# MAGNESIUM HYDROXIDE CARBONATE

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**SYNONYMS** Magnesium subcarbonate (light or heavy), hydrated basic magnesium carbonate, magnesium carbonate hydroxide; INS No. 504(ii)

## DEFINITION

Chemical names: Magnesium carbonate hydroxide hydrated

Assay: Not less than 40.0% and not more than 45.0% of MgO

**DESCRIPTION** Odourless, light, white, friable masses, or a bulky-white powder

**FUNCTIONAL USES** Alkali, drying agent, colour-retention agent, carrier, anti-caking agent

## CHARACTERISTICS

IDENTIFICATION

Solubility (Vol. 4): Practically insoluble in water; insoluble in ethanol

Alkalinity: Slurry shows slight alkalinity

Test for magnesium (Vol. 4): Passes test

PURITY

Soluble salts: Not more than 1.0%
Mix 2 g of the sample with 100 ml of a mixture of equal volumes of n-propanol and water. Heat the mixture to the boiling point with constant stirring, cool to room temperature, add water to make 100 ml and filter. Evaporate 50 ml of the filtrate on a steam bath to dryness, and dry at 105$^{o}$ for 1 h. The weight of the residue does not exceed 10 mg.

Calcium: Not more than 1.0%
Dissolve about 1 g of the sample, accurately weighed, in a mixture of 3 ml of 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$^{o}$ to dissolve them. Filter through a Gooch crucible containing an asbestos mat that previously has been 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 2 volumes of ethanol and 1 volume of dilute sulfuric acid TS. Ignite the crucible and contents to a dull red heat, cool, and weigh. The weight of calcium sulfate so obtained, multiplied by 0.2944 gives the equivalent of calcium in the sample taken for the test.

Acid insoluble matter

Not more than 0.05%
Mix 5 g of the sample with 75 ml of water, add hydrochloric acid in small portions, with agitation, until no more of the sample dissolves, and boil for 5 min. If an insoluble residue remains, filter, wash well with water until the last washing is free from chloride, ignite, cool and weigh.

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**

Dissolve about 1 g of the sample, accurately weighed, in 30 ml of 1 N sulfuric acid, add methyl orange TS, and titrate the excess acid with 1 N sodium hydroxide. From the volume of 1 N sulfuric acid consumed, deduct the volume of 1 N sulfuric acid corresponding to the content of calcium oxide in the weight of the sample taken for the assay. The difference is the volume of 1 N sulfuric acid equivalent to the magnesium oxide present. Each ml of 1 N sulfuric acid is equivalent to 20.15 mg of MgO.