

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

- 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](#).
- 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 . Group 1
- 2010/04 . Group 2
- 2010/06 . Group 3
- 2010/08 . Group 4
- 2010/10 . Group 5
- 2010/12 . Group 6
- 2010/14 . Group 7
- 2010/16 . Group 8

2020/00 Specified physical properties of component of lubricating compositions

- 2020/02 . Viscosity; Viscosity index
- 2020/04 . Molecular weight; Molecular weight distribution
- 2020/06 . Particles of special shape or size

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

- 2030/02 . Pour-point; Viscosity index
- 2030/04 . Detergent or dispersant property
- 2030/06 . Oiliness; Film-strength; Anti-wear; Resistance to extreme pressure
- 2030/08 . Resistance to extreme temperature
- 2030/10 . Inhibition of oxidation, e.g. anti-oxidants
- 2030/12 . Inhibition of corrosion, e.g. anti-rust agents, anti-corrosives
- 2030/14 . Metal deactivation

- 2030/16 . Antiseptic; Biocidal
- 2030/18 . Anti-foaming property
- 2030/20 . Colour, e.g. dyes

2040/00 Specified use or application for which the lubricating composition is intended

- 2040/02 . Bearings
- 2040/04 . Oil-bath; Gear-boxes; Automatic transmissions; Traction drives
- 2040/06 . Instruments or other precision apparatus, e.g. damping fluids
- 2040/08 . Hydraulic fluids, e.g. brake-fluids
- 2040/10 . Running-in oil
- 2040/12 . Gas-turbines
- 2040/13 . . Aircraft turbines
- 2040/14 . Electric or magnetic purposes
- 2040/16 . . dielectric; Insulating oil
- 2040/18 . . in connection with recordings on magnetic tape or disc
- 2040/20 . Metal working
- 2040/22 . . with essential removal of material {, e.g. cutting; Cooling oil}
- 2040/24 . . without essential removal of material {Oil for deformation operations, e.g. drawing, rolling}
- 2040/25 . Internal combustion engines
- 2040/26 . . Two-stroke
- 2040/28 . . Rotary
- 2040/30 . Refrigerator lubricant
- 2040/32 . Wire, rope or cable lubricants
- 2040/34 . Lubricating-sealants
- 2040/36 . Release agents

2050/00 Form in which the lubricant is applied to the material being lubricated

- 2050/02 . dissolved or suspended in a carrier which subsequently evaporates to leave a lubricant coating
- 2050/04 . Aerosol
- 2050/06 . Gaseous phase, at least during working conditions
- 2050/08 . solid
- 2050/10 . semi-solids; greasy

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

- 2060/003 . {by organic hydroxy group containing compounds}
- 2060/006 . {by nitrogen containing compounds}
- 2060/02 . Reduction, e.g. hydrogenation
- 2060/04 . Oxidation, e.g. ozonisation
- 2060/06 . by epoxides
- 2060/08 . Halogenation
- 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 Special methods of preparation**2080/00 Special pretreatment of the material to be lubricated, e.g. phosphatising or chromatising of a metal****2210/00 Nature of the metal present as such or in compounds, i.e. in salts****NOTE**

Indexing codes [C10N 2210/01](#) - [C10N 2210/08](#) are only to be used as linked codes in combination with codes chosen from subclass [C10M](#) identifying the chemical nature of the compounds concerned:

Example: [C10M 2201/084](#) + [C10N 2210/02](#)

- 2210/01 . Group I, e.g. Li, Na, K, Cs, Cu, Ag, Au
- 2210/02 . Group II, e.g. Mg, Ca, Ba, Zn, Cd, Hg
- 2210/03 . Group III, e.g. Al, In, La
- 2210/04 . Group IV, e.g. Sn, Pb, Ti, Zr
- 2210/05 . Group V, e.g. V, As, Sb, Bi
- 2210/06 . Group VI, e.g. Cr, Mo, W
- 2210/07 . Group VII or VIII
- 2210/08 . . Mn, Fe, Co, Ni

2220/00 Specified physical or chemical properties or characteristics, i.e. function, of single compounds in lubricating compositions

- 2220/02 . Physico-chemical properties
- 2220/021 . . Molecular weight
- 2220/022 . . Viscosity
- 2220/023 . . Cloud point
- 2220/024 . . Iodine value
- 2220/025 . . Saturated compounds
- 2220/026 . . Unsaturated compounds
- 2220/027 . . Linear chain compounds
- 2220/028 . . Branched chain compounds
- 2220/029 . . Star-shaped polymers
- 2220/03 . . Dendrimers
- 2220/031 . . Distillation range
- 2220/032 . . Specific gravity or density
- 2220/033 . . Shear stability
- 2220/04 . . Ionic liquids

- 2220/06 . . Liquid crystals
- 2220/08 . . Particles related characteristics
- 2220/082 . . . Particle size or shape
- 2220/084 . . . Coated particles
- 2220/086 . . . Fibrous forms
- 2220/10 . . Biodegradable compounds
- 2220/12 . . Volatile compounds
- 2220/13 . . Non-volatile compounds
- 2220/14 . Characteristics associated with water
- 2220/142 . . Water solubility
- 2220/144 . . Onsolubility in water
- 2220/146 . . Crystal water containing compounds
- 2220/30 . . Refrigerants

NOTE**Indexing codes**

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

- 2220/301 . . . Chlorofluorocarbons
- 2220/302 . . . Hydrofluorocarbons
- 2220/303 . . . Hydrocarbons
- 2220/304 . . . Nitrogen
- 2220/305 . . . Ammonia
- 2220/306 . . . Carbon dioxide

2230/00 Specified physical or chemical properties of lubricating compositions

- 2230/02 . Viscosity or viscosity index
- 2230/04 . Detergent properties, e.g. for cleaning, inhibition or removing varnish; Dispersion properties, e.g. for dispersing solids, carbon residues, sludge
- 2230/041 . . Soot induced viscosity control
- 2230/06 . Resistance to extreme pressure; Oiliness; Abrasion resistance; Friction; Anti-wear
- 2230/08 . Resistance to extreme heat; Resistance to extreme temperature
- 2230/10 . Anti-oxidation characteristics
- 2230/12 . Resistance to rust or corrosion
- 2230/14 . Metal deactivation, i.e. passivation
- 2230/16 . Bactericidal or (micro)biocidal
- 2230/18 . Defoaming properties
- 2230/20 . Colour
- 2230/22 . Degreasing properties
- 2230/24 . Emulsion properties
- 2230/26 . Waterproofing or water-resistance
- 2230/28 . Anti-static
- 2230/30 . Anti-misting
- 2230/32 . Light or X-ray resistance
- 2230/34 . Fragrance or deodorising properties
- 2230/36 . Seal compatibility, e.g. with rubber
- 2230/38 . Catalyst protection, e.g. in exhaust gas converters
- 2230/40 . Low content or no content compositions
- 2230/41 . . Chlorine free or low chlorine content compositions
- 2230/42 . . Phosphor free or low phosphor content compositions
- 2230/43 . . Sulfur free or low sulfur content compositions
- 2230/44 . . Boron free or low content boron compositions
- 2230/45 . . Ashless or low ash content
- 2230/50 . Emission or smoke controlling properties

- 2230/52 . Base number (TBN)
- 2230/54 . Fuel economy
- 2230/56 . Boundary lubrication or thin film lubrication
- 2230/58 . Elastohydrodynamic lubrication, e.g. for high compressibility layers
- 2230/60 . Electro rheological properties
- 2230/62 . Food grade properties
- 2230/64 . Environmental friendly compositions
- 2230/66 . Hydrolytic stability
- 2230/68 . Shear stability
- 2230/70 . Soluble oils
- 2230/72 . Extended drain
- 2230/74 . Noack Volatility
- 2230/76 . Reduction of noise, shudder or vibrations
- 2230/78 . Fuel contamination
- 2240/00 Specified uses or applications of lubricating compositions**
- 2240/02 . Bearings
- 2240/04 . Gear oil
- 2240/042 . . for automatic transmissions
- 2240/044 . . for manual transmissions
- 2240/045 . . for Continuous Variable Transmission [CVT]
- 2240/046 . . for traction drives
- 2240/06 . Precision machinery, instruments
- 2240/08 . Hydraulic fluids, e.g. for brakes, clutches
- 2240/10 . Internal-combustion engines
- 2240/101 . . Alcohol fuelled engines
- 2240/102 . . Diesel engines
- 2240/103 . . . Small diesel engines
- 2240/104 . . Gasoline engines
- 2240/105 . . . Two-cycle engines
- 2240/106 . . . Rotary engines
- 2240/108 . . for running in; grinding
- 2240/12 . Gas turbines
- 2240/121 . . Aircraft turbines
- 2240/14 . Steam engines or turbines
- 2240/20 . Electrical or magnetic applications
- 2240/201 . . Dielectrics or insulators
- 2240/202 . . for electric contacts
- 2240/203 . . Pantographs, i.e. printing devices
- 2240/204 . . Magnetic recording mediums
- 2240/205 . . Magnetic fluids
- 2240/22 . Lubricating sealants
- 2240/30 . Refrigerators; Compressors
- 2240/40 . Metal working
- 2240/401 . . with removal of material, e.g. cutting, grinding, drilling
- 2240/402 . . without removal of material, e.g. forming, gorging, drawing, pressing, stamping, rolling, extruding
- 2240/403 . . Manufacturing joint less pipes
- 2240/404 . . Hot working
- 2240/405 . . Cold working
- 2240/406 . . of specific metals
- 2240/407 . . . Soft metals, e.g. aluminium
- 2240/408 . . . Iron or steel
- 2240/409 . . . stainless steel
- 2240/50 . Wires, ropes or cables
- 2240/52 . Conveyors; Chain belts
- 2240/54 . Generators or electric motors in oil or gas winning field

- 2240/56 . Flashing oils; Marking oils
- 2240/58 . Mould release agents
- 2240/60 . Supervacuum or supercritical use
- 2240/62 . Textile oils
- 2240/64 . Slushing oils
- 2240/66 . Medical uses
- 2250/00 Form or state of lubricant compositions in which they are used**
- 2250/02 . Emulsions; Colloids; Micelles
- 2250/021 . . Oil-in-water
- 2250/022 . . Water-in-oil
- 2250/04 . Aerosols
- 2250/06 . Gaseous form
- 2250/08 . Solids
- 2250/10 . Semi-solids or greases
- 2250/12 . Dispersions of solid lubricants
- 2250/121 . . compositions providing a coating after evaporation of a medium, e.g. of solvent, water
- 2250/14 . Multi layer lubricant coatings
- 2250/141 . . in the form of films or sheets
- 2250/16 . Microcapsules
- 2250/18 . Composite materials, or sliding materials in which lubricants are integrally moulded
- 2260/00 Chemical after-treatment or modifications of compounds**
- 2260/02 . Reduction
- 2260/04 . Oxidation
- 2260/06 . Treatment with epoxides or oxyalkylation reactions
- 2260/08 . Halogenation
- 2260/09 . Treatment with nitrogen containing compounds
- 2260/10 . Treatment with sulfur or sulfur-containing compounds
- 2260/12 . Treatment with phosphorus or phosphorus-containing compounds
- 2260/14 . Treatment with boron or boron-containing compounds
- 2270/00 Specific manufacturing methods for lubricant compositions or compounds not covered by groups [C10N 2210/00](#) - [C10N 2260/00](#)**
- 2270/02 . concentrating of additives
- 2280/00 Specific pretreatment of the surface to be lubricated, e.g. phosphatising**