by phosphorisation of organic compounds, e.g. with PxSy, PxSyHal or PxOy	2229/043	. . containing carbon-to-carbon double bonds
2223/121	. . of alcohols or phenols	2229/0435	. . . used as base material
2225/00	Organic <u>macromolecular</u> compounds containing phosphorus as ingredients in lubricant compositions	2229/044	. . containing silicon-to-hydrogen bonds
2225/003	. used as base material	2229/0445	. . . used as base material
2225/006	. used as thickening agents	2229/045	. . containing silicon-to-hydroxyl bonds
2225/02	. Macromolecular compounds from phosphorus-containing monomers, obtained by reactions involving only carbon-to-carbon unsaturated bonds	2229/0455	. . . used as base material
2225/025	. . used as base material	2229/046	. . containing silicon-oxygen-carbon bonds
2225/04	. obtained by phosphorisation of macromolecular compounds not containing phosphorus in the monomers	2229/0465	. . . used as base material
2225/0405	. . used as base material	2229/047	. . containing alkylene oxide groups
2225/041	. . Hydrocarbon polymers	2229/0475	. . . used as base material
2227/00	Organic <u>non-macromolecular</u> 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	2229/048	. . containing carboxyl groups
2227/003	. used as base material	2229/0485	. . . used as base material
2227/006	. used as thickening agents	2229/05	. . containing atoms other than silicon, hydrogen, oxygen or carbon
2227/02	. Esters of silicic acids	2229/0505	. . . used as base material
2227/025	. . used as base material	2229/051	. . . containing halogen
2227/04	. having a silicon-to-carbon bond, e.g. organo-silanes	2229/0515	. . . . used as base material
2227/045	. . used as base material	2229/052	. . . containing nitrogen
2227/06	. Organic compounds derived from inorganic acids or metal salts	2229/0525	. . . . used as base material
2227/0605	. . used as base material	2229/053	. . . containing sulfur
2227/061	. . Esters derived from boron	2229/0535	. . . . used as base material
2227/0615	. . . used as base material	2229/054	. . . containing phosphorus
2227/062	. . . Cyclic esters	2229/0545	. . . . used as base material
2227/0625	. . . . used as base material	2290/00	Mixtures of base materials or thickeners or additives (not used, see subgroups)
2227/063	. . Complexes of boron halides	2290/02	. Mineral base oils; Mixtures of fractions
2227/065	. . derived from Ti or Zr	2290/026	. Fuels
2227/066	. . derived from Mo or W	2290/04	. Synthetic base oils
2227/08	. having metal-to-carbon bonds (metal complexes of unknown constitution C10M 2227/09)	2290/10	. Thickener
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 <u>macromolecular</u> 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		