

## ALUMINIUM POWDER

*Prepared at the 63<sup>rd</sup> JECFA (2004) and published in the Combined Compendium of Food Additive Specifications, FAO JECFA Monographs 1 (2005). A PTWI of 2 mg/kg bw for aluminium was established at the 74<sup>th</sup> JECFA (2011).*

### SYNONYMS

CI Pigment Metal; CI (1975) No. 77000; INS No. 173

### DEFINITION

Produced by grinding aluminium that may be carried out in the presence of edible vegetable oils and/or food grade fatty acids.

### Chemical names

Aluminium

### C.A.S. number

7429-90-5

### Chemical formula

Al

### Atomic weight

26.98

### Assay

Not less than 99.0 %

### DESCRIPTION

Silvery grey powder

### FUNCTIONAL USES

Colour (for surface only)

### CHARACTERISTICS

#### IDENTIFICATION

##### Solubility (Vol. 4)

Insoluble in water and in organic solvents, soluble in dilute hydrochloric acid.

##### Test for aluminium (Vol. 4)

A sample dissolved in dilute hydrochloric acid passes test.

#### PURITY

##### Loss on drying (Vol. 4)

Not more than 0.5 % (105°)

##### Arsenic (Vol. 4)

Not more than 3 mg/kg (Method II)

##### Lead (Vol. 4)

Not more than 20 mg/kg

Weigh 5 g of sample and transfer to a beaker. Add 50 ml concentrated hydrochloric acid and heat on a hot plate until totally dissolved. Dilute with water to 100 ml in a volumetric flask. Determine using an atomic absorption technique appropriate to the specified level.

### METHOD OF ASSAY

Wash a small sample in hexane, repeating to remove traces of any associated oil or fatty acid. Transfer about 0.2 g of the sample, accurately weighed, to a 500 ml flask fitted with a rubber stopper carrying a 150 ml separating funnel, an inlet tube connected to a cylinder of carbon dioxide and an outlet tube dipping into a water-trap. Add 60 ml of freshly boiled and cooled water and disperse the sample, replace the air by carbon dioxide and add, by the separating funnel, 100 ml of a solution containing 56 g of ferric ammonium sulfate and 7.5 ml of sulfuric acid in freshly boiled and cooled water.

While maintaining an atmosphere of carbon dioxide in the flask, heat to boiling and boil for 5 min. After the sample has dissolved, cool rapidly to 20°, and dilute to 250 ml with freshly boiled and cooled water. To 50 ml of this solution, add 15 ml of phosphoric acid and titrate with 0.1 N potassium permanganate. 1 ml of 0.1 N potassium permanganate is equivalent to 0.8994 mg of Al.