Status: Currently Official on 14-Feb-2025
Official Date: Official as of 01-Jan-2018
Document Type: USP Monographs
DocId: GUID-B666E61C-662A-4D8F-A04F-633B393D9804_3_en-US
DOI: https://doi.org/10.31003/USPNF_M11710_03_01
DOI Ref: l5xwt

Calcium Hydroxide

$Ca(OH)_2$ 74.09

Calcium hydroxide CAS RN®: 1305-62-0; UNII: PF5DZW74VN.

DEFINITION

Calcium Hydroxide contains NLT 95.0% and NMT 100.5% of calcium hydroxide [$Ca(OH)_2$].

IDENTIFICATION

- **A.**

  Sample solution: Mix with three to four times its weight of water.

  Acceptance criteria: It forms a smooth magma. The clear supernatant from the magma is alkaline to litmus.

- **B.** Identification Tests—General, *Calcium*⟨191⟩

  Sample solution: Mix 1 g with 20 mL of water, and add sufficient 6 N acetic acid to effect the solution.

  Acceptance criteria: Meets the requirements

ASSAY

- **Procedure**

  Sample solution: To 1.5 g of Calcium Hydroxide in a beaker, gradually add 30 mL of 3 N hydrochloric acid. When dissolved, transfer the solution to a 500-mL volumetric flask, and rinse the beaker thoroughly, adding the rinsings to the flask. Dilute with water to volume, and mix. Transfer 50 mL of the solution into a suitable container, and add 100 mL of water, 15 mL of 1 N sodium hydroxide, and 300 mg of hydroxy naphthol blue.

  Titrimetric system

  Mode: Direct titration

  Titrant: 0.05 M edetate disodium VS

  Endpoint detection: Visual

  Analysis: Titrate the *Sample solution* with *Titrant* to a blue endpoint. Each mL of *Titrant* is equivalent to 3.705 mg of calcium hydroxide [$Ca(OH)_2$].

  Acceptance criteria: 95.0%–100.5%

IMPURITIES

- **Limit of Magnesium and Alkali Salts**

  Sample solution: Dissolve 0.50 g in a mixture of 30 mL of water and 10 mL of 3 N hydrochloric acid.

  Analysis: Heat the solution, and boil for 1 min. Rapidly add 40 mL of oxalic acid TS, and stir vigorously until precipitation is well established. Add immediately to the warm mixture 2 drops of methyl red TS and then 6 N ammonium hydroxide, dropwise, until the mixture is just alkaline. Cool to room temperature, transfer to a 100-mL graduated cylinder, dilute with water to 100 mL, mix, and allow to stand for 4 h or overnight. Filter, and 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 heat over a free flame to dryness, and continue heating to complete decomposition and volatilization of ammonium salts. Finally, ignite the residue to constant weight.

  Acceptance criteria: NMT 12 mg (4.8%)

- **Limit of Acid-Insoluble Substances**

  Sample solution: Dissolve 2.0 g in 30 mL of 4 N hydrochloric acid, and heat to boiling.

  Analysis: Filter the mixture, wash the residue with hot water, and ignite.

  Acceptance criteria: 0.5%; the weight of the residue is NMT 10 mg.

- **Carbonate**

  Sample solution: Mix 2 g with 50 mL of water.

  Analysis: Add an excess of 3 N hydrochloric acid to the *Sample solution*.

  Acceptance criteria: The *Analysis* does not cause more than a slight effervescence.

ADDITIONAL REQUIREMENTS

- **Packaging and Storage:** Preserve in tight containers.

Auxiliary Information - Please check for your question in the FAQs before contacting USP.

Topic/Question	Contact	Expert Committee
CALCIUM HYDROXIDE	Documentary Standards Support	SM32020 Small Molecules 3

Chromatographic Database Information: Chromatographic Database

Most Recently Appeared In:
Pharmacopeial Forum: Volume No. PF 27(6)

Current DocID: GUID-B666E61C-662A-4D8F-A04F-633B393D9804_3_en-US
Previous DocID: GUID-B666E61C-662A-4D8F-A04F-633B393D9804_1_en-US
DOI: https://doi.org/10.31003/USPNF_M11710_03_01
DOI ref: l5xwt