29.20 - Esters of other inorganic acids of non-metals (excluding esters of hydrogen halides) and their salts; their halogenated, sulphonated, nitrated or nitrosated derivatives.

- Thiophosphoric esters (phosphorothioates) and their salts; their halogenated, sulphonated, nitrated or nitrosated derivatives :

2920.11 - - Parathion (ISO) and parathion-methyl (ISO) (methyl-parathion)

2920.19 - - Other

- Phosphite esters and their salts; their halogenated, sulphonated, nitrated or nitrosated derivatives :

2920.21 - - Dimethyl phosphite

2920.22 - - Diethyl phosphite

2920.23 - - Trimethyl phosphite

2920.24 - - Triethyl phosphite

2920.29 - - Other

2920.30 - Endosulfan (ISO)

2920.90 - Other

This heading covers esters of other inorganic acids of non-metals, that is, acids in which the anion contains only non-metal elements.

This heading **does not cover** :

(a) "Esters" of the hydrogen halides (generally **heading 29.03**), and

(b) Esters included in later headings of this Chapter (e.g., "esters" of isocyanic acid (isocyanates) (**heading 29.29**) and "esters" of hydrogen sulphide (generally **heading 29.30**).

The esters of this heading include :

(A) **Thiophosphoric esters** (phosphorothioates) **and their salts**, including sodium *O,O*-dibutyl- and *O,O*-ditolyldithiophosphates*.

(B) **Phosphite esters and their salts**. Phosphite esters or organophosphites have the general structure $P(OR)_3$ which can be considered as esters of phosphorous acid, H_3PO_3. Methyl and ethyl esters of phosphorous acid* can be converted by chemical synthesis to nerve gases.

(C) **Sulphuric esters and their salts.**

Sulphuric esters may be either neutral or acid.

(1) **Methyl hydrogen sulphate** (CH_3OSO_2OH). An oily liquid.

(2) **Dimethyl sulphate** ($(CH_3O)_2SO_2$)*. Colourless or slightly yellow liquid with a slight odour of mint; toxic, corrosive, lachrymatory and irritating to the respiratory tracts. Used in organic synthesis.

(3) **Ethyl hydrogen sulphate** ($C_2H_5OSO_2OH$). Syrupy liquid.

(4) **Diethyl sulphate** ($(C_2H_5O)_2SO_2$). Liquid with an odour of mint.

(D) **Nitrous and nitric esters***.

Nitrous esters are liquids with an aromatic odour, e.g., methyl, ethyl, propyl, butyl and pentyl nitrites.

Nitric esters are mobile liquids with an agreeable odour; they decompose when suddenly heated. They include methyl, ethyl, propyl, butyl and pentyl nitrates.

Nitroglycerol*, **tetranitropentaerythritol (penthrite)** and **nitroglycol** are classified here if unmixed; when presented in the form of prepared explosives they are **excluded (heading 36.02)**.

(E) **Carbonic or peroxocarbonic esters and their salts.**

Esters of carbonic acid may be acid or neutral.

(1) **Diguaiacyl carbonate***. Crystalline light white powder, with a slight odour of **guaiacol**. Used in medicine and as an intermediate in synthesis of perfumes.

(2) **Tetraethyl orthocarbonate** ($C(OC_2H_5)_4$).

(3) **Diethyl carbonate** ($C(OC_2H_5)_2$).

(4) **Bis(4-tert-butylcyclohexyl) peroxodicarbonate.**

(5) **tert-Butylperoxy 2-ethylhexyl carbonate.**

Ethyl chlorocarbonate (or ethyl chloroformate) is **excluded (heading 29.15)**.

(F) **Silicic acid esters and their salts** (tetraethyl silicate, etc.)*.

This heading **does not cover** alcoholates or esters of acid-function metal hydroxides, e.g., titanium tetra-*n*-butoxide (also known as tetrabutyl titanate) (**heading 29.05**).
