

# CPC COOPERATIVE PATENT CLASSIFICATION

## C CHEMISTRY; METALLURGY

(NOTES omitted)

### CHEMISTRY

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

## C10N INDEXING SCHEME ASSOCIATED WITH SUBCLASS [C10M](#) RELATING TO LUBRICATING COMPOSITIONS

### NOTES

1. This subclass constitutes an indexing scheme associated with subclass [C10M](#), relating to:
  - metals and the metal of a compound in group [C10N 2010/00](#);
  - the properties of the lubricant composition or constituents thereof in groups [C10N 2020/00](#), [C10N 2030/00](#);
  - the use or application of the lubricant composition in group [C10N 2040/00](#);
  - the form in which the lubricant composition is applied in group [C10N 2050/00](#);
  - chemical modification by after-treatment of lubricant constituents in group [C10N 2060/00](#);
  - special methods of preparation in group [C10N 2070/00](#);
  - special pretreatment of the material to be lubricated in group [C10N 2080/00](#).
2. In this subclass, the following terms or expressions are used with the meanings indicated:
  - "lubricant" or "lubricating composition" includes cutting oils, hydraulic fluids, metal drawing compositions, flushing oils, slushing oils, or the like;
  - "aliphatic" includes "cycloaliphatic".

### 2010/00 Metal present as such or in compounds

#### NOTE

In this group, metals should be indexed according to their group of the Periodic Table.

- 2010/02 . Groups 1 or 11
- 2010/04 . Groups 2 or 12
- 2010/06 . Groups 3 or 13
- 2010/08 . Groups 4 or 14
- 2010/10 . Groups 5 or 15
- 2010/12 . Groups 6 or 16
- 2010/14 . Group 7
- 2010/16 . Groups 8, 9, or 10

- 2020/071 . . {Branched chain compounds}
- 2020/073 . . {Star shaped polymers}
- 2020/075 . . {Dendrimers}
- 2020/077 . . {Ionic Liquids}
- 2020/079 . . {Liquid crystals}
- 2020/081 . . {Biodegradable compounds}
- 2020/083 . . {Volatile compounds}
- 2020/085 . . {Non-volatile compounds}
- 2020/09 . {Characteristics associated with water}
- 2020/091 . . {Water solubility}
- 2020/093 . . {Insolubility in water}
- 2020/095 . . {Crystal water containing compounds}
- 2020/097 . . {Refrigerants}

#### NOTE

{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.}

### 2020/00 Specified physical {or chemical properties or characteristics, i.e. function,} of component of lubricating compositions

- 2020/01 . {Physico-chemical properties}
- 2020/011 . . {Cloud point}
- 2020/013 . . {Iodine value}
- 2020/015 . . {Distillation range}
- 2020/017 . . {Specific gravity or density}
- 2020/019 . . {Shear stability}
- 2020/02 . . Viscosity; Viscosity index
- 2020/04 . . Molecular weight; Molecular weight distribution
- 2020/055 . . {Particles related characteristics}
- 2020/06 . . . Particles of special shape or size
- 2020/061 . . . {Coated particles}
- 2020/063 . . . {Fibrous forms}
- 2020/065 . . {Saturated Compounds}
- 2020/067 . . {Unsaturated Compounds}
- 2020/069 . . {Linear chain compounds}

- 2020/099 . . . {Containing Chlorofluorocarbons}
- 2020/101 . . . {Containing Hydrofluorocarbons}
- 2020/103 . . . {Containing Hydrocarbons}
- 2020/104 . . . {Containing Nitrogen}
- 2020/105 . . . {Containing Ammonia}
- 2020/106 . . . {Containing Carbon dioxide}

### 2030/00 Specified physical or chemical properties which is improved by the additive characterising the lubricating composition, e.g. multifunctional additives

- 2030/02 . Pour-point; Viscosity index
- 2030/04 . Detergent property or dispersant property

2030/041	. . {Soot induced viscosity control}	2040/16	. . Dielectric; Insulating oil {or insulators}
2030/06	. Oiliness; Film-strength; Anti-wear; Resistance to extreme pressure	2040/17	. . {for electric contacts}
2030/08	. Resistance to extreme temperature	2040/175	. . {Pantographs, i.e. printing devices}
2030/10	. Inhibition of oxidation, e.g. anti-oxidants	2040/18	. . in connection with recordings on magnetic tape or disc
2030/12	. Inhibition of corrosion, e.g. anti-rust agents or anti-corrosives	2040/185	. . {Magnetic fluids}
2030/14	. Metal deactivation	2040/20	. Metal working
2030/16	. Antiseptic; {(micro)} biocidal {or bactericidal}	2040/22	. . with essential removal of material {, e.g. cutting, grinding or drilling}
2030/18	. Anti-foaming property	2040/24	. . without essential removal of material {, e.g. forming, gorging, drawing, pressing, stamping, rolling or extruding}; Punching metal
2030/20	. Colour, e.g. dyes	2040/241	. . {Manufacturing joint-less pipes}
2030/22	. {Degreasing properties}	2040/242	. . {Hot working}
2030/24	. {Emulsion properties}	2040/243	. . {Cold working}
2030/26	. {Waterproofing or water resistance}	2040/244	. . {of specific metals}
2030/28	. {Anti-static}	2040/245	. . . {Soft metals, e.g. aluminum}
2030/30	. {Anti-misting}	2040/246	. . . {Iron or steel}
2030/32	. {Light or X-ray resistance}	2040/247	. . . {Stainless steel}
2030/34	. {Fragrance or deodorizing properties}	2040/25	. Internal-combustion engines
2030/36	. {Seal compatibility, e.g. with rubber}	2040/251	. . {Alcohol-fuelled engines}
2030/38	. {Catalyst protection, e.g. in exhaust gas converters}	2040/252	. . {Diesel engines}
2030/40	. {Low content or no content compositions}	2040/253	. . . {Small diesel engines}
2030/41	. . {Chlorine free or low chlorine content compositions}	2040/255	. . {Gasoline engines}
2030/42	. . {Phosphor free or low phosphor content compositions}	2040/26	. . . Two-strokes {or two-cycle engines}
2030/43	. . {Sulfur free or low sulfur content compositions}	2040/28	. . . Rotary {engines}
2030/44	. . {Boron free or low content boron compositions}	2040/29	. {Hybrid or electric engines}
2030/45	. . {Ash-less or low ash content}	2040/291	. . {Hybrid engines}
2030/50	. {Emission or smoke controlling properties}	2040/292	. . {Electric engines}
2030/52	. {Base number [TBN]}	2040/30	. Refrigerators lubricants {or compressors lubricants}
2030/54	. {Fuel economy}	2040/32	. Wires, ropes or cables lubricants
2030/56	. {Boundary lubrication or thin film lubrication}	2040/34	. Lubricating-sealants
2030/58	. {Elastohydrodynamic lubrication, e.g. for high compressibility layers}	2040/36	. Release agents {or mold release agents}
2030/60	. {Electro rheological properties}	2040/38	. {Conveyors or chain belts}
2030/62	. {Food grade properties}	2040/40	. {Generators or electric motors in oil or gas winning field}
2030/64	. {Environmental friendly compositions}	2040/42	. {Flashing oils or marking oils}
2030/66	. {Hydrolytic stability}	2040/44	. {Super vacuum or supercritical use}
2030/68	. {Shear stability}	2040/46	. {Textile oils}
2030/70	. {Soluble oils}	2040/48	. {Slushing oils}
2030/72	. {Extended drain}	2040/50	. {Medical uses}
2030/74	. {Noack Volatility}		
2030/76	. {Reduction of noise, shudder, or vibrations}	<b>2050/00</b>	<b>Form in which the lubricant is applied to the material being lubricated</b>
2030/78	. {Fuel contamination}	2050/01	. {Emulsions, colloids, or micelles}
<b>2040/00</b>	<b>Specified use or application for which the lubricating composition is intended</b>	2050/011	. . {Oil-in-water}
2040/02	. Bearings	2050/013	. . {Water-in-oil}
2040/04	. Oil-bath; Gear-boxes; Automatic transmissions; Traction drives	2050/015	. {Dispersions of solid lubricants}
2040/042	. . {for automatic transmissions}	2050/02	. . dissolved or suspended in a carrier which subsequently evaporates to leave a lubricant coating
2040/044	. . {for manual transmissions}	2050/023	. {Multi-layer lubricant coatings}
2040/045	. . {for continuous variable transmission [CVT]}	2050/025	. . {in the form of films or sheets}
2040/046	. . {for traction drives}	2050/04	. Aerosols
2040/06	. Instruments or other precision apparatus, e.g. damping fluids	2050/06	. Gaseous phase, at least during working conditions
2040/08	. Hydraulic fluids, e.g. brake-fluids	2050/08	. Solids
2040/10	. Running-in-oil {; Grinding}		
2040/12	. Gas-turbines		
2040/13	. . Aircraft turbines		
2040/135	. {Steam engines or turbines}		
2040/14	. Electric or magnetic purposes		

## C10N

- 2050/10 . semi-solid; greasy

### **WARNING**

Group [C10N 2050/10](#) is incomplete pending reclassification of documents from groups [C10M 5/00](#) and [C10M 7/00](#).

Groups [C10M 5/00](#), [C10M 7/00](#) and [C10N 2050/10](#) should be considered in order to perform a complete search.

- 2050/12 . {Micro capsules}
- 2050/14 . {Composite materials or sliding materials in which lubricants are integrally molded}

### **2060/00 Chemical after-treatment of the constituents of the lubricating composition**

- 2060/01 . {by organic hydroxy group containing compounds}
- 2060/02 . Reduction, e.g. hydrogenation
- 2060/04 . Oxidation, e.g. ozonisation
- 2060/06 . by epoxydes {or oxyalkylation reactions}
- 2060/08 . Halogenation
- 2060/09 . {Treatment with nitrogen containing compounds}
- 2060/10 . by sulfur or a compound containing sulfur
- 2060/12 . by phosphorus or a compound containing phosphorus, e.g.  $P_xS_y$
- 2060/14 . by boron or a compound containing boron

### **2070/00 Specific manufacturing methods for lubricant compositions**

- 2070/02 . {Concentrating of additives}

### **2080/00 Special pretreatment of the material to be lubricated, e.g. phosphatising or chromatising of a metal**