C10M

LUBRICATING COMPOSITIONS (well drilling compositions C09K 8/02); USE OF CHEMICAL SUBSTANCES EITHER ALONE OR AS LUBRICATING INGREDIENTS IN A LUBRICATING COMPOSITION (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; textile lubricating compositions D06M 11/00, D06M 13/00, D06M 15/00; immersion oils for microscopy G02B 21/33)

Definition statement

This place covers:

- Lubricant, i.e. a substance introduced to reduce friction between moving surfaces, which may be in the liquid, gaseous or solid form. The lubricating composition may be an emulsion, an aerosol, a grease, a dispersion of solid lubricants, a multi-layer coating or composite material.
- Use of at least one compound as a lubricant or in a lubricating composition.
- Working-up of used lubricants to recover useful products.
- Special method of preparation of lubricating oil compositions. Chemical after-treatment of components or the whole composition.

Lubricating compositions may have three types of essential ingredients: Base-Materials (main ingredient of the lubricating composition), Thickeners (used for preparing grease compositions) and Additives.

Additives are those chemicals used to enhance the performance characteristics of the base material where the additives are normally present in a minor amount of a fully formulated lubricating composition but can be present in a larger amount of an additive concentrate.

Relationships with other classification places

Lubricant compositions specially adapted for certain particular applications (e.g. mould release agents, well-drilling compositions, etc.) are classified in other subclasses – see the References sections below.

The use of known lubricants for relevant purposes is classified in the corresponding place, e.g. the use in harvesters or mowers is classified in A01D 69/12.

Subclass C10N is an indexing subclass associated with this subclass, and is for indexing features that are of interest in disclosures classified in this subclass, e.g. properties, uses or special modifications of lubricating compositions.

References

Limiting references

This place does not cover:

Production of hydrocarbon oils from lower carbon number hydrocarbons for lubricating purposes, e.g. by oligomerisation	C10G 50/02

Application-oriented references

Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

Mould release agents for separating metals after moulding	B22C 3/00

Mould release agents for separating plastics or substances in a plastic state, after moulding	B29C 33/56
Mould release agents for separating glass after moulding	C03B 40/02
Well-drilling compositions	C09K 8/02
Treating fibres, threads, yarns, fabrics or fibrous goods made from such materials, with inorganic substances or complexes thereof; Such treatment combined with mechanical treatment, e.g. mercerising	D06M 11/00
Treating fibres, threads, yarns, fabrics or fibrous goods made from such materials, with non-macromolecular organic compounds; Such treatment combined with mechanical treatment	D06M 13/00
Treating fibres, threads, yarns, fabrics, or fibrous goods made from such materials, with macromolecular compounds; Such treatment combined with mechanical treatment	D06M 15/00

Informative references

Attention is drawn to the following places, which may be of interest for search:

The Indexing Scheme Relating to Lubricating Compositions C10M should be considered for search.

Prevention of sticking, e.g. to backing plates	A21D 8/08
Lubricants for medical use	A61
Separation	B01D
Chemical or physical processes, catalysis, colloid chemistry	B01J
Colloidal materials or their solutions	B01J 13/00
Cooling, heating or lubricating drawing material	B21C 9/00
Mould concrete, shaping clay or other ceramic compositions	B28B 7/00
Inorganic chemistry	C01
Purification; Separation; Stabilisation; Use of additives	C07B 63/00
Acyclic or carbocyclic compounds	C07C
Heterocyclic compounds	C07D
Acyclic, carbocyclic or heterocyclic compounds containing elements other than carbon, hydrogen, halogen, oxygen, nitrogen, sulfur, selenium or tellurium	C07F
Compounds of unknown constitution	C07G
Sugars; Derivatives thereof; Nucleosides; Nucleotides; Nucleic acids	C07H
Steroids	C07J
Peptides	C07K
Macromolecular compounds obtained by reactions only involving carbon-to-carbon unsaturated bonds	C08F
Macromolecular compounds obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds	C08G
Derivatives of natural macromolecular compounds	C08H
Use of inorganic or non-macromolecular organic substances as compounding ingredients	C08K
Compositions of macromolecular compounds	C08L

Emulsifying or dispersing agents	C09K 23/00
Treatment of hydrocarbon oils or fatty oils for lubricating purposes, by methods other than cracking, reforming, refining or hydrotreatment	C10G 71/00
Liquid carbonaceous fuels comprising additives	C10L 1/10
Producing, refining or preserving fats, fatty substances, fatty oils or waxes	C11B
Fatty acids from fats, oils or waxes; fats, oils or fatty acids by chemical modification of fats, oils or fatty acids obtained therefrom	C11C
Detergent compositions	C11D
Coating metallic materials	C23C
Lubrication of machines or engines	F01M
Shafts, elements or crankshaft mechanisms	F16C
Coupling for transmitting	F16D
Pipes or joints	F16L
Lubricating devices, arrangements or systems	F16N
Immersion oils for microscope systems	G02B 21/33
Records carriers characterised by the lubricant	G11B 5/71
Insulators or insulating bodies mainly consisting of organic substances	H01B 3/18

Special rules of classification

In the absence of an indication to the contrary a compound is always classified in the last appropriate place.

When only the base material(s) is(are) essential, groups C10M 101/00 - C10M 111/00 are to be considered.

When only the thickener(s) is(are) essential, groups C10M 113/00 - C10M 123/00 are relevant.

Compositions comprising essential additive(s) are classified in groups C10M 125/00 - C10M 167/00.

Mixtures of base-materials, thickeners and additives (at least two of them being essential) are covered by C10M 169/00.

Compositions characterized by physical properties should be classified in C10M 171/00.

Aqueous compositions (more than 10% water) are in C10M 173/00.

Working-up of used lubricants is covered by C10M 175/00.

Preparation or after-treatment is covered by C10M 177/00.

Symbols chosen from subclass C10M and subclass C10N are mandatory and are used to classify additional information.

Subclass C10M is used to classify each component of the compositions, whether they are essential or not. Each of the components of the mixtures covered by groups C10M 111/00, C10M 123/00, C10M 141/00, C10M 157/00, C10M 161/00, C10M 163/00, C10M 165/00, C10M 167/00, C10M 169/00 should be classified by using the corresponding symbol. In subclass C10M the symbols are listed with respect to their chemical structure (e.g. inorganic compounds, organic hydrocarbons, organic compounds comprising H, C and O, organic compounds comprising N, organic compounds comprising P, or organic compounds comprising other atoms).

Subclass C10N is an indexing subclass associated with this subclass, and is for indexing features that are of interest in disclosures classified in this subclass, e.g. properties, uses or special modifications of lubricating compositions.

The groups C10N 2010/00 - C10N 2080/00 are used in combination with indexing codes chosen from subgroups C10M 2201/00 - C10M 2201/18 identifying the chemical nature of the compounds concerned.

Example: C10M 2201/084, C10N 2010/04: inorganic acids or salts containing sulfur, selenium or tellurium used as ingredients in lubricant compositions and wherein the metal present in the acids or salts is from group II, e.g. Mg, Ca, Ba, Zn, Cd or Hg.

Indexing Codes C10N 2020/099 - C10N 2020/106 are only used in association with group C10M 171/008 to provide information about the specific refrigerant.

Combination sets (C-Sets):

In this subclass, C-Sets classification is applied to the following groups, listed in the table below, if the document discloses a pertinent combination of technical features that cannot be covered by the allocation of a single symbol. The fourth column of the table indicates the place where the detailed information about the C-Sets construction and the associated syntax rules can be found, in the definition section under the "Special rules of classification".

C-SETS ID	BASE SYMBOLS	SUBSEQUENT SYMBOLS	C-SETS FORMULA; LOCATION OF C-SETS RULES
#C10Ma	C10M 2201/00 - C10M 2229/0545	C10N 2020/00 - C10N 2020/106, C10N 2050/00 - C10N 2060/14	(C10M, C10N); characteristic of an ingredient or salt composition, see C10M 2201/00
#C10Mb	C10M 2201/00 - C10M 2229/0545	C10N 2010/00 -C10N 2010/16	(C10M, C10N); characteristic of salt composition, see C10M 2201/00
#C10Mc	C10M 2205/00 - C10M 2205/226, C10M 2209/00 - C10M 2209/126, C10M 2213/00 - C10M 2213/0626, C10M 2217/00 - C10M 2217/065, C10M 2221/00 - C10M 2221/043, C10M 2225/00 - C10M 2225/041 and C10M 2229/00 - C10M 2229/0545	C10M 2205/00 - C10M 2205/226, C10M 2209/00 - C10M 2209/126, C10M 2213/00 - C10M 2213/0626, C10M 2217/00 - C10M 2217/065, C10M 2221/00 - C10M 2221/043, C10M 2225/00 - C10M 2225/041 and C10M 2229/00 - C10M 2229/0545	(C10M, C10M); composition of a polymer; see C10M 2205/00
#C10Md	C10M 2209/104 - C10M 2209/107	C10M 2209/108, C10M 2209/109	(C10M, C10M); identification of the alkylene oxide, see C10M 2209/104

The specific C-Sets rule is located at only one place of the base symbol in the section "Special rules of classification" in the definition. If the C-Sets rule is applicable to all groups of a subclass, it is located

at the subclass level only. If the same C-Sets rule is applicable to multiple groups or subgroups within the same subclass, the C-Sets rule is placed at the highest group or subgroup of the multiple groups.

Synonyms and Keywords

In patent documents, the word/expression in the first column is often used instead of the word/ expression in the second column, which is used in the classification scheme of this place:

"Lubricant" or "lubricating composition"	"gear oil", "engine oil", "turbine oil", "electrical oil", "refrigerator oil", "compressor oil", "metal working fluid", "chain oil", "conveyor oil", "cutting oil", "hydraulic fluid", "metal drawing compositions", "flushing oil", "slushing oil", "grease composition", "transmission fluid", "motor oil"
"thickener"	"tackifier"

C10M 101/00

Lubricating compositions characterised by the base-material being a mineral or fatty oil (containing more than 10% water C10M 173/00)

Definition statement

This place covers:

- Group I to III base oils (according to API)
- Residual fractions (bright stocks)
- Waxes

References

Limiting references

This place does not cover:

Composition containing more than 10 % water	C10M 173/00

Special rules of classification

Symbols from C10M 2203/1006 - C10M 2203/1085 and C10M 2205/163 should be additionally added.

Glossary of terms

In this place, the following terms or expressions are used with the meaning indicated:

Group I (API)	Base oil having a viscosity index of 80-120 and comprising greater than 0.03 % sulfur and/or less than 90 % saturates
Group II (API)	Base oil having a viscosity index of 80-120 and comprising 0.03 % or less sulfur and 90 % or more saturates
Group III (API)	Base oil having a viscosity index of 120 or more and comprising 0.03 % or less sulfur and 90 % or more saturates

C10M 103/00

Lubricating compositions characterised by the base-material being an inorganic material (containing more than 10% water C10M 173/00)

Definition statement

This place covers:

Lubricating compositions comprising a base-material being an inorganic material as single ingredient or a composition comprising an inorganic material, e.g.

- Graphite, carbon black
- Molybdenum sulfide
- Silicates (clays, mica, zeolithes)
- Glass

References

Limiting references

This place does not cover:

Composition containing more than 10 % water	C10M 173/00

Informative references

Attention is drawn to the following places, which may be of interest for search:

Catalysts	B01J 21/00- B01J 31/00

Special rules of classification

Symbols from C10M 2201/0403 - C10M 2201/123 are more detailed than the subgroup C10M 103/00 and are used as a subdivision thereof.

C10M 105/00

Lubricating compositions characterised by the base-material being a non-macromolecular organic compound

Definition statement

This place covers:

Lubricating compositions comprising a base-material being a non-macromolecular organic compound, as single ingredient or a composition comprising a non-macromolecular organic compound e.g.

- Esters (polyol esters, complex esters, dicarboxylic acid esters)
- Perfluoro compounds, Halogenated waxes
- Sulfurized olefines, esters, fats; sulfides or polysulfides; phosphate esters

References

Limiting references

This place does not cover:

Fischer-Tropsch base oil	C10M 107/02

Special rules of classification

Symbols from in C10M 2203/003, C10M 2207/003, C10M 2211/003, C10M 2215/003, C10M 2219/003, C10M 2223/003 and C10M 2227/003 should be additionally used.

C10M 107/00

Lubricating compositions characterised by the base-material being a macromolecular compound

Definition statement

This place covers:

Lubricating compositions comprising a base-material being a macromolecular organic compound as single ingredient or a composition comprising a macromolecular organic compound, e.g.

- Poly alpha olefins (PAO), Group IV base oils (according to API)
- Fischer-Tropsch base oils
- Polyglycols, polyethers (alkoxylated alcohols comprising 3 or more alkylene oxide units)
- Polysaccharides
- Polyesters
- Poly(meth)acrylates
- Fluoropolymers (perfluoro polyethers, PTFE)
- Polyamides
- Polysiloxanes

References

Limiting references

This place does not cover:

Mineral or fatty oil	C10M 101/00

Informative references

Attention is drawn to the following places, which may be of interest for search:

Macromolecular compounds	C08B, C08F, C08G

Special rules of classification

Symbols from C10M 2205/003, C10M 2209/003, C10M 2213/003, C10M 2217/003, C10M 2221/003, C10M 2225/003 and C10M 2229/003 should be additionally used.

Glossary of terms

In this place, the following terms or expressions are used with the meaning indicated:

Group IV	Polyalphaolefins

Synonyms and Keywords

In patent documents, the following abbreviations are often used:

GTL	Gas-To-Liquid
BTL	Biomass-To-Liquid

CTL	Coal-To-Liquid
FT	Fischer-Tropsch
EO	Ethylene Oxide
PO	Propylene Oxide
PTFE	Poly-Tetra-Fluoro-Ethylene
PAO	Polyalphaolefin

C10M 109/00

Lubricating compositions characterised by the base-material being a compound of unknown or incompletely defined constitution (C10M 101/00 takes precedence)

Definition statement

This place covers:

Lubricating compositions comprising a base-material being a compound of unknown or incompletely defined constitution as single ingredient or a composition comprising this compound, e.g.

- Natural Waxes
- Rubber

Special rules of classification

Symbols from C10M 2205/163 - C10M 2205/203 should be additionally used if necessary.

C10M 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

Definition statement

This place covers:

Mixtures of essential ingredients as base materials. The ingredients are not covered by the same above-mentioned group.

References

Limiting references

This place does not cover:

Mixtures of base oil and thickener	C10M 169/02
Mixtures of base oil and additive	C10M 169/04

C10M 113/00

Lubricating compositions characterised by the thickening agent being an inorganic material

Definition statement

This place covers:

Lubricating compositions comprising a thickening agent being an inorganic material as single ingredient or a composition comprising an inorganic material, e.g.

- Graphite, carbon black
- Silicates (clay, mica, bentonite, zeolithes)
- Glass

Special rules of classification

Symbols from C10M 2201/0406 - C10M 2201/145 and C10N 2010/00 if a metal is concerned, should be additionally used.

C10M 115/00

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

Definition statement

This place covers:

Lubricating compositions comprising a thickening agent being a non-macromolecular organic compound other than a carboxylic acid or salt thereof, as single ingredient or a composition comprising a non-macromolecular organic compound other than a carboxylic acid or salt thereof e.g

- Halogenated waxes
- Urea compound
- Phosphatides (lecithin,cephalin)
- Phosphinates

Special rules of classification

Symbols from C10M 2203/006, C10M 2207/0206 - C10M 2207/095, C10M 2211/006, C10M 2215/006, C10M 2219/006, C10M 2223/006, C10M 2227/006 should be additionally used

C10M 117/00

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

Definition statement

This place covers:

Lubricating compositions comprising a thickening agent being a non-macromolecular carboxylic acid or salt thereof, as single ingredient or a composition comprising a non-macromolecular carboxylic acid or salt thereof e.g.

Metal soaps (lithium, sodium,potassium, calcium magnesium salts)

References

Limiting references

This place does not cover:

Overbased carboxylic acid salts	C10M 121/00

Special rules of classification

Additionally, symbols from C10M 2207/106 - C10M 2207/246, and C10N 2010/00 should be used.

C10M 119/00

Lubricating compositions characterised by the thickener being a macromolecular compound

Definition statement

This place covers:

Lubricating compositions comprising a thickening agent being a macromolecular organic compound, as single ingredient or a composition comprising a macromolecular organic compound e.g

- Waxes (synthetic, petrolatum, Fischer-Tropsch, natural)
- Natural rubber, Natural resins
- Polysaccharide
- Fluoropolymer (PTFE)
- Polyureas

Special rules of classification

Symbols from C10M 2205/006, C10M 2209/006, C10M 2213/006, C10M 2217/006, C10M 2221/006, C10M 2225/006, C10M 2229/006 should be additionally used.

C10M 121/00

Lubricating compositions characterised by the thickener being a compound of unknown or incompletely defined constitution

Definition statement

This place covers:

Lubricating compositions comprising a thickener being a compound of unknown or incompletely defined constitution, e.g.

- Overbased organic salts (overbased carboxylic acid salts, overbased sulphonic acid salts)
- Petroleum or coal fractions (tars, solvents, bitumen)

Special rules of classification

Symbols from C10M 2203/1013, C10M 2207/2613, C10M 2207/2626, C10M 2219/0466 should be additionally used.

C10M 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)

Definition statement

This place covers:

Mixtures of essential ingredients as thickeners. The ingredients are not covered by the same group.

References

Limiting references

This place does not cover:

Inorganic material coated with organic compounds	C10M 113/16

C10M 125/00

Lubricating compositions characterised by the additive being an inorganic material

Definition statement

This place covers:

Lubricating compositions comprising an additive being an inorganic material, e.g.

- Graphite, carbon black
- Water (up to 10 %)
- Hydrogen peroxide
- Molybdenum sulfide

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Catalysts	B01J 21/00- B01J 31/00

Special rules of classification

Additionally, symbols from C10M 2201/02 - C10M 2201/18 and C10N 2010/00, if a metal is concerned, should be used.

C10M 127/00

Lubricating compositions characterised by the additive being a non-macromolecular hydrocarbon (petroleum fractions C10M 159/04)

Definition statement

This place covers:

Lubricating compositions comprising an additive being a non-macromolecular fractions, e.g.

- Well-defined hydrocarbons
- Alkylated aromatic hydrocarbons

References

Limiting references

This place does not cover:

Petroleum fractions	C10M 159/04

Informative references

Attention is drawn to the following places, which may be of interest for search:

Hydrocarbons	C10L 1/1608

Special rules of classification

Symbols from C10M 2203/02 - C10M 2203/06, C10M 2205/22 should be additionally used.

C10M 129/00

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

Definition statement

This place covers:

Lubricating compositions comprising an additive being an organic non-macromolecular compound containing oxygen, e.g.

- Phenolic antioxidant (di-t-butyl-methylphenol, hydroquinone, tocopherol)
- Fatty alcohol, Polyol, alkoxylated alcohols comprising up to two alkoxy groups
- Ethers, epoxides
- Fatty acids, Naphthenic acids, Tall oil acids
- Esters, complex esters

.

References

Limiting references

This place does not cover:

Vegetable oils, natural triglycerides	C10M 159/08
Overbased carboxylic acid salts	C10M 159/20
Overbased phenate salts	C10M 159/22

Informative references

Attention is drawn to the following places, which may be of interest for search:

Use of additives	C07B 63/04, C07C 7/20
Heterocyclic organic compounds	C07D

Heterocyclic organic compounds having oxygen as hetero atoms	C07D 301/00- C07D 325/00
Sugars, steroids	C07H, C07J
Antioxidant composition	C09K 15/00
Animal or vegetable oils, fats, fatty substances, waxes, fatty acids	C11B, C11C
Preserving by using additives	C11B 5/00

Special rules of classification

Compounds are classified in view of the carbon chain length. An oxygenated compound substituted with a polyolefin (e.g. polyisobutylene) is considered a non-macromolecular compound. Compounds with a carbon chain of less than 30 atoms are to be classified in the subgroup C10M 129/02. Compounds with a carbon chain of 30 or more atoms are to be classified in the subgroup C10M 129/86.

Symbols from C10M 2207/02 - C10M 2207/34 should be additionally used.

C10M 131/00

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

Definition statement

This place covers:

Lubricating compositions comprising an additive being an organic non-macromolecular compound containing halogen, e.g.

- Halogenated waxes
- Perfluoro-compounds
- Chlorinated paraffins

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Fuel additives containing halogen	C10L 1/20

Special rules of classification

Symbol C10M 2211/00 should be additionally used

C10M 133/00

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

Definition statement

This place covers:

Lubricating compositions comprising an additive being an organic non-macromolecular compound containing nitrogen, e.g.

- Nitrogen dispersant (PIB-substituted succinimide, PIB-substituted amine, ammonium compounds, polyetheramine containing up to 10 monomers)

- Aminic antioxidants (PANA, DPA, phenylene diamine)
- Salicylidene diamine
- Imidazoline derivatives, oxazolines, triazoles, imidazoles

References

Limiting references

This place does not cover:

Thiazole compounds	C10M 135/36
Phenothiazine compounds	C10M 135/36
Polyetheramine containing 11 or more monomers	C10M 149/12

Informative references

Attention is drawn to the following places, which may be of interest for search:

Use of additives	C07B 63/04, C07C 7/20
Antioxidant composition	C09K 15/00
Fuel additives containing nitrogen	C10L 1/22
Preserving by using additives	C11B 5/00

Special rules of classification

Compounds are classified in view of the carbon chain length. A nitrogen compound substituted with a polyolefin (e.g. polyisobutylene) is considered a non-macromolecular compound. Compounds with a carbon chain of less than 30 atoms are to be classified in the subgroup C10M 133/02. Compounds with a carbon chain of 30 or more atoms are to be classified in the subgroup C10M 133/52. Symbol C10M 2215/00 should be additionally used.

Synonyms and Keywords

In patent documents, the following abbreviations are often used:

PANA	Poly-alpha-naphthyl-amine
DPA	Di-phenyl-amine
PIBSA	Poly-isobutylene-succinic-anhydride

C10M 135/00

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

Definition statement

This place covers:

Lubricating compositions comprising an additive being an organic non-macromolecular compound containing sulphur, selenium or tellurium, e.g.

- Sulfurized compounds (olefin, ester, fat)
- Sulfonic acid salts (anticorrosion)
- Dithiocarbamic acid salt (friction modifier, antiwear agent).
- Sulfide or polysulfide (extreme pressure additives).

- Thiadiazole derivatives, phenothiazine derivative

References

Limiting references

This place does not cover:

Sulfurized polyolefins	C10M 153/04
Overbased sulfurized phenol salts	C10M 159/22
Overbased sulfonic acid salts	C10M 159/24

Informative references

Attention is drawn to the following places, which may be of interest for search:

Fuel additives containing sulfur, selenium, tellerium	C10L 1/24

Special rules of classification

Symbol in C10M 2219/00 should be additionally used.

C10M 137/00

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

Definition statement

This place covers:

Lubricating compositions comprising an additive being an organic non-macromolecular compound containing phosphorous, e.g.

- Phosphates, phosphites, dithiophosphates
- Phosphonates
- Phospholipids (lecithin)
- Phosphosulfrized terpene

References

Limiting references

This place does not cover:

Overbased phophonate salts	C10M 159/20

Informative references

Attention is drawn to the following places, which may be of interest for search:

Fuel additives containing phosphorus	C10L 1/26

Special rules of classification

Symbol in C10M 2223/00 should be additionally used.

C10M 139/00

Lubricating compositions characterised by the additive being an organic non-macromolecular compound containing atoms of elements not provided for in groups C10M 127/00 - C10M 137/00

Definition statement

This place covers:

Lubricating compositions comprising an additive being an organic non-macromolecular compound containing atoms of elements not provided for in groups C10M 127/00 - C10M 137/00, e.g.

- Silane derivatives
- Borate esters.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Fuel additives containing silicon	C10L 1/28

Special rules of classification

Symbol in C10M 2227/00 should be additionally used.

C10M 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

Definition statement

This place covers:

Compositions comprising at least 2 different essential additives, each of the additives being in a different main group.

C10M 143/00

Lubricating compositions characterised by the additive being a macromolecular hydrocarbon or such hydrocarbon modified by oxidation

Definition statement

This place covers:

Lubricating compositions comprising an additive being a macromolecular hydrocarbon or such hydrocarbon modified by oxidation, e.g.

- Olefin polymer or copolymer
- Polybutene or polyisobutylene
- Polystyrene
- Fischer-Tropsch compounds

References

Limiting references

This place does not cover:

Natural resin	C10M 159/02
Natural waxes	C10M 159/06
Natural rubber	C10M 159/10

Informative references

Attention is drawn to the following places, which may be of interest for search:

Polymers of unsaturated hydrocarbons	C08F 10/00, C08F 12/00, C08F 36/00, C08F 38/00, C08F 110/00, C08F 112/00, C08F 136/00, C08F 138/00, C08F 210/00, C08F 212/00, C08F 236/00, C08F 238/00, C08F 240/00
Macromolecular hydrocarbons obtained otherwise than by involving C to C unsaturated bonds	C08G 10/00, C08G 61/00
Macromolecular hydrocarbons	C10L 1/1625

Special rules of classification

Symbol in C10M 2205/00 should be additionally used.

C10M 145/00

Lubricating compositions characterised by the additive being a macromolecular compound containing oxygen (oxidised hydrocarbons C10M 143/18)

Definition statement

This place covers:

Lubricating compositions comprising an additive being a macromolecular compound containing oxygen, e.g.

- Poly(meth)acrylate,
- EVA
- Polyether
- Polysaccharide

References

Limiting references

This place does not cover:

PIB-substituted succinic acid/anhydride	C10M 129/93

PIB-substituted succinate	C10M 129/95
Oxidised hydrocarbons	C10M 143/18

Informative references

Attention is drawn to the following places, which may be of interest for search:

Macromolecular compounds	C08B, C08F, C08G
Macromolecular compounds	C10L 1/192

Special rules of classification

Symbol in C10M 2209/00 should be additionally used.

Synonyms and Keywords

In patent documents, the following abbreviations are often used:

EVA	Ethylene Vinyl Acetate

C10M 147/00

Lubricating compositions characterised by the additive being a macromolecular compound containing halogen

Definition statement

This place covers:

Lubricating compositions comprising an additive being a macromolecular compound containing halogen, e.g.

- PTFE
- Perfluoro polyethers

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Macromolecular compounds	C10L 1/206

Special rules of classification

Symbol in C10M 2213/00 should be additionally used.

C10M 149/00

Lubricating compositions characterised by the additive being a macromolecular compound containing nitrogen

Definition statement

This place covers:

Lubricating compositions comprising an additive being a macromolecular compound containing nitrogen, e.g.

- Polymer or copolymer of vinylpyrrolidone
- Polymer functionalized with a nitrogen containing compound.
- Polyetheramine containing 11 or more monomers

References

Limiting references

This place does not cover:

PIB-substituted amine	C10M 133/54
PIB-substituted succinimide	C10M 133/56

Informative references

Attention is drawn to the following places, which may be of interest for search:

Macromolecular compounds	C08F, C08G
Macromolecular compounds	C10L 1/234

Special rules of classification

C10M 2217/00 should be additionally used.

C10M 151/00

Lubricating compositions characterised by the additive being a macromolecular compound containing sulfur, selenium or tellurium

Definition statement

This place covers:

Lubricating compositions comprising an additive being a macromolecular compound containing sulphur, selenim or tellurium, e.g.

Sulfurized polyolefins

Polyoxyalkylene ethers with a thioether group

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Macromolecular compounds	C10L 1/2462

Special rules of classification

Symbol in C10M 2221/00 should be additionally used.

C10M 153/00

Lubricating compositions characterised by the additive being a macromolecular compound containing phosphorus

Definition statement

This place covers:

Lubricating compositions comprising an additive being a macromolecular compound containing phosphorous, e.g. compounds obtained by phosphorisation of macromolecular compounds

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Macromolecular compounds	C08G 77/00, C08L 83/00
Macromolecular compounds	C10L 1/2666

Special rules of classification

Symbol in C10M 2225/00 should be additionally used.

C10M 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

Definition statement

This place covers:

Lubricating compositions comprising an additive being a macromolecular compound containing atoms of elements not provided for in groups C10M 143/00 - C10M 153/00, e.g.

- Silicones
- Siloxanes

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Macromolecular compounds	C10L 1/285

Special rules of classification

Symbol in C10M 2229/00 should be additionally added.

C10M 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

Definition statement

This place covers:

Compositions comprising at least 2 different essential macromolecular additives, each of the additives being in a different main group.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Mixture of macromolecular compounds as fuel additives	C10L 1/146

C10M 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)

Definition statement

This place covers:

Lubricating compositions comprising an additive being an additive being of unknown or incompletely defined by constitution, e.g.

- Macromolecular compounds composed of specified monomers and representing a large number of alternatives, e.g. 6 alternatives
- Natural products
- Complexes with metals
- Reaction products. Overbased detergents (phosphonates, sulfonates, phenates, carboxylates, salicylates)

References

Limiting references

This place does not cover:

Carboxylic acids with less than 30 carbon atoms in the chain of unknown or incompletely defined consititution	C10M 129/56

Informative references

Attention is drawn to the following places, which may be of interest for search:

Natural rubbers	C10L 1/1675

Special rules of classification

Symbol in C10M 2205/00, C10M 2209/00, C10M 2213/00, C10M 2217/00, C10M 2221/00, C10M 2225/00, C10M 2229/00, C10M 2207/028, C10M 2207/26, C10M 2207/262, C10M 2219/046, C10M 2219/089, C10M 2223/061, C10M 2227/09 should be additionally used.

Glossary of terms

In this place, the following terms or expressions are used with the meaning indicated:

Overbased	a stoichiometric excess of metal present over that required to neutralize the anion of the salt

Synonyms and Keywords

In patent documents, the following abbreviations are often used:

TBN	Total Base Number

C10M 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

Definition statement

This place covers:

Compositions comprising at least 2 different essential additives,one falling within the groups C10M 125/00-C10M 139/00, the other falling within the groups C10M 143/00-C10M 155/00 or the subgroup C10M 159/005.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Mixtures of organic macromolecular compounds and organic non-macromolecular compounds	C10L 1/143

C10M 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

Definition statement

This place covers:

Compositions comprising at least 2 different essential additives, one falling within the groups C10M 125/00-C10M 139/00, the other falling within the subgroups C10M 159/02 - C10M 159/24

C10M 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

Definition statement

This place covers:

Compositions comprising at least 2 different essential additives, one falling within the groups C10M 143/00-C10M 155/00 or the subgroup C10M 159/005, the other falling within the subgroups C10M 159/02 - C10M 159/24.

C10M 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

Definition statement

This place covers:

Compositions comprising at least 3 different essential additives, one being a compound falling within the groups C10M 125/00-C10M 139/00, the second falling within the groups C10M 143/00-C10M 155/00 or the subgroup C10M 159/005, the third falling within the subgroups C10M 159/02 - C10M 159/24.

C10M 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

Definition statement

This place covers:

Compositions comprising at least 2 different essential ingredients:

- 1 base oil and 1 thickener;
- 1 base oil and 1 additive;
- 1 additive and 1 thickener.

Special rules of classification

A mixture comprising a base oil, a thickener and an additive, each of them being essential is classified in C10M 169/00. All components should also be classified in groups C10M 2201/00 - C10M 2229/0545 as appropriate.

C10M 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)

Definition statement

This place covers:

Lubricating compositions characterised only by physical properties, e.g.

- Electrorheological fluids
- Traction fluids
- Volatile oil, vaporous lubricants, spray
- Coloured, dyes-containing or marker-containing lubricants
- Lubricant compatible with refrigerants
- Composition comprising ionic liquids or liquid crystals

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Heat transfer, exchange	C09K 5/00
Liquid crystals	C09K 19/00

Special rules of classification

Ionic liquids or liquid crystals are classified in C10M 171/00. Symbol in C10N 2020/00 and in C10N 2030/00, generally, are to be associated with this group.

C10M 173/00

Lubricating compositions containing more than 10% water

Definition statement

This place covers:

Lubricating compositions with more than 10% of water, e.g.

- Metal working fluids
- Conveyor lubricant compositions

Special rules of classification

Each of the components should be classified by using the symbol referred to in the above groups.

C10M 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)}

Definition statement

This place covers:

All the processes for recovering useful products from used lubricants.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Distillation	B01D 3/00
Treatment of liquids with solid sorbents	B01D 15/00
Filtration	B01D 39/00
Membrane	B01D 63/00
Catalytic processes, e.g. triglyceride or fatty acid subjected to catalytic reaction to produce fuel, lubricant	B01J
Solid sorbent compositions	B01J 20/00
Cleaning in a mechanical way	B08B
Cleaning solid wastes	B09B
Water treatment	C02F
Destructive distillation	C10B
Extraction and elimination of PCBs	C10G 7/006, C10G 21/006, C10G 25/006
Chemical surface treatment	C23C
Combustion processes	F03G

C10M 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

Definition statement

This place covers:

- Specific processes to prepare a lubricating composition
- After-treament of a component or a composition

For specific composition of lubricant made from biomaterial, e.g. garbage, sludge, animal fat, vegetable oils, groups C10M 105/00, C10M 107/00 for the oil base, C10M 115/00 - C10M 119/00 for the thickener and C10M 159/02 for the additive are used for classification.

C10M 2201/00

Inorganic compounds or elements as ingredients in lubricant compositions

Special rules of classification

C-sets classification:

C-Sets statement: #C10Ma, #C10Mb

Combinations of symbols chosen from C10M, C10N are used in a C-set for classifying a specific ingredient having a specific parameter. A Group III base oil (base oil having a viscosity index of 120 or more and comprising 0.03 % or less sulfur and 90% or more saturates) is classified with C10M 2203/1025, C10N 2020/02.

A specific salt may be indexed by using a combination of symbols chosen from C10M, C10N in a C-set. A neutral calcium sulfonate is classified as (C10M 2219/044, C10N 2010/04).

- In groups C10M 2201/00 - C10M 2229/0545, characteristics of an ingredient or composition of a salt are classified in the form of C-Sets.
- In #C10Ma, the base symbol, representing an ingredient, is taken from the groups C10M 2201/00 - C10M 2229/0545, whereas the subsequent symbol(s) representing the characteristics of the ingredient is (are) taken from C10N 2020/00 - C10N 2020/106, C10N 2050/00 - C10N 2060/14.
- In #C10Mb, the base symbol, representing the ionic portion of a metal salt, is taken from the groups C10M 2201/00 - C10M 2229/0545, whereas the subsequent symbol representing the metal is taken from C10N 2010/00 - C10N 2010/16.

C-Sets syntax rules:

- C-Set of #C10Ma and #C10Mb shall contain at least two symbols.
- Duplicate subsequent symbols are allowed in these C-Sets.
- In these C-Sets the symbols are arranged in alphanumerical order.

C-Sets examples:

- #C10Ma: A Group III base oil (base oil having a viscosity index of 120 or more and comprising 0.03 % or less sulfur and 90% or more saturates) is classified as (C10M 2203/1025, C10N 2020/02).
- #C10Mb: A neutral calcium sulfonate is classified as (C10M 2219/044, C10N 2010/04).

C10M 2201/06

Metal compounds

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Chromium oxides, acids or salts	C10M 2201/086

C10M 2201/08

Inorganic acids or salts thereof

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Oxides; Hydroxides; Carbonates or bicarbonates	C10M 2201/062
Phosphorus oxides, acids or salts	C10M 2201/085
Chromium oxides, acids or salts	C10M 2201/086
Boron oxides, acids or salts	C10M 2201/087

C10M 2201/082

containing nitrogen

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Carbides; Hydrides; Nitrides	C10M 2201/061

C10M 2201/084

containing sulfur, selenium or tellurium

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Sulfides; Selenides; Tellurides	C10M 2201/065

C10M 2203/00

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

Special rules of classification

C-sets classification:

In this group, C-Sets (#C10Ma, #C10Mb) are used. The detailed information about the C-Sets construction and the associated syntax rules are found in the "Special rules of classification" in C10M 2201/00.

C10M 2205/00

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

Special rules of classification

C-sets classification:

In this group, C-Sets (#C10Ma, #C10Mb, #C10Mc) are used. The detailed information about the C-Sets construction and the associated syntax rules are found in the "Special rules of classification" in C10M 2201/00 or below.

C-Sets statement: #C10Mc

Combinations of symbols chosen from C10M, C10N are used in a C-set for classifying well-defined polymers. A polymer of ethylene and acrylate may be classified as (C10M 2205/022, C10M 2209/084), using the alphanumerical order.

- In groups C10M 2205/00, C10M 2209/00, C10M 2213/00, C10M 2217/00, C10M 2221/00, C10M 2225/00 and C10M 2229/00 polymers of lubricant compositions are classified in the form of C-Sets according to each constituent.
- In #C10Mc, the base symbol is taken from the groups C10M 2205/00 -C10M 2205/226, C10M 2209/00 - C10M 2209/126, C10M 2213/00 -C10M 2213/0626, C10M 2217/00 - C10M 2217/065, C10M 2221/00 - C10M 2221/043, C10M 2225/00 - C10M 2225/041 and C10M 2229/00 - C10M 2229/0545, whereas the subsequent symbol(s) is (are) taken from C10M 2205/00 - C10M 2205/226, C10M 2209/00 - C10M 2209/126, C10M 2213/00 - C10M 2213/0626, C10M 2217/00 - C10M 2217/065, C10M 2221/00 - C10M 2221/043, C10M 2225/00 - C10M 2225/041 and C10M 2229/00 - C10M 2229/0545.

C-Sets syntax rules:

- C-Set of #C10Mc shall contain at least two symbols.
- Duplicate subsequent symbols are allowed in these C-Sets.
- In these C-Sets the symbols are arranged in alphanumeric order.

C-Sets examples:

- #C10Mc: A polymer of ethylene and acrylate is classified as (C10M 2205/022, C10M 2209/084).

C10M 2207/00

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

Special rules of classification

C-sets classification:

In this group, C-Sets (#C10Ma, #C10Mb) are used. The detailed information about the C-Sets construction and the associated syntax rules are found in the "Special rules of classification" in C10M 2201/00.

C10M 2207/28

Esters

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Epoxidised acids; Ester derivatives thereof	C10M 2207/24

C10M 2209/00

Organic macromolecular compounds containing oxygen as ingredients in lubricant compositions

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Oxidised hydrocarbons, i.e. oxidised subsequent to macromolecular formation	C10M 2205/12

Special rules of classification

C-sets classification:

In this group, C-Sets (#C10Ma, #C10Mb, #C10Mc) are used. The detailed information about the C-Sets construction and the associated syntax rules are found in the "Special rules of classification" in C10M 2201/00 and C10M 2205/00.

C10M 2209/104

of alkylene oxides containing two carbon atoms only

Special rules of classification

C-sets classification:

C-Sets statement: #C10Md

Combinations of symbols chosen from C10M, C10M are used in a C-set for identifying the alkylene oxide of the polyethers etherified or esterified.

- In #C10Md, the base symbol, representing a type of alkylene oxide, is taken from the groups C10M 2209/104 - C10M 2209/107, whereas the subsequent symbol representing the characteristics of the polyethers etherified or esterified is taken from C10M 2209/108 or C10M 2209/109.

C-Sets syntax rules:

- C-Set of #C10Md shall contain two symbols.
- In these C-Sets the symbols are arranged in alphanumerical order.

C-Sets examples:

- #C10Md: a lubricant composition comprising a nonionic surfactant being a polyalkylene glycol ether is classified as (C10M 2209/104, C10M 2209/108).

- #C10Md: a lubricating oil composition comprising a polyalkylene glycol having the formula farnesol-(C_3H_7O)5-75-H is classified as (C10M 2209/105, C10M 2209/108).
- #C10Md: a lubricant composition comprising an esterified polyalkylene glycol with the following structure $R_1[O(R_2O)_n (R_3O)_m(C=O)R_4]_p$ where R_2 is an oxypropylene moiety and R_3 is an oxybutylene is classified as (C10M 2209/105, C10M 2209/109) and (C10M 2209/106, C10M 2209/109).

C10M 2211/00

Organic non-macromolecular compounds containing halogen as ingredients in lubricant compositions

Special rules of classification

C-sets classification:

In this group, C-Sets (#C10Ma, #C10Mb) are used. The detailed information about the C-Sets construction and the associated syntax rules are found in the "Special rules of classification" in C10M 2201/00.

C10M 2213/00

Organic macromolecular compounds containing halogen as ingredients in lubricant compositions

Special rules of classification

C-sets classification:

In this group, C-Sets (#C10Ma, #C10Mb, #C10Mc) are used. The detailed information about the C-Sets construction and the associated syntax rules are found in the "Special rules of classification" in C10M 2201/00 and C10M 2205/00.

C10M 2213/06

Perfluoro polymers

Definition statement

This place covers:

Substances that are fully fluorinated molecules in which every hydrogen atom bonded to a carbon in the alkane backbone (carbon chain) is replaced by a fluorine atom except for the carbon at one end of the chain that has a charged functional group attached.

C10M 2215/00

Organic non-macromolecular compounds containing nitrogen as ingredients in lubricant Compositions

Special rules of classification

C-sets classification:

In this group, C-Sets (#C10Ma, #C10Mb) are used. The detailed information about the C-Sets construction and the associated syntax rules are found in the "Special rules of classification" in C10M 2201/00.

C10M 2215/02

Amines, e.g. polyalkylene polyamines; Quaternary amines

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Polyamines, i.e. macromoleculars obtained by condensation of more than eleven amine monomers	C10M 2217/046

C10M 2217/00

Organic macromolecular compounds containing nitrogen as ingredients in lubricant compositions

Special rules of classification

C-sets classification:

In this group, C-Sets (#C10Ma, #C10Mb, #C10Mc) are used. The detailed information about the C-Sets construction and the associated syntax rules are found in the "Special rules of classification" in C10M 2201/00 and C10M 2205/00.

C10M 2219/00

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

Special rules of classification

C-sets classification:

In this group, C-Sets (#C10Ma, #C10Mb) are used. The detailed information about the C-Sets construction and the associated syntax rules are found in the "Special rules of classification" in C10M 2201/00.

C10M 2219/022

of hydrocarbons, e.g. olefines

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Macromolecular compounds involving sulfurisation of macromolecular compounds, e.g. polyolefins	C10M 2221/041

C10M 2221/00

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

Special rules of classification

C-sets classification:

In this group, C-Sets (#C10Ma, #C10Mb, #C10Mc) are used. The detailed information about the C-Sets construction and the associated syntax rules are found in the "Special rules of classification" in C10M 2201/00 and C10M 2205/00.

C10M 2221/02

Macromolecular compounds obtained by reactions of monomers involving only carbon-to-carbon unsaturated bonds

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Macromolecular compounds involving sulfurisation of macromolecular compounds, e.g. polyolefins	C10M 2221/041

C10M 2223/00

Organic non-macromolecular compounds containing phosphorus as ingredients in lubricant compositions

Special rules of classification

C-sets classification:

In this group, C-Sets (#C10Ma, #C10Mb) are used. The detailed information about the C-Sets construction and the associated syntax rules are found in the "Special rules of classification" in C10M 2201/00.

C10M 2225/00

Organic macromolecular compounds containing phosphorus as ingredients in lubricant compositions

Special rules of classification

C-sets classification:

In this group, C-Sets (#C10Ma, #C10Mb, #C10Mc) are used. The detailed information about the C-Sets construction and the associated syntax rules are found in the "Special rules of classification" in C10M 2201/00 and C10M 2205/00.

C10M 2227/00

Organic non-macromolecular compounds containing atoms of elements not provided for in groups C10M 2203/00, C10M 2207/00, C10M 2211/00, C10M 2215/00, C10M 2219/00 or C10M 2223/00 as ingredients in lubricant compositions

Special rules of classification

C-sets classification:

In this group, C-Sets (#C10Ma, #C10Mb) are used. The detailed information about the C-Sets construction and the associated syntax rules are found in the "Special rules of classification" in C10M 2201/00.

C10M 2227/08

having metal-to-carbon bonds

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Complexes with metals	C10M 2227/09

C10M 2229/00

Organic macromolecular compounds containing atoms of elements not provided for in groups C10M 2205/00, C10M 2209/00, C10M 2213/00, C10M 2217/00, C10M 2221/00 or C10M 2225/00 as ingredients in lubricant compositions

Special rules of classification

C-sets classification:

In this group, C-Sets (#C10Ma, #C10Mb, #C10Mc) are used. The detailed information about the C-Sets construction and the associated syntax rules are found in the "Special rules of classification" in C10M 2201/00 and C10M 2205/00.