SODIUM ALUMINIUM PHOSPHATE, BASIC

Prepared at the 25th JECFA (1982), published in FNP 25 (1982) and in FNP 52 (1992). Metals and arsenic specifications revised at the 55th JECFA (2000). A group PTWI of 1 mg/kg bw for aluminium and its salts was established at the 67th JECFA (2006).

SYNONYMS Kasal, INS No. 541 (ii)

DEFINITION An autogenous mixture of an alkaline sodium aluminium phosphate (approximately $Na_8Al_2(OH)_2(PO_4)_4$) with about 30% dibasic sodium phosphate

Assay Not less than 9.5% and mot more than 12.5% of Al_2O_3, on the ignited basis

DESCRIPTION White, odourless powder

FUNCTIONAL USES Emulsifier

CHARACTERISTICS

IDENTIFICATION

Solubility (Vol. 4) Soluble in hydrochloric acid; the sodium phosphate moiety is soluble in water, whereas the sodium aluminium phosphate moiety is only sparingly soluble in water

Test for sodium (Vol. 4) Passes test
Test a 1 in 10 solution in dilute hydrochloric acid (1 in 2)

Test for aluminium (Vol. 4) Passes test
Test a 1 in 10 solution in dilute hydrochloric acid (1 in 2)

Test for phosphate (Vol. 4) Passes test
Test a 1 in 10 solution in dilute hydrochloric acid (1 in 2)

PURITY

Loss on ignition (Vol. 4) Not more than 9% (750-800^o, 2 h)

Fluoride (Vol. 4) Not more than 25 mg/kg (Method I)

Arsenic (Vol. 4) Not more than 3 mg/kg (Method II)

Lead (Vol. 4) Not more than 4 mg/kg
Determine using an atomic absorption technique appropriate to the specified level. The selection of sample size and method of sample preparation may be based on the principles of the method described in Volume 4, “Instrumental Methods.”

METHOD OF ASSAY

Transfer about 2.5 g of the sample, accurately weighed, into a 250-ml volumetric flask, add 15 ml of hydrochloric acid and one glass bead, and boil gently for about 5 min. Cool, dilute to volume with water, and mix. Transfer 10.0 ml of this solution into a 250-ml beaker, add phenolphthalein TS, and neutralize with ammonia TS. Add dilute hydrochloric acid (1 in 2) until the precipitate just dissolves, then dilute to 100 ml with water and heat to 70-80°. Add 10 ml of 8-hydroxyquinoline TS and sufficient ammonium acetate TS until a yellow precipitate forms, then add 30 ml in excess. Digest at 70° for 30 min, filter through a previously dried and weighed Gooch crucible, and wash thoroughly with hot water. Dry at 105° for 2 h, cool, and weigh.

Each mg of the precipitate so obtained corresponds to 0.111 mg of Al_2O_3.