
1. PRODUCT AND MANUFACTURER IDENTIFICATION

Product names:

Calcium Oxide – NanoActive[®] CaO
Calcium Oxide – NanoActive[®] CaO Plus

Manufacturer:

NanoScale Corporation
1310 Research Park Drive
Manhattan, KS 66502
(785) 537-0179

Product Information:

(785) 537-0179
24-Hour Chemtrec Emergency Number:
U.S. (800) 424-9300
International (703) 527-3887

2. CHEMICAL COMPOSITION AND EXPOSURE LIMITS

<u>Component</u>	<u>CAS Number:</u>	<u>OSHA PEL:</u>	<u>ACGIH TLV:</u>
Calcium Oxide	1305-78-8	5 mg/m ³	2 mg/m ³

3. HAZARD IDENTIFICATION AND EMERGENCY OVERVIEW

Routes of exposure: Eye and skin contact, inhalation and ingestion.

Eye Contact: May result in corneal injury. Contact with liquid or vapor causes severe burns and possible irreversible eye damage. May cause conjunctivitis. May cause permanent corneal opacification.

Skin Contact: Contact with skin causes irritation and possible burns, especially if the skin is wet or moist. May cause deep, penetrating ulcers of the skin.

Inhalation: Causes respiratory tract irritation. May cause chemical bronchitis with coughing and difficulty in breathing. May cause acute pulmonary edema, asphyxia, chemical pneumonitis, and upper airway obstruction caused by edema.

Ingestion: Causes gastrointestinal tract burns. May cause circulatory system failure. May cause perforation of the digestive tract. Causes severe pain, nausea, vomiting, diarrhea, and shock.

Acute Health Effects: Can produce spasmodic blinking, tears, and adhesion of calcium oxide particles to the eyeball and the conjunctival sac; dermatitis with desquamation and a vesicular rash, ulceration, and corrosive burns; coughing, sneezing, and inflammation of the nose throat, bronchitis, and pneumonia.

3. HAZARD IDENTIFICATION AND EMERGENCY OVERVIEW (CONT'D)

Chronic Health Effects: Calcium oxide has caused ulceration and perforation of the nasal septum and severe recurrent dermatitis.

Carcinogen status: NTP: No, IARC: No, OSHA: No

4. FIRST AID MEASURES

Skin: Get medical aid. Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes.

Inhalation: Get medical aid. Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. DO NOT use mouth-to-mouth respiration.

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately. DO NOT allow victim to rub or keep eyes closed.

Ingestion: DO NOT induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Get medical aid.

For internal contact via wounds, flush wound with water.

5. FIRE-FIGHTING MEASURES

Calcium oxide is not flammable or explosive. Use extinguishing media most appropriate for the surrounding fire. DO NOT use carbon dioxide or halogenated agents. Use flooding quantities of water. Contact with moisture or water may generate sufficient heat to ignite nearby combustible materials. Use water spray to cool fire-exposed containers.

6. ACCIDENTAL RELEASE MEASURES

Vacuum or sweep up material and place into a suitable disposal container. Clean up spills immediately, using the appropriate protective equipment. Avoid generating dusty conditions and provide adequate ventilation.

7. HANDLING AND STORAGE

Store in a tightly closed container under nitrogen blanket. Store in a cool, dry, well-ventilated area away from incompatible substances.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Respiratory Protection: Use NIOSH approved respirator when use is necessary.

Skin Protection: Wear appropriate protective gloves and clothing to prevent skin exposure.

Eye Protection: Wear appropriate protective glasses or chemical safety goggles.

Other Protective Equipment: Wear appropriate protective clothing to minimize contact with skin.

9. PHYSICAL AND CHEMICAL PROPERTIES

Color/Appearance: White powder

Odor: None

Molecular Weight: 56.08

Boiling Point: 2850° C

Melting Point: 2580° C

Specific Gravity: 3.30

Vapor Pressure: Negligible

Solubility in Water: Reacts with water.

10. STABILITY AND REACTIVITY

Stability: Stable under normal temperatures and pressures.

Hazardous Polymerization: Will not occur.

Incompatibility: Reacts with water to form calcium hydroxide and heat; reacts with carbon dioxide to form calcium carbonate. Incompatible with ethanol, boric oxide + calcium chloride, and interhalogens such as boron trifluoride, chlorine trifluoride, fluorine, hydrofluoric acid, phosphorus pentoxide, perchlorates, nitrates, and permanganates, acids.

Decomposition Products: No hazardous decomposition products.

11. TOXICOLOGICAL INFORMATION

CaO Plus

Acute Oral Toxicity: LD₅₀ > 2 g/kg

Acute Dermal Toxicity: LD₅₀ > 5 g/kg

Acute Dermal Irritation: PII = 0, non-irritating

Skin Sensitization: Non-sensitizer

Acute Eye Irritation: Extremely irritating

12. ECOLOGICAL INFORMATION

None available.

13. DISPOSAL CONSIDERATIONS

Disposal should be in accordance with applicable local, state, and federal regulations.

14. TRANSPORT INFORMATION

Hazardous Materials Table (49 CFR 172.101): Non hazardous for ground transportation per 172.101(b)(2).

IATA

Shipping Name: Calcium Oxide

Hazard Class: 8

ID No.: UN1910

Packing Group: III

15. REGULATORY INFORMATION

TSCA: Calcium Oxide is listed in the TSCA inventory.

SARA (Title 313): No reporting requirements.

CERCLA RQ: None

This MSDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

16. OTHER INFORMATION

The above information is believed to be correct but does not purport to be all-inclusive and shall be used only as a guide. NanoScale Corporation makes no warranty with respect hereto and disclaims all liability from reliance thereon. The information is intended for use by persons with professional knowledge of the subject matter or with access to such persons. Persons receiving this information are urged to conduct their own assessment of the suitability and completeness of the information for their particular application.