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

WARNING
Group C10N 2010/14 is impacted by reclassification into group C10N 2010/16.
Groups C10N 2010/14 and C10N 2010/16 should be considered in order to perform a complete search.

2010/16  . Groups 8, 9, or 10

WARNING
Group C10N 2010/16 is incomplete pending reclassification of documents from group C10N 2010/14.
Groups C10N 2010/14 and C10N 2010/16 should be considered in order to perform a complete search.

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]
2020/071  . [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.)

- 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
  - 2030/06 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 or anti-corrosives
  - 2030/14 Metal deactivation
  - 2030/16 Antisepic; [(micro) biocidal {or bactericidal}]
  - 2030/18 Anti-foaming property
  - 2030/20 Colour, e.g. dyes
  - 2030/22 (Degreasing properties)
  - 2030/24 Emulsion properties
  - 2030/26 Waterproofing or water resistance
  - 2030/28 (Anti-static)
  - 2030/30 Anti-misting
  - 2030/32 Light or X-ray resistance
  - 2030/34 Fragrance or deodorizing properties
  - 2030/36 Seal compatibility, e.g. with rubber
  - 2030/38 Catalyst protection, e.g. in exhaust gas converters
  - 2030/40 Low content or no content compositions
  - 2030/42 Chlorine free or low chlorine content compositions
  - 2030/43 Phosphor free or low phosphor content compositions
  - 2030/44 Sulfur free or low sulfur content compositions
  - 2030/45 Boron free or low content boron compositions
  - 2030/47 Ash-less or low ash content
  - 2030/50 Emission or smoke controlling properties
  - 2030/52 Base number [TBN]
  - 2030/54 Fuel economy
  - 2030/56 Boundary lubrication or thin film lubrication
  - 2030/58 Elastohydrodynamic lubrication, e.g. for high compressibility layers
  - 2030/60 Electro rheological properties
  - 2030/62 Food grade properties
  - 2030/64 Environmental friendly compositions
  - 2030/66 Hydrolytic stability
  - 2030/68 Shear stability
  - 2030/70 Soluble oils
  - 2030/72 Extended drain
  - 2030/74 Noack Volatility
  - 2030/76 Reduction of noise, shudder, or vibrations
  - 2030/78 Fuel contamination

- 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
  - 2040/042 for automatic transmissions
  - 2040/044 for manual transmissions
  - 2040/045 for continuous variable transmission [CVT]
  - 2040/046 for 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 [: Grinding]
  - 2040/12 Gas-turbines
  - 2040/13 Aircraft turbines
  - 2040/135 Steam engines or turbines
  - 2040/14 Electric or magnetic purposes
  - 2040/16 Dielectric; Insulating oil [or insulators]
  - 2040/17 for electric contacts
  - 2040/175 Pantographs, i.e. printing devices
  - 2040/18 in connection with recordings on magnetic tape or disc
  - 2040/185 Magnetic fluids
  - 2040/20 Metal working
  - 2040/22 with essential removal of material [, e.g. cutting, grinding or drilling]
  - 2040/24 without essential removal of material [, e.g. forming, gorging, drawing, pressing, stamping, rolling or extruding]; Punching metal
  - 2040/241 Manufacturing joint-less pipes
  - 2040/242 Hot working
  - 2040/243 Cold working
  - 2040/244 [of specific metals]
  - 2040/245 Soft metals, e.g. aluminum
  - 2040/246 Iron or steel
  - 2040/247 Stainless steel
  - 2040/25 Internal-combustion engines
  - 2040/251 Alcohol fueled engines
  - 2040/252 Diesel engines
  - 2040/253 Small diesel engines
  - 2040/255 Gasoline engines
  - 2040/26 Two-strokes [or two-cycle engines]
  - 2040/28 Rotary [engines]
  - 2040/30 Refrigerators lubricants [or compressors lubricants]
  - 2040/32 Wires, ropes or cables lubricants
  - 2040/34 Lubricating-sealants
  - 2040/36 Release agents [or mold release agents]
  - 2040/38 Conveyors or chain belts
  - 2040/40 Generators or electric motors in oil or gas winning field
  - 2040/42 Flashing oils or marking oils
  - 2040/44 Super vacuum or supercritical use
  - 2040/46 Textile oils
  - 2040/48 Shushing oils
  - 2040/50 Medical uses

- 2050/00 Form in which the lubricant is applied to the material being lubricated
  - 2050/01 Emulsions, colloids, or micelles
  - 2050/011 Oil-in-water
  - 2050/013 Water-in-oil
  - 2050/015 Dispersions of solid lubricants
  - 2050/02 dissolved or suspended in a carrier which subsequently evaporates to leave a lubricant coating
| 2050/023 | {Multi-layer lubricant coatings} |
| 2050/025 | {in the form of films or sheets} |
| 2050/04  | Aerosols                       |
| 2050/06  | Gaseous phase, at least during working conditions |
| 2050/08  | Solids                         |
| 2050/10  | Semi-solids; greasy            |
| 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 epoxides {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, S |
| 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. phosphatizing or chromatising of a metal |