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38.11 - Anti-knock preparations, oxidation inhibitors, gum inhibitors, viscosity improvers, anti-corrosive preparations and other prepared additives, for mineral oils (including gasoline) or for other liquids used for the same purposes as mineral oils.

- Anti-knock preparations :

3811.11 - - Based on lead compounds

3811.19 - - Other

- Additives for lubricating oils :

3811.21 - - Containing petroleum oils or oils obtained from bituminous minerals

3811.29 - - Other

3811.90 - Other

The preparations of this heading are additives for mineral oils or for other liquids used for the same purposes to eliminate or reduce undesirable properties, or to impart or enhance desirable properties.

(A) Prepared additives for mineral oils.

1.- **Additives for crude oils.** This group includes anticorrosives which are added to crude oils to protect metal structures (in particular, distillation columns). Their active constituents are generally amino-type substances derived in particular from imidazoline.

2.- **Additives for gasoline (petrol).** This group includes :

- (a) **Anti-knock preparations** which increase the resistance of fuels to premature ignition and thus prevent knocking. They are usually based on tetraethyllead and tetramethyllead, and also contain, for example, 1,2-dibromoethane or monochloronaphthalene. The heading **does not include** leaded anti-knock compound sludges obtained from storage tanks for leaded anti-knock compounds and consisting essentially of lead, lead compounds and iron oxide (**heading 26.20**).
- (b) **Oxidation inhibitors.** The most important oxidation inhibitors are based on phenolic products (e.g., dimethyl-*tert*-butylphenol), and such derivatives of aromatic amines as alkyl *p*-phenylenediamines.
- (c) **Anti-icing preparations.** Products often based on alcohols (e.g., propan-2-ol (or isopropyl alcohol)), which are added to gasoline (petrol) to prevent the formation of ice in fuel systems.
- (d) **Detergents.** Preparations used to keep the carburettor and the inflow and outflow of the cylinders clean.
- (e) **Gum inhibitors.** These products are intended to prevent the formation of gum in the carburettor or engine intake.

3.- **Additives for lubricating oils.** This group includes :

- (a) **Viscosity improvers**, based on polymers such as polymethacrylates, polybutenes, polyalkylstyrenes.
- (b) **Pour-point depressants**, which prevent the aggregation of crystals at low temperatures. The products of this category are based on polymers of ethylene, on vinyl esters and ethers or on acrylic esters.
- (c) **Oxidation inhibitors** usually based on phenolic or amino compounds.
- (d) **Extreme pressure (EP) additives** based on organodithiophosphates of zinc, sulphurised oils, chlorinated hydrocarbons, aromatic phosphates and thiophosphates.
- (e) **Detergents and dispersants**, such as those based on alkyl phenoxides, naphthenates or petroleum sulphonates of certain metals, such as those of aluminium, calcium, zinc or barium.
- (f) **Rust preventatives** based on organic salts (sulphonates) of calcium or barium, on amines or on alkylsuccinic acids.
- (g) **Foam inhibitors**, usually based on silicones.

Those lubricating preparations intended to be added in small quantities to motor fuels or lubricants, for example, for reducing wear on engine cylinders, are **excluded (heading 27.10 or 34.03)**.

4.- **Additives for other mineral oils.** This group includes :

- (a) **Pour-point depressants**, similar to those used for lubricants as in 3 (b) above.
- (b) **Oxidation inhibitors**. These are similar to those used for gasoline (petrol).
- (c) **Cetane number improvers** for gas oil, for example those based on alkyl nitrates and alkyl nitrites.
- (d) **Additives with surface-active action, which eliminate or prevent the formation of sediment (asphaltenes)** in stored oil.
- (e) **Additives to prevent or reduce undesirable deposits** (e.g., ash, carbon black) in the combustion chambers or flues of furnaces, and **additives to reduce corrosion** by volatile products (e.g., SO₂ and SO₃) in heat transmission structures or chimneys.
- (f) Anti-icing preparations, added to prevent the formation of ice in fuel systems.

(B) Prepared additives for other liquids used for the same purposes as mineral oils.

Among the liquids used for the same purposes as mineral oils are :

- (a) Fuels based on alcohols (e.g., gasohol); and

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(b) Synthetic lubricants :

- (1) based on esters of organic acids (adipates, azelates, neopentylpolyol esters) or of inorganic acids (triaryl phosphates);
- (2) based on polyethers (poly(oxyethylene) (polyethylene glycol) or poly(oxypropylene) (polypropylene glycol));
- (3) based on silicones.

The additives are the same as those used for the corresponding mineral oils.

This heading **does not apply** to separate chemically defined elements and compounds (usually **Chapter 28 or 29**), or to petroleum sulphonates not in the form of preparations.

The heading also **excludes** :

- (a) Lubricating preparations with a basis of molybdenum disulphide (**heading 34.03**).
- (b) Colloidal graphite in suspension in oil or other media and semi-colloidal graphite (**heading 38.01**).