

CALCIUM HYDROXIDE

Prepared at the 19th JECFA (1975), published in NMRS 55B (1976) and in FNP 52 (1992). Metals and arsenic specifications revised at the 59th JECFA (2002). An ADI 'not limited' was established at the 9th JECFA (1965)

SYNONYMS Slaked lime; INS No. 526

DEFINITION

Chemical names Calcium hydroxide

C.A.S. number 1305-62-0

Chemical formula $\text{Ca}(\text{OH})_2$

Formula weight 74.09

Assay Not less than 92.0%

DESCRIPTION White powder

FUNCTIONAL USES Neutralizing agent, buffer, firming agent

CHARACTERISTICS

IDENTIFICATION

Solubility (Vol. 4) Slightly soluble in water, insoluble in ethanol, soluble in glycerol.

Test for alkali The sample is alkaline to moistened litmus paper

Test for calcium (Vol. 4) Passes test

PURITY

Barium Not more than 0.03%

Mix 1.5 g of the sample with 10 ml of water, add 15 ml of dilute hydrochloric acid TS and dilute to 30 ml with water and filter. To 20 ml of the filtrate, add 2 g of sodium acetate, 1 ml of dilute acetic acid TS and 0.5 ml of potassium chromate TS, and allow to stand for 15 min. The turbidity of the solution is not greater than that of a control prepared by adding water to 0.3 ml of barium standard solution (1.779 g barium chloride in 1000 ml of water) to make to 20 ml, adding 2 g of sodium acetate, 1 ml of dilute acetic acid TS and 0.5 ml of potassium chromate TS and allowing to stand for 15 min.

Magnesium and alkali salts Not more than 6%

Dissolve 500 mg of the sample in a mixture of 30 ml of water and 10 ml of dilute hydrochloric acid TS and boil for 1 min. Quickly add 40 ml of oxalic acid TS and stir vigorously until precipitation is well established. Immediately add 2 drops of methyl red TS, then add ammonia TS dropwise until the mixture is just alkaline and cool. Transfer the mixture to a 100-ml cylinder, dilute to volume with water, let stand for 4 h or overnight, then decant the clear,

supernatant liquid through a dry filter paper. To 50 ml of the clear filtrate in a platinum dish add 0.5 ml of sulfuric acid, and evaporate the mixture on a steam bath to a small volume. Carefully evaporate the remaining liquid to dryness over a flame, and continue the heating until the ammonium salts have been completely decomposed and volatilized. Finally, ignite the residue to constant weight. The weight of the residue does not exceed 15 mg.

Acid insoluble ash

Not more than 1.0%

Dissolve 2 g of the sample in 30 ml of dilute hydrochloric acid (1 in 3) and heat to boiling. Filter the mixture, wash the residue with hot water and ignite. The weight of the residue does not exceed 20 mg.

Fluoride (Vol. 4)

Not more than 50 mg/kg (Method I or III)

Lead (Vol. 4)

Not more than 2 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

Weigh accurately about 1.5 g of the sample, transfer to a beaker, and gradually add 30 ml of dilute hydrochloric acid TS. When solution is complete, transfer to a 500-ml volumetric flask, rinse the beaker thoroughly, adding the rinsings to the flask, dilute to volume with water, and mix. Pipet 50 ml of the solution into a suitable container and add 50 ml of water and 15 ml of sodium hydroxide TS, 40 mg of murexide indicator (amm. purpurate) and 3 ml of naphthol green TS, and titrate with 0.05 M disodium ethylenediaminetetraacetate until the solution is deep blue in colour. Each ml of 0.05 M disodium ethylenediaminetetraacetate is equivalent to 3.705 mg of Ca(OH)_2 .