Status: Currently Official on 16-Feb-2025
Official Date: Official Prior to 2013
Document Type: NF Monographs
DocId: GUID-3ACBBE2A-7345-4278-A5E5-3A8BBA8F4D4B_1_en-US
DOI: https://doi.org/10.31003/USPNF_M75650_01_01
DOI Ref: fs6rm



# Soda Lime

## DEFINITION

Soda Lime is a mixture of Calcium Hydroxide and Sodium or Potassium Hydroxide or both. It may contain an indicator that is inert toward anesthetic gases such as Ether, Cyclopropane, and Nitrous Oxide and that changes color when the Soda Lime can no longer absorb Carbon Dioxide.

## IDENTIFICATION

- **A.**

  **Analysis:** Place a granule on a piece of moistened red litmus paper.

  **Acceptance criteria:** The paper turns blue immediately.

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

  **Sample solution:** A solution in 6 N acetic acid

  **Acceptance criteria:** Meets the requirements. It also imparts a yellow color to a nonluminous flame that, when viewed through cobalt glass, may show a violet color.

## SPECIFIC TESTS

- Loss on Drying ⟨731⟩

  **Sample:** 10 g

  **Analysis:** Dry at 105° for 2 h.

  **Acceptance criteria:** 12.0%–19.0%

- Carbon Dioxide Absorbency

  **Analysis:** Fill the lower transverse section of a U-shaped drying tube of 15-mm internal diameter and 15-cm height with loosely packed glass wool. In one arm of the tube, place 5 g of anhydrous calcium chloride, and weigh the tube and the contents. In the other arm, place 9.5–10.5 g of Soda Lime, and again weigh. Insert stoppers in the open arms of the tube, and connect the side tube of the arm filled with Soda Lime to a calcium chloride drying tube, which in turn is connected to a suitable source of supply of carbon dioxide. Pass the carbon dioxide through the tube at 75 mL/min for 20 min, accurately timed. Disconnect the tube, cool to room temperature, remove the stoppers, and weigh.

  **Acceptance criteria:** NLT 19.0% increase in weight of the Soda Lime used for the test

- Hardness

  **Sample:** 200 g

  **Analysis:** Screen the *Sample* on a mechanical sieve shaker (see *Particle Size Distribution Estimation by Analytical Sieving* ⟨786⟩) having a frequency of oscillation of 285 ± 3 cycles/min, for 3 min, to remove granules both coarser and finer than the labeled particle size. Weigh 50 g of the granules retained on the screen, and place them in a hardness pan that has a diameter of 200 mm and a concave brass bottom 7.9 mm thick at the circumference and 3.2 mm thick at the center, with an inside spherical radius of curvature of 109 cm. Add 15 steel balls of 7.9-mm diameter, and shake on a mechanical sieve shaker for 30 min. Remove the steel balls, brush the contents of the hardness pan onto a sieve of the fine-mesh size designated on the label, shake for 3 min on the mechanical sieve shaker, and weigh.

  **Acceptance criteria:** NLT 75.0% of Soda Lime is retained on the screen.

- Moisture Absorption

  **Sample:** 10 g

  **Analysis:** Place the *Sample* in a tared 50-mL weighing bottle having a diameter of 50 mm and a height of 30 mm, and weigh. Then place the bottle, with cover removed, for 24 h in a closed container in which the atmosphere is maintained at 85% relative humidity by being in equilibrium with sulfuric acid having a specific gravity of 1.16. Weigh again.

  **Acceptance criteria:** The weight increase is NMT 7.5%.

- Particle Size Distribution Estimation by Analytical Sieving, *Method I* ⟨786⟩

**Sample:** 100 g

**Analysis:** Screen the *Sample* for 5 min as directed, using a mechanical shaker.

**Acceptance criteria:** It passes completely through a No. 2 standard-mesh sieve, and NMT 2.0% passes through a No. 40 standard-mesh sieve. NMT 7.0% is retained on the coarse-mesh sieve, and NMT 15.0% passes through the fine-mesh sieve designated on the label.

## ADDITIONAL REQUIREMENTS

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

• **Labeling:** If an indicator has been added, the name and color change of such indicator are stated on the container label. The container label also indicates the mesh size in terms of standard-mesh sieve sizes (see *Powder Fineness* ⟨811⟩).

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

| Topic/Question | Contact | Expert Committee |
|---|---|---|
| SODA LIME | Leslie Furr<br>Associate Scientific Liaison | GCDF2020 General Chapters - Dosage Forms 2020 |
| REFERENCE STANDARD SUPPORT | RS Technical Services<br>RSTECH@usp.org | GCDF2020 General Chapters - Dosage Forms 2020 |

**Chromatographic Database Information:** Chromatographic Database

**Most Recently Appeared In:**
Pharmacopeial Forum: Volume No. Information currently unavailable

**Current DocID: GUID-3ACBBE2A-7345-4278-A5E5-3A8BBA8F4D4B_1_en-US**
**DOI: https://doi.org/10.31003/USPNF_M75650_01_01**
**DOI ref: fs6rm**