28.34 - Nitrites; nitrates.

2834.10 - Nitrites

- Nitrates :

2834.21 - - Of potassium

2834.29 - - Other

(A) NITRITES

Subject to the **exclusions** mentioned in the introduction to this sub-Chapter, this heading includes nitrites, metal salts of nitrous acid (HNO_2) (heading 28.11).

(1) **Sodium nitrite** ($NaNO_2$). Obtained by reducing sodium nitrate with lead; also during the manufacture of litharge. Colourless crystals, hygroscopic and very soluble in water. Used as an oxidising agent in vat dyes; in organic synthesis; for pickling meat; in photography; as a rat-poison, etc.

(2) **Potassium nitrite** (KNO_2). Prepared by the same method as sodium nitrite, or by the action of sulphur dioxide on a mixture of calcium oxide and potassium nitrate. A white crystalline powder or in yellowish sticks; often containing other salts as impurities. Soluble in water, very deliquescent and deteriorating in the air. Used for similar purposes to sodium nitrite.

(3) **Barium nitrite** ($Ba(NO_2)_2$). Crystals used in pyrotechnics.

(4) **Other nitrites**. These include ammonium nitrite, unstable and explosive; used in solution for the production of nitrogen in laboratories.

The heading **excludes** cobaltinitrites (**heading 28.42**).

(B) NITRATES

Subject to the **exclusions** mentioned in the introduction to this sub-Chapter, this heading covers nitrates, metal salts of nitric acid (heading 28.08), **other than** ammonium nitrate and sodium nitrate, whether or not pure (**heading 31.02** or **31.05**). (See other exclusions below.)

Basic nitrates are also classified here.

(1) **Potassium nitrate** (KNO_3) (also called saltpetre or nitre). Obtained from sodium nitrate and potassium chloride. Occurs in colourless crystals, in vitreous masses or as a white crystalline powder, soluble in water and hygroscopic when impure. Similar uses to sodium nitrate; also for preparing gunpowder, chemical primers, fireworks, matches and metallurgical fluxes.

(2) **Bismuth nitrates**.

(a) **Neutral bismuth nitrate** ($Bi(NO_3)_3.5H_2O$). Results from the action of nitric acid on bismuth; large crystals, colourless, deliquescent. Used for preparing bismuth oxides or salts and certain varnishes.

(b) **Basic bismuth nitrate** ($BiNO_3(OH)_2$). Obtained from the neutral bismuth nitrate; pearly white powder, insoluble in water. Used in medicine (for treating gastro-intestinal ailments); in ceramics (iridescent colours); in cosmetics; in the preparation of fulminate primers, etc.

(3) **Magnesium nitrate** ($Mg(NO_3)_2.6H_2O$). Colourless crystals, soluble in water. Used in pyrotechnics, in the preparation of refractory products (with magnesium oxide), of incandescent gas mantles, etc.

(4) **Calcium nitrate** ($Ca(NO_3)_2$). Obtained by treating crushed limestone with nitric acid. White deliquescent mass, soluble in water, alcohol and acetone : used in pyrotechnics, in the manufacture of explosives, matches, fertilisers, etc.

(5) **Ferric nitrate** ($Fe(NO_3)_3.6$ or $9\ H_2O$). Blue crystals. Used as a mordant in dyeing and in printing (alone or combined with the acetate). The pure aqueous solution is used in medicine.

(6) **Cobalt nitrate** ($Co(NO_3)_2.6H_2O$). Purple, reddish or brownish crystals, soluble in water, deliquescent. Used in the preparation of cobalt blues or yellow and of sympathetic inks; in ceramic decoration; for electrolytic cobalt-plating, etc.

(7) **Nickel nitrate** ($Ni(NO_3)_2.6H_2O$). Water-soluble, deliquescent green crystals. Used in the ceramic industry (brown pigments); in dyeing (as a mordant); in electrolytic nickel-plating; for obtaining nickel oxide or for the preparation of the pure nickel catalyst.

(8) **Cupric nitrate** ($Cu(NO_3)_2$). Copper dissolved in nitric acid gives, by crystallisation, copper nitrate (with 3 or 6 H_2O) according to temperature). Blue or green crystals, soluble in water, hygroscopic, poisonous. Used in pyrotechnics; in the dyestuff industry; in textile dyeing or printing (mordant); in the preparation of cupric oxide and photographic papers; in electroplating, to give metals a patina, etc.

(9) **Strontium nitrate** ($Sr(NO_3)_2$). The action of strontium oxide or sulphide on nitric acid gives the anhydrous salt in the warm, and the hydrated salt (with 4 H_2O) in the cold. Colourless crystalline powder, deliquescent, soluble in water, decomposed by heat. Used in pyrotechnics for red lights; also in the preparation of matches.

(10) **Cadmium nitrate** ($Cd(NO_3)_2.4H_2O$). Prepared from the oxide. Colourless needles, soluble in water and deliquescent. Used as a colouring matter in ceramics or glass-making.

(11) **Barium nitrate** ($Ba(NO_3)_2$). Prepared from natural carbonate (witherite) (heading 25.11). Colourless or white crystals or crystalline powder, soluble in water, poisonous. Used in pyrotechnics for green lights; in the manufacture of explosives, of optical glass, of ceramic glazes, of barium salts or of nitrates, etc.

(12) **Lead nitrate** ($Pb(NO_3)_2$). Lead nitrate is obtained as a by-product of the preparation of lead dioxide by the action of nitric acid on red lead. Colourless crystals, soluble in water, poisonous. Used in pyrotechnics (yellow lights); in the manufacture of matches, of explosives and of certain colouring matters; in tanning; in photography and lithography; for preparing lead salts and as an oxidising agent in organic synthesis.

28.34

Apart from the **exclusions** mentioned previously, the following products are also **excluded** :

(a) Mercury nitrates (**heading 28.52**).

(b) Acetonitrates (**Chapter 29**) (e.g., iron acetonitrate, used as a mordant).

(c) Double salts, whether or not pure, of ammonium sulphate and ammonium nitrate (**heading 31.02** or **31.05**).

(d) Explosives consisting of mixtures of metal nitrates (**heading 36.02**).