
CALCIUM METAL

1. Chemical Product And Company Identification

Company's Name: REAGENTS, INC.
Company's P. O. Box: 240746
Company's City: CHARLOTTE
Company's State: NC
Company's Country: US
Company's Zip Code: 28224
Company's Info Ph #: 704/554-7474, 800/732-8484
Date MSDS Prepared: April 16, 2003
Synonyms: Calcium metal crystalline
CAS No.: 7440-70-2
Molecular Weight: 40.08
Chemical Formula: Ca
Product Codes: 2-15950

2. Composition/Information on Ingredients

<i>Ingredient</i>	<i>CAS No</i>	<i>Percent</i>	<i>Hazardous</i>
<i>Calcium</i>	<i>7440-70-2</i>	<i>90 - 100%</i>	<i>Yes</i>

3. Hazards Identification

Emergency Overview

DANGER! FLAMMABLE SOLID. WATER REACTIVE. CORROSIVE. HARMFUL OR FATAL IF SWALLOWED. HARMFUL IF INHALED OR ABSORBED THROUGH SKIN. CONTACT MAY CAUSE BURNS TO ALL BODY TISSUE.

Health Rating: 1 - Slight

Flammability Rating: 2 - Moderate

Reactivity Rating: 2 - Moderate

Contact Rating: 1 - Slight

Lab Protective Equip: GOGGLES; LAB COAT; CLASS D EXTINGUISHER

Storage Color Code: Red (Flammable)

Potential Health Effects

Inhalation: Inhalation produces damaging effects on the mucous membranes and upper respiratory

tract. Symptoms may include irritation of the nose and throat, and labored breathing. May cause lung edema, a medical emergency.

Ingestion: Irritant due to formation of caustic lime by reaction with moisture. Large amounts may have a corrosive effect. Abdominal pain or stricture, possible nausea, vomiting, diarrhea are symptoms.

Skin Contact: Corrosive. Symptoms of redness, pain, and severe burn can occur.

Eye Contact: Corrosive. Causes redness, pain; possible burns and damage to eye tissues.

Chronic Exposure: Prolonged inhalation of dust or fume may cause severe mucous membrane irritation, chemical pneumonitis.

Aggravation of Pre-existing Conditions: No information found.

4. First Aid Measures

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Keep patient quiet in half upright position. Get medical attention immediately.

Ingestion: If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Skin Contact: Wipe off excess material from skin then immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

5. Fire Fighting Measures

Fire: Flammable solid, water reactive. Can react vigorously with water, steam, acids to release flammable/explosive hydrogen. Dangerous in presence of oxidants. Liquid calcium can react violently.

Explosion: Possible explosion hazard from generated hydrogen or intimate contact with strong oxidizers. Contact with alkali hydroxides or carbonates may cause detonation.

Fire Extinguishing Media: Use dry soda ash, dry salt, sand, graphite powder or metal-fire-extinguishing dry powder such as Met-L-X(R). Do not use water, foam, carbon dioxide, dry chemical, or chlorinated fire extinguishers.

Special Information: In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full-facepiece operated in the pressure demand or other positive pressure mode. Water spray may be used to keep fire-exposed containers cool. Do not allow contact of calcium with water. Finely divided calcium exposed to moist air may ignite spontaneously.

6. Accidental Release Measures

Collect spilled material quickly and transfer to a container of kerosene, light oil or similar hydrocarbon fluid for recovery. Minimize exposure to air. Do not use water on metal. If the spilled calcium has come into contact with water, proceed cautiously. The reaction can rapidly proceed to self-ignition of hydrogen and spattering of molten calcium. Evacuate the area, put on protective equipment and proceed as with a metal fire. Waste calcium should be packaged under a hydrocarbon fluid and sent to an approved disposal facility.

7. Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Keep away from water or locations where water may be needed for fire. Avoid high temperatures. Store under nitrogen or kerosene. Never store under halogenated hydrocarbons. A detached fire-resistive building is recommended for quantity storage. Isolate from air, acids, and oxidizing materials. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits: None established.

Ventilation System: A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Personal Respirators (NIOSH Approved): For conditions of use where exposure to the dust or mist is apparent, a full-face dust/mist respirator should be worn. For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-supplied respirator. **WARNING:** Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection: Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Eye Protection: Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance: Silver-gray granules or lumps.

Odor: Odorless.

Solubility: Reacts with water with evolution of hydrogen.

Density: 1.54

pH: Water solution alkaline (pH > 7).

% Volatiles by volume @ 21°C (70°F): 0

Boiling Point: 1440°C (2624°F)

Melting Point: 850°C (1562°F)

Vapor Density (Air=1): 1.4

Vapor Pressure (mm Hg): 10 @ 983°C (1801°F)

Evaporation Rate (BuAc=1): Not applicable.

10. Stability and Reactivity

Stability: Stable under ordinary conditions of use and storage. Water reactive.

Hazardous Decomposition Products: Hydrogen, caustic calcium oxide and calcium hydroxide.

Hazardous Polymerization: Will not occur.

Incompatibilities: Air, asbestos cement, halogens, lead dichloride phosphorus pentoxide, silicon, sodium, mixed oxides, sulfur, water, acids, alcohols. Contact with alkali hydroxides or carbonates may cause detonation.

Conditions to Avoid: Air, heat, flames, ignition sources and incompatibles.

11. Toxicological Information

No LD₅₀/LC₅₀ information found relating to normal routes of occupational exposure.

-----\Cancer Lists\-----

Ingredient	---NTP Carcinogen---		
	Known	Anticipated	IARC Category
Calcium (7440-70-2)	No	No	None

12. Ecological Information

Environmental Fate: No information found.

Environmental Toxicity: No information found.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA-approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Domestic (Land, D.O.T.)

Proper Shipping Name: CALCIUM

Hazard Class: 4.3

UN/NA: UN1401

Packing Group: II

International (Water, I.M.O.)

Proper Shipping Name: CALCIUM, METAL
Hazard Class: 4.3
UN/NA: UN1401
Packing Group: II

International (Air, I.C.A.O.)

Proper Shipping Name: CALCIUM, METAL
Hazard Class: 4.3
UN/NA: UN1401
Packing Group: II

15. Regulatory Information

-----\Chemical Inventory Status - Part 1\-----

<i>Ingredient</i>	<i>TSCA</i>	<i>EC</i>	<i>Japan</i>	<i>Australia</i>
<i>Calcium (7440-70-2)</i>	<i>Yes</i>	<i>Yes</i>	<i>No</i>	<i>Yes</i>

-----\Chemical Inventory Status - Part 2\-----

<i>Ingredient</i>	<i>Korea</i>	<i>DSL</i>	<i>NDSL</i>	<i>Phil.</i>
<i>Calcium (7440-70-2)</i>	<i>Yes</i>	<i>Yes</i>	<i>No</i>	<i>Yes</i>

-----\Federal, State & International Regulations - Part 1\-----

<i>Ingredient</i>	<i>-SARA 302- RQ</i>	<i>TPQ</i>	<i>-----SARA 313----- List</i>	<i>Chemical Catg.</i>
<i>Calcium (7440-70-2)</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>

-----\Federal, State & International Regulations - Part 2\-----

<i>Ingredient</i>	<i>CERCLA</i>	<i>-RCRA- 261.33</i>	<i>-TSCA- 8(d)</i>
<i>Calcium (7440-70-2)</i>	<i>No</i>	<i>No</i>	<i>No</i>

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No
SARA 311/312: Acute: Yes Chronic: Yes Fire: Yes Pressure: No
Reactivity: Yes (Pure / Solid)

WHMIS: This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

16. Other Information

NFPA Ratings: Health: 3 Flammability: 1 Reactivity: 2 Other: Water reactive

Label Hazard Warning: DANGER! FLAMMABLE SOLID. WATER REACTIVE. CORROSIVE. HARMFUL OR FATAL IF SWALLOWED. HARMFUL IF INHALED OR ABSORBED THROUGH SKIN. CONTACT MAY CAUSE BURNS TO ALL BODY TISSUE.

Label Precautions:

Do not get in eyes, on skin, or on clothing.

Do not breathe dust.

Use only with adequate ventilation.

Store in a tightly closed container.

Wash thoroughly after handling.

Remove and wash contaminated clothing promptly.

Do not allow contact with water, acids, or moisture.

Keep away from heat, sparks and flame.

Label First Aid: *If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In case of contact, wipe off excess material from skin then immediately flush eyes or skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. In all cases get medical attention immediately.*

Product Use: *Laboratory Reagent.*

Disclaimer:

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