28.18 - Artificial corundum, whether or not chemically defined; aluminium oxide; aluminium hydroxide.

2818.10 - Artificial corundum, whether or not chemically defined

2818.20 - Aluminium oxide, other than artificial corundum

2818.30 - Aluminium hydroxide

(A) ARTIFICIAL CORUNDUM, WHETHER OR NOT CHEMICALLY DEFINED

Artificial corundum is formed by fusing aluminium oxide in an electric furnace. The aluminium oxide may contain small proportions of other oxides (e.g., titanium oxide, chromium oxide) either deriving from the natural starting material (bauxites) or added to improve, for example, the hardness of the fused grain or to modify the colour. However, mechanical mixtures of artificial corundum and other substances, such as zirconium dioxide, are **excluded** (**heading 38.24**).

Artificial corundum is put up in small pieces or masses, crushed or in grains; it is more resistant than ordinary aluminium oxide to the action of air and acids, and is very hard. It is used, e.g., as an abrasive, in the manufacture of refractory conglomerates (such as mullite and sillimanite, mixtures of corundum with pure refractory clay and with anhydrous aluminium silicates, respectively) or of laboratory utensils and in the electrical industry.

(B) ALUMINIUM OXIDE, OTHER THAN ARTIFICIAL CORUNDUM

Aluminium oxide (anhydrous or calcined alumina) (Al_2O_3) is obtained by calcining the aluminium hydroxide described below, or from ammonium alum. It is a light white powder, insoluble in water, specific gravity about 3.7.

Uses include, e.g., in aluminium metallurgy, as a filler for paints, in the manufacture of abrasives and synthetic precious or semi-precious stones (rubies, sapphires, emeralds, amethysts, aquamarines, etc.), as a dehydrating agent (for drying gases), or as a catalyst (manufacture of acetone and acetic acid, cracking operations, etc.).

(C) ALUMINIUM HYDROXIDE

Aluminium hydroxide (hydrated alumina) ($Al_2O_3 . 3H_2O$) is obtained from bauxite (a mixture containing aluminium hydroxide) during aluminium metallurgy (see the General Explanatory Note to Chapter 76).

The dry hydroxide is an amorphous, friable white powder, insoluble in water; when damp it is in gelatinous masses (alumina gel, gelatinous alumina).

Aluminium hydroxide is used for the manufacture of ceramic glazes, printing inks, medicinal products, alums, the artificial corundum described above and for clarifying liquids; it is mixed with carbon for the manufacture of anti-rust paints and is also used, due to its affinity for organic colouring matter, for preparing the colour lakes of heading 32.05 and textile mordants.

The aluminates of heading 28.41 correspond to this amphoteric hydroxide.

This heading also covers activated alumina, obtained by controlled heat treatment of hydrated alumina, in which process the latter loses most of its constitutional water; activated alumina is used primarily as an adsorption agent or as a catalyst.

28.18

This heading **does not include** :

(a) Natural corundum (native aluminium oxide) and emery (aluminium oxide containing iron oxide) (**heading 25.13**).

(b) Bauxite, whether or not washed and calcined, but not chemically purified (e.g., by treatment with soda) for use as an electrolyte (**heading 26.06**).

(c) Activated bauxite (**heading 38.02**).

(d) Colloidal solutions of aluminium hydroxide (soluble alumina) (**heading 38.24**).

(e) Artificial corundum on a backing of paper, paperboard or other materials (**heading 68.05**) or agglomerated as grinding wheels, whetstones, hones or other goods of **heading 68.04**.

(f) Natural precious or semi-precious stones with a basis of aluminium oxide (**heading 71.03** or **71.05**).

(g) Synthetic precious or semi-precious stones with a basis of aluminium oxide (e.g., artificial rubies) (**heading 71.04** or **71.05**).