

MATERIAL SAFETY DATA SHEET**CALCIUM HYDRIDE**

PRODUCT CODE NUMBER(S): 2540-1

PRODUCT IDENTIFICATION

Chemical Name and Synonyms: *Calcium hydride*
Chemical Family: *Metal hydride*
Chemical Formula: *CaH₂*
Product Use: *Laboratory reagent*
Manufacturer's Name and Address:
Caledon Laboratories Ltd.
40 Armstrong Avenue
Georgetown, Ontario L7G 4R9
Telephone No: *(905) 877-0101*
Fax No: *(905) 877-6666*
Emergency Telephone No: *CANUTEC (613) 996-6666*

HAZARDOUS INGREDIENTS OF MATERIALS

<i>Ingredients</i>	<i>%</i>	<i>TLV Units</i>	<i>CAS No.</i>
<i>Calcium hydride</i>	<i>>90</i>	<i>Not established</i>	<i>7789-78-8</i>

PHYSICAL DATA

Physical State: *Solid*
Odour and Appearance: *Greyish, crystalline powder*
Odour Threshold (ppm): *Not available*
Vapour Pressure (mm Hg): *Not available*
Vapour Density (Air = 1): *1.4*
Evaporation Rate: *Not available*
Boiling Point (degrees C): *Not applicable*
Melting Point (degrees C): *675°C (decomposes)*
pH: *Alkaline (aqueous solution)*
Specific Gravity: *1.7*
Coefficient of Water/Oil distribution: *Not available*

SHIPPING DESCRIPTION

UN: *1404*
T.D.G. Class: *4.3*
Pkg. Group: *I*

REACTIVITY DATA

Chemical Stability: *Unstable. Sensitive to moisture, can ignite spontaneously in moist air. Strong reducing agent. Contact with water liberates highly flammable gas.*
Incompatibility with other substances: *Violent reactions with alcohols, oxidizing agents, acids, bromates, chlorates, perchlorates, silver fluoride, tetrahydrofuran. Releases flammable/explosive hydrogen gas and caustic calcium hydroxide when heated.*
Reactivity: *Avoid exposure to heat, all ignition sources, water, air, all other incompatible materials. Avoid generation of dust.*
Hazardous Decomposition Products: *Hydrogen gas, caustic calcium oxide and calcium hydroxide*

FIRE AND EXPLOSION DATA

Flammability: *Flammable solid; can ignite spontaneously in moist air. Contact with moisture liberates highly flammable/explosive hydrogen gas. Dust dispersed in air may be explosive under certain conditions.*
Extinguishing Media: *Dry powder or sand. DO NOT USE WATER, foam, CO₂, or halon. Cool CLOSED containers, if it can be done without allowing chemical to come in contact with water, with flooding quantities of water. Fight fire from upwind, from a safe distance. Firefighters must wear protective equipment and clothing sufficient to prevent inhalation of dust or fumes, and contact with skin and eyes (Bunker Gear may not be adequate, chemical splash suit may be necessary).*
Flash Point (Method Used): *Not available*
Autoignition Temperature: *426 °C*
Upper Flammable Limit (% by volume): *Not available*
Lower Flammable Limit (% by volume): *Not available*
Hazardous Combustion Products: *Hydrogen gas*
Sensitivity to Impact: *None identified*
Sensitivity to Static discharge: *May be sensitive under certain conditions, when ignited by an electrostatic or other high-voltage spark, or other ignition source.*

TOXICOLOGICAL PROPERTIES AND HEALTH DATA

To the best of our knowledge, the physical, chemical and toxicological properties of this substance have not yet been thoroughly investigated.

Toxicological Data:

LD₅₀: *Not available*
LC₅₀: *Not available*

Effects of Acute Exposure to Product:

Inhaled: *Corrosive. Causes burns to tissue of upper respiratory tract, burning sensation, coughing, shortness of breath. Severe overexposure may cause pulmonary edema which can be fatal. Onset may be delayed for 48-72 hours.*
In contact with skin: *Corrosive. May cause severe burns with permanent tissue damage and scarring.*
In contact with eyes: *Corrosive. May cause burns to eye tissue with possible permanent damage to vision.*
Ingested: *Corrosive, causing burns due to release of caustic lime, and heat of hydrolysis. Symptoms are abdominal pain, nausea, vomiting. May cause severe damage to gastrointestinal tract.*

Effects of Chronic Exposure to Product:

No information available. Persons with pre-existing skin disease or impaired respiratory function may be more susceptible to the effects of this substance.
Carcinogenicity: *No information available*
Teratogenicity: *No information available*

CODE: 2540-1

Reproductive Effects: No information available**Mutagenicity:** No information available**Synergistic Products:** None known**PREVENTIVE MEASURES****Engineering Controls:** Local exhaust ventilation recommended.**Respiratory Protection:** Dust/mist mask. Use only in chemical fumehood. For conditions where dust or mist is present, to the maximum use specified by the respirator supplier, NIOSH approved full-face high-efficiency dust/mist filter respirator. Higher or unknown concentrations, or for fire or spill conditions, self-contained breathing apparatus, or full face-piece, positive-pressure supplied-air respirator.**Eye Protection:** Chemical safety goggles and/or face shield.**Skin Protection:** Impervious gloves. Other impervious clothing, sleeves, coverall, boots, sufficient to prevent contact.**Other Personal Protective Equipment:** Safety shower and eye-wash fountain in work area.**Leak and Spill Procedure:** Evacuate area. Immediately shut off all sources of ignition. Cleanup personnel must be thoroughly trained in the hazards of this material and its safe handling, and must wear protective equipment and clothing sufficient to prevent inhalation of dust or fumes, and contact with skin and eyes. Use non-sparking tools. Absorb on sand or other non-combustible absorbent, and place in containers for disposal. Prevent from entering sewers or waterways. Sweep spill site carefully to remove all traces of material and then wash thoroughly with running water. Contaminated absorbent may pose the same hazards as the material; treat with caution.**Waste Disposal:** Follow all federal, provincial and local regulations for disposal.**Handling Procedures and Equipment:** FLAMMABLE SOLID. Workers using this material must be thoroughly trained in its hazards and its safe use, and must wear appropriate protective equipment and clothing. Bond and ground containers and equipment in any process capable of generating dust or static electricity. Use non-sparking tools. Avoid generating dust. Empty only in inert or non-flammable atmosphere; emptying contents where flammable vapours could be present may cause flash fire or explosion due to electrostatic discharge. Use the smallest amount possible for the purpose in a designated area with adequate ventilation. Do not use in a sprinklered area. Keep work area free from all extraneous, combustible, or incompatible materials. Avoid contact with skin and eyes. Avoid inhaling dust. Empty containers may contain hazardous residues, including flammable/explosive hydrogen gas; treat with extreme caution.**Storage Requirements:** Store in suitable, labelled containers, in a cool, dry, well-ventilated area, out of direct sunlight. Store away from incompatible or combustible materials and ignition and heat sources. Keep containers tightly closed. Keep dry; releases flammable/explosive hydrogen gas in contact with moisture. Do not store in a sprinklered area. Protect from damage. Inspect frequently for signs of leaking or bulging.

while flushing. Take care not to flush contaminated water into unaffected eye. Wear impervious gloves to avoid contact during first aid procedures. Get medical attention immediately.

Skin: Wear impervious gloves to avoid contact during first aid procedures. Remove contaminated clothing, including watches, rings, belts, and shoes. Brush away excess chemical. Wash skin with cool, gently running water for at least fifteen (15) minutes. Get medical attention. Decontaminate clothing before reuse, or discard.**Inhalation:** Remove to fresh air. Give oxygen and get medical attention for any breathing difficulty. If breathing has stopped, give artificial respiration. Get medical attention immediately. If exposure was severe, monitor for pulmonary edema; onset of symptoms of pulmonary edema may be delayed; if victim has breathing problems during the next 24 -72 hours, get medical attention immediately.**Ingestion:** DO NOT INDUCE VOMITING. If casualty is alert and NOT convulsing, give 2 to 4 glasses of water to drink to dilute material. Get medical attention IMMEDIATELY. If spontaneous vomiting occurs; have casualty lean forward with head down to avoid breathing in of vomitus. Avoid contact with emesis. Rinse mouth and administer more water.**REFERENCES USED**

CCINFO disc

Budavari: The Merck Index, 12th ed., 1997

Sax, Lewis: Hawley's Condensed Chemical Dictionary, 11th ed., 1987

Sax: Dangerous Properties of Industrial Materials, 5th ed., 1979

Suppliers' Material Safety Data Sheets

ADDITIONAL INFORMATION**Date Issued:** May 15, 1995**Revision:** February 2011**MSDS:** 2540-1**Proposed WHMIS Designation:** B4; E; F

Prepared by: Caledon Laboratories Ltd. (905) 877-0101
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FIRST AID MEASURES**Specific Measures:****Eyes:** Flush thoroughly with gently running water for at least twenty to thirty (20-30) minutes, holding eyelids open