

# Lithium aluminum hydride

sc-215254



The Power to Question

## Material Safety Data Sheet

Hazard Alert Code  
Key:

EXTREME

HIGH

MODERATE

LOW

## Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

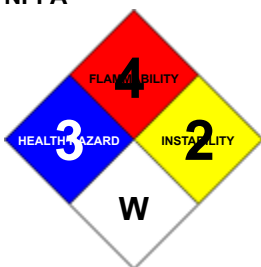
### PRODUCT NAME

Lithium aluminum hydride

### STATEMENT OF HAZARDOUS NATURE

CONSIDERED A HAZARDOUS SUBSTANCE ACCORDING TO OSHA 29 CFR 1910.1200.

### NFPA



### 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

### SYNONYMS

Li-Al-H<sub>4</sub>, Al-H<sub>4</sub>-Li, "lithium aluminum hydride", "lithium aluminum tetrahydride", "lithium aluminium tetrahydride", "lithium tetrahydroaluminate", "aluminate, tetrahydro-, lithium", "lithium aluminohydride", "aluminum lithium hydride", "lithium alanate", LAH

## Section 2 - HAZARDS IDENTIFICATION

### CHEMWATCH HAZARD RATINGS

	Min	Max	
Flammability	4		
Toxicity	2		
Body Contact	4		
Reactivity	2		
Chronic	2		

Min/Nil=0  
Low=1  
Moderate=2  
High=3  
Extreme=4



### CANADIAN WHMIS SYMBOLS



## CANADIAN WHMIS CLASSIFICATION

CAS 16853-85-3Lithium tetrahydroaluminate  
E-Corrosive Material

### EMERGENCY OVERVIEW

#### RISK

Causes severe burns.  
Risk of serious damage to eyes.  
Reacts violently with water liberating extremely flammable gases.  
Extremely flammable.

### POTENTIAL HEALTH EFFECTS

#### ACUTE HEALTH EFFECTS

##### SWALLOWED

- The material can produce severe chemical burns within the oral cavity and gastrointestinal tract following ingestion.
  - Ingestion of alkaline corrosives may produce burns around the mouth, ulcerations and swellings of the mucous membranes, profuse saliva production, with an inability to speak or swallow.
- Both the oesophagus and stomach may experience burning pain; vomiting and diarrhoea may follow.
- Accidental ingestion of the material may be damaging to the health of the individual.
  - Lithium, in large doses, can cause dizziness and weakness.
- If a low salt diet is in place, kidney damage can result.

##### EYE

- The material can produce severe chemical burns to the eye following direct contact. Vapors or mists may be extremely irritating.
  - If applied to the eyes, this material causes severe eye damage.
  - Direct eye contact with corrosive bases can cause pain and burns.
- There may be swelling, epithelium destruction, clouding of the cornea and inflammation of the iris.

##### SKIN

- The material can produce severe chemical burns following direct contact with the skin.
  - Skin contact is not thought to have harmful health effects (as classified under EC Directives); the material may still produce health damage following entry through wounds, lesions or abrasions.
  - Open cuts, abraded or irritated skin should not be exposed to this material.
  - Solution of material in moisture on the skin, or perspiration, may markedly increase skin corrosion and accelerate tissue destruction.
  - Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects.
- Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

##### INHALED

- The material can cause respiratory irritation in some persons.
- The body's response to such irritation can cause further lung damage.
- Inhaling corrosive bases may irritate the respiratory tract.
- Symptoms include cough, choking, pain and damage to the mucous membrane.
- Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled.
- If prior damage to the circulatory or nervous systems has occurred or if kidney damage has been sustained, proper screenings should be conducted on individuals who may be exposed to further risk if handling and use of the material result in excessive exposures.
- Inhalation of quantities of liquid mist may be extremely hazardous, even lethal due to spasm, extreme irritation of larynx and bronchi, chemical pneumonitis and pulmonary oedema.

##### CHRONIC HEALTH EFFECTS

- Repeated or prolonged exposure to corrosives may result in the erosion of teeth, inflammatory and ulcerative changes in the mouth and necrosis (rarely) of the jaw. Bronchial irritation, with cough, and frequent attacks of bronchial pneumonia may ensue. Gastrointestinal disturbances may also occur. Chronic exposures may result in dermatitis and/or conjunctivitis.
- Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems.
- Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.
- Lithium compounds can affect the nervous system and muscle. This can cause tremor, inco-ordination, spastic jerks and very brisk reflexes. They may cause birth defects and should not be used when pregnancy is suspected. They are effective in treating manic episodes of bipolar disorder. Restricting sodium in the diet increases the risks of taking lithium.
- Long term exposure to high dust concentrations may cause changes in lung function i.e. pneumoconiosis; caused by particles less than 0.5 micron penetrating and remaining in the lung. Prime symptom is breathlessness; lung shadows show on X-ray.

### Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
lithium aluminium hydride	16853-85-3	>95
reacts with water to generate		
<a href="#">lithium hydroxide</a>	1310-66-3	
<a href="#">hydrogen</a>	1333-74-0	

### Section 4 - FIRST AID MEASURES

#### SWALLOWED

- For advice, contact a Poisons Information Centre or a doctor at once.
- Urgent hospital treatment is likely to be needed.
- If swallowed do NOT induce vomiting.
- If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.

#### EYE

If this product comes in contact with the eyes

- Immediately hold eyelids apart and flush the eye continuously with running water.
- Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
- Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.
- Transport to hospital or doctor without delay.

#### SKIN

If skin or hair contact occurs

- Immediately flush body and clothes with large amounts of water, using safety shower if available.
- Quickly remove all contaminated clothing, including footwear.
- Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre.
- Transport to hospital, or doctor.

#### INHALED

- If fumes or combustion products are inhaled remove from contaminated area.
- Lay patient down. Keep warm and rested.
- Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
- Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.

#### NOTES TO PHYSICIAN

- For acute or short-term repeated exposures to highly alkaline materials
- Respiratory stress is uncommon but present occasionally because of soft tissue edema.
- Unless endotracheal intubation can be accomplished under direct vision, cricothyroidotomy or tracheotomy may be necessary.
- Oxygen is given as indicated.
- The presence of shock suggests perforation and mandates an intravenous line and fluid administration.

Clinical effects of lithium intoxication appear to relate to duration of exposure as well as to level.

- Lithium produces a generalised slowing of the electroencephalogram; the anion gap may increase in severe cases.
- Emesis (or lavage if the patient is obtunded or convulsing) is indicated for ingestions exceeding 40 mg (Li)/Kg.
- Overdose may delay absorption; decontamination measures may be more effective several hours after cathartics.
- Charcoal is not useful. No clinical data are available to guide the administration of catharsis.

### Section 5 - FIRE FIGHTING MEASURES

Vapor Pressure (mmHG)	Not applicable.
Upper Explosive Limit (%)	Not available.
Specific Gravity (water=1)	0.92
Lower Explosive Limit (%)	Not available.

#### EXTINGUISHING MEDIA

DO NOT USE WATER, CO2 OR FOAM ON SUBSTANCE ITSELF  
For SMALL FIRES

- Dry chemical, soda ash or lime.

For LARGE FIRES

- DRY sand, dry chemical, soda ash;
- OR withdraw and allow fire to burn itself out.

Powdered limestone, powdered graphite or powdered salt.

Dry powder containing powdered graphite. [TRADE NAMES]

#### **FIRE FIGHTING**

- Alert Fire Brigade and tell them location and nature of hazard.
- May be violently or explosively reactive.
- Wear full protective clothing plus breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water course.

When any large container (including road and rail tankers) is involved in a fire, consider evacuation by 800 metres in all directions.

#### **GENERAL FIRE HAZARDS/HAZARDOUS COMBUSTIBLE PRODUCTS**

- Solid in contact with water or moisture may generate sufficient heat to ignite combustible materials.
- May ignite on contact with air, moist air or water.
- May react vigorously or explosively on contact with water.
- May decompose explosively when heated or involved in fire.
- May REIGNITE after fire is extinguished.

#### **FIRE INCOMPATIBILITY**

Lithium aluminium hydride

- can burn in heated or moist air.
- reaction with water is vigorous and produces flammable hydrogen gas.
- at elevated temperatures the hydride may reduce carbon dioxide or sodium hydrogen carbonate to methane and ethane; these are probably the explosive reaction products produced when carbon dioxide extinguishers are used on lithium aluminium hydride fires.
- reaction with hydroxy compounds such as alcohols and carboxylic acids is vigorous
- Segregate from alcohol, water.
- NOTE May develop pressure in containers; open carefully. Vent periodically.
- Keep dry

## **Section 6 - ACCIDENTAL RELEASE MEASURES**

#### **MINOR SPILLS**

- Material from spill may be contaminated with water resulting in generation of gas which subsequently may pressure closed containers.
- Hold spill material in vented containers only and plan for prompt disposal
- Eliminate all ignition sources.
- Cover with DRY earth, sand or other non-combustible material.
- Then cover with plastic sheet to minimise spreading and to prevent exposure to rain or other sources of water.
- Use clean, non-sparking tools to collect absorbed material and place into loosely-covered metal or plastic containers ready for disposal.

#### **MAJOR SPILLS**

- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.
- Eliminate all ignition sources (no smoking, flares, sparks or flames)
- Stop leak if safe to do so; prevent entry into waterways, drains or confined spaces.

## **Section 7 - HANDLING AND STORAGE**

#### **PROCEDURE FOR HANDLING**

- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of overexposure occurs.
- Use in a well-ventilated area.
- Avoid contact with moisture.

#### **RECOMMENDED STORAGE METHODS**

- Glass container is suitable for laboratory quantities
- Storage containers must be hermetically sealed; the product must be stored under an inert, dry gas.

For low viscosity materials and solids

Drums and jerricans must be of the non-removable head type.

Where a can is to be used as an inner package, the can must have a screwed enclosure.<.

#### **STORAGE REQUIREMENTS**

KEEP DRY! Packages must be protected from water ingress.

FOR MINOR QUANTITIES

- Store in an indoor fireproof cabinet or in a room of noncombustible construction and

- provide adequate portable fire-extinguishers in or near the storage area.

FOR PACKAGE STORAGE

- Store in original containers in approved flame-proof area.
- No smoking, naked lights, heat or ignition sources.

Store under inert gas, e.g. argon.

**Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION**

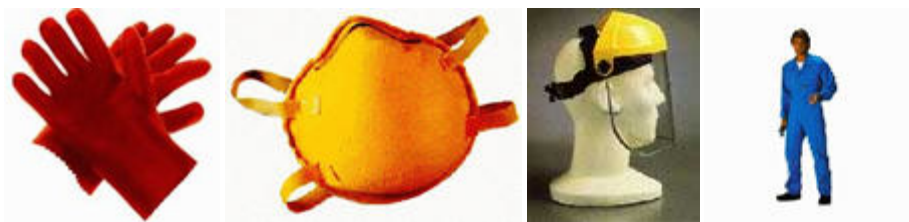
**EXPOSURE CONTROLS**

Source	Material	TWA ppm	TWA mg/m <sup>3</sup>	STEL ppm	STEL mg/m <sup>3</sup>	Peak ppm	Peak mg/m <sup>3</sup>	TWA F/CC	Notes
US - California Permissible Exposure Limits for Chemical Contaminants	lithium aluminium hydride (Aluminum welding fumes)		5						
Canada - British Columbia Occupational Exposure Limits	lithium hydroxide (Lithium hydroxide)						C 1		
Canada - Ontario Occupational Exposure Limits	lithium hydroxide (Anhydrous / anhydre)				1				
US AIHA Workplace Environmental Exposure Levels (WEELs)	lithium hydroxide (Lithium Hydroxide)						1		
Canada - British Columbia Occupational Exposure Limits	hydrogen (Hydrogen)			Simple	Simple				
Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances	hydrogen (Hydrogen)		(See Table 12)						

US - Oregon Permissible Exposure Limits (Z-1)  
hydrogen (Hydrogen) 1,000 -

Bold print identifies substances for which the Oregon Permissible Exposure Limits (PELs) are different than the federal Limits.

**PERSONAL PROTECTION**



## RESPIRATOR

- Particulate. (AS/NZS 1716 & 1715, EN 1432000 & 1492001, ANSI Z88 or national equivalent)

## EYE

- Safety glasses with unperforated side shields may be used where continuous eye protection is desirable, as in laboratories; spectacles are not sufficient where complete eye protection is needed such as when handling bulk-quantities, where there is a danger of splashing, or if the material may be under pressure
- Chemical goggles whenever there is a danger of the material coming in contact with the eyes; goggles must be properly fitted
- Full face shield (20 cm, 8 in minimum) may be required for supplementary but never for primary protection of eyes; these afford face protection.
- Alternatively a gas mask may replace splash goggles and face shields.

## HANDS/FEET

- Elbow length PVC gloves

Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include

- frequency and duration of contact,
- chemical resistance of glove material,
- glove thickness and
- dexterity
- Neoprene gloves

## OTHER

- Protective overalls, closely fitted at neck and wrist.
- Eye-wash unit.

## IN CONFINED SPACES

- Non-sparking protective boots
- Static-free clothing.
- Some plastic personal protective equipment (PPE) (e.g. gloves, aprons, overshoes) are not recommended as they may produce static electricity.
- For large scale or continuous use wear tight-weave non-static clothing (no metallic fasteners, cuffs or pockets), non sparking safety footwear.

## ENGINEERING CONTROLS

■ Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.

The basic types of engineering controls are

Process controls which involve changing the way a job activity or process is done to reduce the risk.

Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.

## Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

### PHYSICAL PROPERTIES

Solid.

Alkaline.

State	Divided solid	Molecular Weight	37.95
Melting Range (°F)	Not available.	Viscosity	Not available
Boiling Range (°F)	>257 decomposes	Solubility in water (g/L)	Reacts violently
Flash Point (°F)	Not available.	pH (1% solution)	> 7
Decomposition Temp (°F)	Not available	pH (as supplied)	Not applicable
Autoignition Temp (°F)	Not available.	Vapor Pressure (mmHG)	Not applicable.
Upper Explosive Limit (%)	Not available.	Specific Gravity (water=1)	0.92
Lower Explosive Limit (%)	Not available.	Relative Vapor Density (air=1)	Not applicable.

Volatile Component (%vol)	Not applicable.	Evaporation Rate	Not applicable
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## APPEARANCE

Powder; odorless. Very powerful reducer. It is hygroscopic and unstable in the presence of moisture. Reacts vigorously with water to produce lithium hydroxide and flammable hydrogen gas. Soluble in diethyl ether, tetrahydrofuran, dimethylcellosolve; slightly soluble in dibutyl ether; insoluble or very slightly soluble in hydrocarbons and dioxane. Decomposes above 125 C. to lithium hydride, aluminium metal and hydrogen gas.

## Section 10 - CHEMICAL STABILITY

### CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of elevated temperatures.
- Presence of incompatible materials
- May heat spontaneously
- Identify and remove sources of ignition and heating.
- Incompatible material, especially oxidizers, and/or other sources of oxygen may produce unstable product(s).
- Avoid sources of water contamination (e.g. rain water, moisture, high humidity).

### STORAGE INCOMPATIBILITY

- Lithium aluminium hydride
  - ignites spontaneously in air and/ or heat above 125 deg C.
  - reacts violently with water, evolving heat, flammable hydrogen, aluminium, lithium hydride with possible ignition
  - reacts violently with oxidizers, acids, alcohols, aldehydes, benzoyl peroxide, boron trifluoride, carbon dioxide, 3-chloromethylfuran, 1,2-dimethoxyethane, 3,5-dibromocyclopentene, ethers, ethyl acetate, fluoramides, glycols, ketones, nitrogenous organic compounds, perfluorosuccinamide, pyridine, tetrahydrofuran
  - reacts violently with many standard fire extinguishers (water, foam, carbon dioxide, halogenated agents, or other dry powders)
  - Inorganic reducing agents react with oxidizing agents to generate heat and products that may be flammable, combustible, or otherwise reactive. Their reactions with oxidizing agents may be violent.
  - Incidents involving interaction of active oxidants and reducing agents, either by design or accident, are usually very energetic and examples of so-called redox reactions.
  - Contact with water liberates highly flammable gases
  - Segregate from alcohol, water.
  - Avoid strong acids, acid chlorides, acid anhydrides and chloroformates.
  - Avoid contact with copper, aluminium and their alloys.
  - NOTE May develop pressure in containers; open carefully. Vent periodically.

For incompatible materials - refer to Section 7 - Handling and Storage.

## Section 11 - TOXICOLOGICAL INFORMATION

lithium aluminium hydride

### TOXICITY AND IRRITATION

■ Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound.

No significant acute toxicological data identified in literature search.

### CARCINOGEN

lithium aluminium hydride	US - Rhode Island Hazardous Substance List	IARC
hydrogen	US - Rhode Island Hazardous Substance List	IARC

## Section 12 - ECOLOGICAL INFORMATION

This material and its container must be disposed of as hazardous waste.

### Ecotoxicity

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
lithium hydroxide	No Data Available	No Data Available		
hydrogen	No Data Available	No Data Available		

## Section 13 - DISPOSAL CONSIDERATIONS

### US EPA Waste Number & Descriptions

A. General Product Information

Reactivity characteristic: use EPA hazardous waste number D003 (waste code R).

### Disposal Instructions

All waste must be handled in accordance with local, state and federal regulations.

For small quantities:

- Cautiously add the material to dry butanol in an appropriate solvent.
- Reaction may be vigorous and exothermic.
- Large volumes of flammable hydrogen may be generated and venting procedures should be conducted in a flame-proof environment.
- Neutralise the solution with aqueous acid, filter and burn the liquid portion in an approved incinerator.

Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.

A Hierarchy of Controls seems to be common - the user should investigate:

- Reduction
- Reuse
- Recycling
- Disposal (if all else fails)

This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate. In most instances the supplier of the material should be consulted.

- DO NOT allow wash water from cleaning or process equipment to enter drains.
- It may be necessary to collect all wash water for treatment before disposal.
- In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.
- Where in doubt contact the responsible authority.
- Recycle wherever possible.
- Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.
- Dispose of by: burial in a land-fill specifically licenced to accept chemical and / or pharmaceutical wastes or Incineration in a licenced apparatus (after admixture with suitable combustible material)
- Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.
- Recycle where possible.
- Consult State Land Waste Management Authority for disposal.
- Bury residue and dispose of containers/ packaging in authorized landfill.

## Section 14 - TRANSPORTATION INFORMATION

### DOT:

Symbols:	None	Hazard class or Division:	4.3
Identification Numbers:	UN1410	PG:	I
Label Codes:	4.3	Special provisions:	A19
Packaging: Exceptions:	None	Packaging: Non-bulk:	211
Packaging: Exceptions:	None	Quantity limitations: Passenger aircraft/rail:	Forbidden
Quantity Limitations: Cargo aircraft only:	15 kg	Vessel stowage: Location:	E
Vessel stowage: Other:	52		

Hazardous materials descriptions and proper shipping names:

Lithium aluminum hydride

### Air Transport IATA:

ICAO/IATA Class:	4.3	ICAO/IATA Subrisk:	None
UN/ID Number:	1410	Packing Group:	I
Special provisions:	None		

Cargo Only



Packing Instructions:	487	Maximum Qty/Pack:	15 kg
Passenger and Cargo		Passenger and Cargo	
Packing Instructions:	Forbidden	Maximum Qty/Pack:	Forbidden
Passenger and Cargo		Passenger and Cargo	
Limited Quantity		Limited Quantity	
Packing Instructions:	Forbidden	Maximum Qty/Pack:	Forbidden

■ Air transport may be forbidden if this material is flammable, corrosive or toxic gases may be released under normal conditions of transport.

Shipping name: LITHIUM ALUMINIUM HYDRIDE

**Maritime Transport IMDG:**

IMDG Class:	4.3	IMDG Subrisk:	None
UN Number:	1410	Packing Group:	I
EMS Number:	F-G,S-M	Special provisions:	None

Limited Quantities: 0

Shipping name: LITHIUM ALUMINIUM HYDRIDE

**Section 15 - REGULATORY INFORMATION**

**lithium aluminium hydride (CAS: 16853-85-3) is found on the following regulatory lists;**

"Canada CEPA Environmental Registry Substance Lists - List of substances on the DSL that meet the ecological criteria for categorization (English)", "Canada Domestic Substances List (DSL)", "Canada Ingredient Disclosure List (SOR/88-64)", "Canada Non-Domestic Substances List (NDSL)", "Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS (English)", "US - Massachusetts Oil & Hazardous Material List", "US - New Jersey Right to Know Hazardous Substances", "US - Pennsylvania - Hazardous Substance List", "US - Rhode Island Hazardous Substance List", "US DOE Temporary Emergency Exposure Limits (TEELs)", "US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory"

**Regulations for ingredients**

**lithium hydroxide (CAS: 1310-66-3, 1310-65-2) is found on the following regulatory lists;**

"Canada - Ontario Occupational Exposure Limits", "Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS (English)", "US - Minnesota Hazardous Substance List", "US - New Jersey Right to Know Hazardous Substances", "US DOE Temporary Emergency Exposure Limits (TEELs)"

**hydrogen (CAS: 1333-74-0) is found on the following regulatory lists;**

"Canada - Alberta Occupational Exposure Limits", "Canada - British Columbia Occupational Exposure Limits", "Canada - Nova Scotia Occupational Exposure Limits", "Canada - Prince Edward Island Occupational Exposure Limits", "Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English)", "Canada - Saskatchewan Industrial Hazardous Substances", "Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances", "Canada Domestic Substances List (DSL)", "Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS (English)", "International Council of Chemical Associations (ICCA) - High Production Volume List", "US - California Occupational Safety and Health Regulations (CAL/OSHA) - Hazardous Substances List", "US - California Permissible Exposure Limits for Chemical Contaminants", "US - Delaware Pollutant Discharge Requirements - Reportable Quantities", "US - Massachusetts Oil & Hazardous Material List", "US - Minnesota Hazardous Substance List", "US - New Jersey Right to Know Hazardous Substances", "US - Oregon Permissible Exposure Limits (Z-1)", "US - Pennsylvania - Hazardous Substance List", "US - Rhode Island Hazardous Substance List", "US - Washington Permissible exposure limits of air contaminants", "US ACGIH Threshold Limit Values (TLV)", "US Department of Homeland Security Chemical Facility Anti-Terrorism Standards - Chemicals of Interest", "US DOE Temporary Emergency Exposure Limits (TEELs)", "US EPA High Production Volume Chemicals Additional List", "US FDA Indirect Food Additives: Adhesives and Components of Coatings - Substances for Use Only as Components of Adhesives - Adhesives", "US List of Lists - Consolidated List of Chemicals Subject to EPCRA, CERCLA and Section 112(r) of the Clean Air Act", "US NFPA 45 Fire Protection for Laboratories Using Chemicals - Flammability Characteristics of Common Compressed and Liquefied Gases", "US Spacecraft Maximum Allowable Concentrations (SMACs) for Airborne Contaminants", "US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory", "US TSCA Section 8 (a) Inventory Update Rule (IUR) - Partial Exemptions"

**Section 16 - OTHER INFORMATION**

**LIMITED EVIDENCE**

■ Ingestion may produce health damage\*.

- Cumulative effects may result following exposure\*.
  - Possible risk of harm to breastfed babies\*.
- \* (limited evidence).

### Ingredients with multiple CAS Nos

Ingredient Name	CAS
lithium hydroxide	1310-66-3, 1310-65-2

- Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

A list of reference resources used to assist the committee may be found at:

[www.chemwatch.net/references](http://www.chemwatch.net/references).

- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings.

- For detailed advice on Personal Protective Equipment, refer to the following U.S. Regulations and Standards:

OSHA Standards - 29 CFR:

1910.132 - Personal Protective Equipment - General requirements

1910.133 - Eye and face protection

1910.134 - Respiratory Protection

1910.136 - Occupational foot protection

1910.138 - Hand Protection

Eye and face protection - ANSI Z87.1

Foot protection - ANSI Z41

Respirators must be NIOSH approved.

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