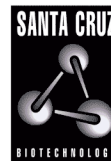


Lithium hydroxide: sc-211742



The Power to Question

MATERIAL SAFETY DATA SHEET

1 Identification of substance:

Product Name: Lithium hydroxide
Catalog Number: sc-211742
Supplier: Santa Cruz Biotechnology, Inc.
2145 Delaware Avenue
Santa Cruz, California 95060
800.457.3801 or 831.457.3800
Emergency: ChemWatch
Within the US & Canada: 877-715-9305
Outside the US & Canada: +800 2436 2255
(1-800-CHEMCALL) or call +613 9573 3112

2 Composition/Data on components:

Chemical characterization:
Description: (CAS#)
Lithium hydroxide (CAS# 1310-65-2)
Identification number(s):
EINECS Number: 215-183-4

3 Hazards identification

Hazard description:



T Toxic

Information pertaining to particular dangers for man and environment

R 22 Harmful if swallowed.

R 23 Toxic by inhalation.

R 35 Causes severe burns.

Classification system

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

HEALTH	4
FIRE	0
REACTIVITY	1

Health (acute effects) = 4

Flammability = 0

Reactivity = 1

GHS label elements



Danger

3.1/3 - Toxic if swallowed.

3.1/3 - Toxic if inhaled.



Danger

3.2/1A - Causes severe skin burns and eye damage.

Prevention:

Wear protective gloves/protective clothing/eye protection/face protection.

Response:

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Immediately call a POISON CENTER or doctor/physician.

4 First aid measures

General information Immediately remove any clothing soiled by the product.

After inhalation

Supply fresh air. If required, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

After skin contact

Immediately wash with water and soap and rinse thoroughly.

Seek immediate medical advice.

After eye contact

Rinse opened eye for several minutes under running water. Then consult a doctor.

After swallowing Seek immediate medical advice.

5 Fire fighting measures

Suitable extinguishing agents

Product is not flammable. Use fire fighting measures that suit the surrounding fire.

Special hazards caused by the material, its products of combustion or resulting gases:

In case of fire, the following can be released:

Lithium oxide

Protective equipment:

Wear self-contained respirator.

Wear fully protective impervious suit.

6 Accidental release measures

Person-related safety precautions:

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Measures for environmental protection:

Do not allow material to be released to the environment without proper governmental permits.

Measures for cleaning/collecting:

Use neutralizing agent.

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

Additional information:

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage

Handling

Information for safe handling:

Handle under dry protective gas.

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

Information about protection against explosions and fires: The product is not flammable

Storage

Requirements to be met by storerooms and receptacles: No special requirements.

Information about storage in one common storage facility:

Do not store together with acids.

Store away from air.

Store away from water/moisture.

Further information about storage conditions:

Store under dry inert gas.

This product is hygroscopic.

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

Protect from humidity and water.

This product is air sensitive.

8 Exposure controls and personal protection

Additional information about design of technical systems:

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Components with limit values that require monitoring at the workplace: Not required.

Additional information: No data

Personal protective equipment

General protective and hygienic measures

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

Breathing equipment: Use suitable respirator when high concentrations are present.

Protection of hands:

Check protective gloves prior to each use for their proper condition.

Impervious gloves

Material of gloves

The selection of suitable gloves not only depends on the material, but also on quality.

Quality will vary from manufacturer to manufacturer.

Eye protection:

Safety glasses

Tightly sealed goggles

Full face protection

Body protection: Protective work clothing.

9 Physical and chemical properties:

General Information	
Form:	Granules
Color:	White
Odor:	Odorless
Change in condition	
Melting point/Melting range:	462°C (864°F)
Boiling point/Boiling range:	924°C (1695°F)
Sublimation temperature / start:	Not determined
Flash point:	Not applicable
Ignition temperature:	Not determined
Decomposition temperature:	Not determined
Danger of explosion:	Product does not present an explosion hazard.
Explosion limits:	
Lower:	Not determined
Upper:	Not determined
Vapor pressure:	Not determined
Density at 20°C (68°F):	2.54 g/cm ³
Solubility in / Miscibility with	
Water at 20°C (68°F):	71 g/l
pH-value (0.4 g/l) at 20°C (68°F):	14

10 Stability and reactivity

Thermal decomposition / conditions to be avoided:

Decomposition will not occur if used and stored according to specifications.

Materials to be avoided:

Water/moisture

Air

Carbon dioxide

Acids

Aluminum/aluminum alloys.

Dangerous reactions No dangerous reactions known

Dangerous products of decomposition: Lithium oxide

11 Toxicological information

Acute toxicity:

LD/LC50 values that are relevant for classification:		
Oral	LD50	363 mg/kg (mouse) (RTECS)
		210 mg/kg (rat) (RTECS)
Inhalative	LC50/4H	960 mg/m3/4H (rat) (RTECS)

Primary irritant effect:

on the skin: Strong corrosive effect on skin and mucous membranes.

on the eye: Strong corrosive effect.

Sensitization: No sensitizing effects known.

Subacute to chronic toxicity:

Large amounts of lithium compounds may cause vomiting, diarrhea, ataxia, intestinal irritation, kidney injury, central nervous system depression and a drop in blood pressure. Central nervous system effects may include slurred speech, blurred vision, dizziness, sensory loss, convulsions and stupor. Chronic intake may cause neuromuscular effects such as tremor, ataxia, weakness, clonus and hyperactive reflexes. Lithium can cause kidney damage, gastrointestinal disturbances, fatigue, dehydration, weight loss, dermatological effects and thyroid damage. Lithium ion has shown teratogenic effects in rats and mice.

Subacute to chronic toxicity:

The Registry of Toxic Effects of Chemical Substances (RTECS) reports the following effects in laboratory animals:

Behavioral - somnolence (general depressed activity).

Behavioral - convulsions or effect on seizure threshold.

Nutritional and Gross Metabolic - weight loss or decreased weight gain.

Lungs, Thorax, or Respiration - other changes.

Blood - hemorrhage.

Blood - pigmented or nucleated red blood cells.

Liver - liver function tests impaired.

Subacute to chronic toxicity:

Corrosive materials are acutely destructive to the respiratory tract, eyes, skin and digestive tract. Eye contact may result in permanent damage and complete vision loss. Inhalation may result in respiratory effects such as inflammation, edema, and chemical pneumonitis. May cause coughing, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting. Ingestion may cause damage to the mouth, throat and esophagus. May cause skin burns or irritation depending on the severity of the exposure.

Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

Swallowing will lead to a strong corrosive effect on mouth and throat and to the danger of perforation of esophagus and stomach.

No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

12 Ecological information:

Additional ecological information:**General notes:**

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Do not allow material to be released to the environment without proper governmental permits. Rinse off of bigger amounts into drains or the aquatic environment may lead to increased pH-values. A high pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably reduced, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.

13 Disposal considerations

Product:

Recommendation Consult state, local or national regulations to ensure proper disposal.

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

Recommended cleansing agent: Water, if necessary with cleansing agents.

14 Transport information

DOT regulations:**Hazard class:**

8




Identification number:

UN2680

Packing group:

II

Proper shipping name (technical name): LITHIUM HYDROXIDE

Label	8
Land transport ADR/RID (cross-border)	
	
ADR/RID class:	8 (C6) Corrosive substances
Danger code (Kemler):	80
UN-Number:	2680
Packaging group:	II
Description of goods:	2680 LITHIUM HYDROXIDE
Maritime transport IMDG:	
	
IMDG Class:	8
UN Number:	2680
Label	8
Packaging group:	II
Marine pollutant:	No
Proper shipping name:	LITHIUM HYDROXIDE
Air transport ICAO-TI and IATA-DGR:	
	
ICAO/IATA Class:	8
UN/ID Number:	2680
Label	8
Packaging group:	II
Proper shipping name:	LITHIUM HYDROXIDE
UN "Model Regulation": UN2680, LITHIUM HYDROXIDE, 8, II	

15 Regulations

Product related hazard informations:

Hazard symbols:

T Toxic

Risk phrases:

22 Harmful if swallowed.
23 Toxic by inhalation.
35 Causes severe burns.

Safety phrases:

26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
45 In case of accident or if you feel unwell, seek medical advice immediately.

National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

All components of this product are listed on the Canadian Domestic Substances List (DSL).

Information about limitation of use: For use only by technically qualified individuals.

16 Other information:

The above information is believed to be correct but does not purport to be complete and should be used only as a guide. The burden of safe use of this material rests entirely with the user.