

ALUMINA
(Alumin.)

Chemical symbol : $\text{Al}(\text{OH})_3$ **Mol. wt.:** 78.120

Common names : Aluminium tryhydrate, Aluminium hydroxide; *French:* Hydrate d' alumina;
German: Thonerdehydrate.

Description : The gel is a white, viscous suspension, translucent in thin layers from which small amounts of water may separate on standing. The dried gel is a white, odourless, tasteless, amorphous powder. It is insoluble in water and in alcohol but readily soluble in dilute mineral acids and fixed alkali. It is amphoteric in character. It is prepared by treating a hot solution of potassium alum with a hot solution of sodium carbonate. The precipitated aluminium hydroxide is then washed thoroughly to make it free of sulphates. Contains not less than 65 percent of Al_2O_3 .

Identification : (i) When moistened with a solution of *cobalt nitrate*, a blue residue is produced.

(ii) A hydrochloric acid solution responds to the *tests* for *Aluminium*.

Arsenic : Not more than 1 part per million

Chlorides : Dissolve 0.5 g in 5 ml of *dilute nitric acid*, boil, cool, dilute to 100 ml with *water* and filter; 25 ml of the filtrate complies with the *limit test for chlorides*

Heavy metals : Not more than 10 parts per million

Sulphates : Dissolve 2.5 g in a 5 ml of *dilute hydrochloric acid*, boil, cool, dilute to 200 ml with *water* and filter; 10 ml of the filtrate with the addition of 2 ml of *dilute hydrochloric acid* complies with the *limit test for sulphates*

Assay : Weigh accurately about 0.2 g and dissolve in 5 ml of *hydrochloric acid* and add 50 ml of *water*. Heat to boiling, filter, wash the filter with 50 ml of *water* and add 5 drops of a solution of *methyl red*, followed by sufficient dilute *ammonia solution* to produce a distinct yellow colour in the mixture. Heat to boiling and filter. Wash with 2.5 percent w/v solution of *ammonium nitrate* until precipitate free from *chloride*. Dry the precipitate to constant weight at a temperature above 120° and then weigh the residue of Al_2O_3 .

Storage : Keep in tight container and store in cool place.

History and authority : Allen's Encyclop. Mat. Med. Vol. I, 206. Hering Guid. Symp. Vol. I, 149.

Preparation : (a) Trituration 1x Drug strength 1/10
Alumina in *coarse powder* 100 g
Saccharum Lactis 900 g
to make one thousand grammes of the trituration.

(b) Potencies: 2x and higher to be triturated in accordance with the method 6x may be converted to liquid 8x 9x and higher with *Dispensing Alcohol*.

Old method : Class VII