

# MAGNESIUM 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

INS No. 528

## DEFINITION

Chemical names Magnesium hydroxide

C.A.S. number 1309-42-8

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

Formula weight 58.32

Assay Not less than 95.0%

**DESCRIPTION** Odourless, white bulky powder

**FUNCTIONAL USES** Alkali, colour adjunct

## CHARACTERISTICS

### IDENTIFICATION

Solubility (Vol. 4) Practically insoluble in water and in ethanol

Test for alkali The sample is alkaline to moistened litmus paper

Test for magnesium  
(Vol. 4) Passes test

### PURITY

Loss on drying (Vol. 4) Not more than 2% (105°, 2 h)

Loss on ignition (Vol. 4) Not more than 30 - 33% (approx. 800° to constant weight)

Alkalis (free) and soluble salts Boil 2 g of the sample with 100 ml of water for 5 min in a covered beaker and filter while hot. Add methyl red TS and titrate 50 ml of the cooled filtrate with 0.1 N sulfuric acid. Not more than 2 ml of the acid is required to reach the endpoint. Evaporate 25 ml of the filtrate to dryness and dry at 105° for 3 h. Not more than 10 mg of residue remains.

Calcium oxide Not more than 1.5%  
Dissolve about 500 mg of the sample, accurately weighed, in a mixture of 3 ml of concentrated sulfuric acid and 22 ml of water. Add 50 ml of ethanol and allow the mixture to stand overnight. If crystals of magnesium sulfate separate, warm the mixture to about 50° to dissolve. Filter through a Gooch

crucible containing an asbestos mat previously washed with dilute sulfuric acid TS, water, and ethanol and ignited and weighed. Wash the crystals on the mat several times with a mixture of 3 volumes of ethanol and 1 volume of water. Ignite the crucible and contents at a dull red heat, cool and weigh. The weight of calcium sulfate obtained, multiplied by 0.4119, gives the equivalent of calcium oxide in the sample taken for the test.

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**

Transfer about 400 mg of the sample, previously dried at 105° for 2 h and accurately weighed, into a conical flask. Add 25 ml of 1 N sulfuric acid and, after solution is complete, add methyl red TS and titrate the excess acid with 1 N sodium hydroxide. Subtract from the volume of 1 N sulfuric acid consumed in the assay the volume of 1 N sulfuric acid corresponding to the weight of CaO in the sample taken for the assay using as a factor 28.04 mg of CaO for each ml of 1 N sulfuric acid. Each ml of 1 N sulfuric acid used to neutralize the magnesium hydroxide is equivalent to 29.16 mg of  $\text{Mg}(\text{OH})_2$ .