

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](#))

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.

The total concentration of additives is normally up to 10 wt.% based on the whole amount of the lubricating composition. Exception may be found with viscosity-index improvers. The additives are used to enhance the performance characteristics of the base oil.

Relationships with other classification places

The mechanical aspect of the lubrication conditions, places, apparatuses where the lubrication takes place are classified in section [F](#) of the European Patent Classification

References

Limiting references

This place does not cover:

Liquid carbonaceous fuels	Liquid carbonaceous fuels containing additives	C10L 1/00
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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.

Separation	B01D
Emulsifying, dispersing agents	B01F 17/00
Chemical or physical processes, catalysis, colloid chemistry	B01J
Colloidal materials or their solutions	B01J 13/00
Mould release agents for separating metals after moulding	B22C 3/00
Mould concrete, shaping clay or other ceramic compositions	B28B 7/00

Mould release agents for separating plastics or substances in a plastic state, after moulding	B29C 33/56
Inorganic elements, compounds	C01
Mould release agents for separating glass after moulding	C03B 40/02
Purification, separation, stabilisation, use of additives	C07B 63/00
Acyclic or carbocyclic compounds	C07C
Heterocyclic compounds	C07D
Other organic compounds	C07F , C07G , C07H , C07J , C07K
Macromolecular compounds obtained by reactions only involving C to C 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
Well-drilling compositions	C09K 8/02
Production of hydrocarbon oils from lower carbon number hydrocarbons for lubricating purposes, e.g. by oligomerisation	C10G 50/02
Fuel compositions 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 there from	C11C
Detergent compositions	C11D
Coating metallic materials	C23C
Textile lubricating compositions	D06M 11/00 , D06M 13/00 , D06M 15/00
Lubrication of machines or engines	F01M
Shafts, elements or crankshaft mechanisms	F16C
Coupling for transmitting	F16D
Pipes, joints	F16L
Lubricating devices, arrangements or systems (use of particular substance in particular apparatus or conditions)	F16N , A21D 8/08 , B21C 9/00 , H01B 3/18
Immersion oils for microscopy	G02B 21/33
Records carriers characterised by the lubricant	G11B 5/71

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, [C10M 101/00-C10M 111/00](#) are to be considered. When only the thickener(s) is(are) essential, [C10M 113/00-C10M 123/00](#) are relevant. Compositions

comprising essential additive(s) are in [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 found in [C10M 175/00](#). Preparation or after-treatment is covered by [C10M 177/00](#).

Symbols chosen from [C10M](#), [C10N](#) are mandatory and are used to classify additional information.

[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 [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 [C10M](#) the symbols are listed with respect to their chemical structure (inorganic compounds, organic hydrocarbons, organic compounds comprising H, C and O, organic compounds comprising N, organic compounds comprising N, organic compounds comprising P, organic compounds comprising other atoms).

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 with [C10M 2205/022](#), [C10M 2209/084](#), using the alphanumerical order.

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 2220/022](#).

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 with [C10M 2219/044](#), [C10N 2210/02](#).

[C10N](#) is based on the IPC scheme [C10N](#) and contains more details. 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 not used any more and are replaced by [C10N 2210/00](#) - [C10N 2210/08](#). Those indexing codes are only used as linked codes in combination with codes chosen from subclass **C10M2000/00** subgroups identifying the chemical nature of the compounds concerned.

Example: [C10M 2201/084](#), [C10N 2210/02](#): 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, Hg.

Codes [C10N 2220/301](#) - [C10N 2220/306](#) are only used in association with group [C10M 171/008](#) to provide information about the specific refrigerant.

Additional information comprises:

- Metals and the metal of a compound ([C10N 2210/00](#));
- The properties of the lubricant composition or constituents thereof ([C10N 2220/00](#), [C10N 2230/00](#));
- The purpose, use or application of the lubricant composition ([C10N 2240/00](#));
- Lubricants used in magnetic head and magnetic media applications are classified in [G11B](#) and [C10N 2240/204](#) and [C10N 2240/205](#);
- The form in which the lubricant composition is applied ([C10N 2250/00](#));
- Chemical modification by after-treatment of lubricant constituents ([C10N 2260/00](#));
- Special methods of preparation ([C10N 2270/00](#));
- Special pretreatment of the surface to be lubricated ([C10N 2280/00](#)).

Synonyms and Keywords

In patent documents lubricant or lubricating composition include the following expressions "gear oil", "engine oil", "turbine oil", "electrical oil", "refrigerator oil", "compressor oil", "metal working fluid", "chain oil", "conveyor oil", "cutting oils", "hydraulic fluid", "metal drawing compositions", "flushing oils", "slushing oils", "grease composition", "transmission fluid", "motor oil".

In patent documents the word "tackifier" is sometimes used instead of "thickener" which is used in the classification scheme of this group.

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
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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
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Informative references

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

Catalysts	B01J 21/00- B01J 31/00
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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
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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
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Informative references

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

Macromolecular compounds	C08B , C08F , C08G
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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
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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 2210/00](#) 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
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Special rules of classification

Symbols from [C10M 2207/106](#) - [C10M 2207/246](#), [C10N 2210/00](#) should be additionally 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
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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
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Special rules of classification

Symbols from [C10M 2201/02](#) - [C10M 2201/18](#) and [C10N 2210/00](#), if a metal is concerned, should be additionally 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
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Informative references

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

Hydrocarbons	C10L 1/1608
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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
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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
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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)
- Phosphosulfurized terpene

References

Limiting references

This place does not cover:

Overbased phosphonate salts	C10M 159/20
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Informative references

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

Fuel additives containing phosphorus	C10L 1/26
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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
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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
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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
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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
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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, selenium 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
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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
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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
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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 constitution	C10M 129/56
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Informative references

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

Natural rubbers	C10L 1/1675
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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
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Synonyms and Keywords

In patent documents, the following abbreviations are often used:

TBN	Total Base Number
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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
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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
- or 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](#)

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

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 2220/00](#) and in [C10N 2230/00](#) are generally 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-treatment 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.