

Lithium hydride

sc-250259



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 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

LiH

Section 2 - HAZARDS IDENTIFICATION

CHEMWATCH HAZARD RATINGS

	Min	Max
Flammability	3	
Toxicity	3	
Body Contact	3	
Reactivity	2	
Chronic	2	

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



CANADIAN WHMIS SYMBOLS



EMERGENCY OVERVIEW

RISK

Causes burns.

Risk of serious damage to eyes.

Reacts violently with water liberating extremely flammable gases.

Toxic by inhalation and if swallowed.

Highly flammable.

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

■ The material can produce chemical burns within the oral cavity and gastrointestinal tract following ingestion.

■ Toxic effects may result from the accidental ingestion of the material; animal experiments indicate that ingestion of less than 40 gram may be fatal or may produce serious damage 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.

■ 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 esophagus and stomach may experience burning pain; vomiting and diarrhea may follow.

EYE

■ The material can produce 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.

■ Atmospheres containing 0.

5 mg/m³ lithium hydride produce lachrymation.

■ 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 chemical burns following direct contact with the skin.

■ This material can cause inflammation of the skin on contact in some persons.

■ The material may accentuate any pre-existing dermatitis condition.

■ In atmospheres containing 0.

5 mg/m³ lithium hydride skin becomes inflamed Prolonged contact may result in deep ulceration.

■ 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

■ Inhalation of dusts, generated by the material, during the course of normal handling, may produce toxic effects.

■ The material can cause respiratory irritation in some persons.

The body's response to such irritation can cause further lung damage.

■ Inhalation of lithium hydride dusts may produce burning sensation, coughing and wheezing.

The maximum tolerable in air for brief periods is 0.

■ 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.

CHRONIC HEALTH EFFECTS

■ Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems.

Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health

effects involving organs or biochemical systems.

Lithium compounds can affect the nervous system and muscle. This can cause tremor, inco-ordination, spastic jerks and very brisk reflexes.

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.

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.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
lithium hydride	7580-67-8	>98
reacts with water to generate		
lithium hydroxide	1310-66-3	
hydrogen	1333-74-0	

Section 4 - FIRST AID MEASURES

SWALLOWED

- IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY.
- Where Medical attention is not immediately available or where the patient is more than 15 minutes from a hospital or unless instructed otherwise

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.

SKIN

If skin contact occurs

- Immediately remove all contaminated clothing, including footwear
- Flush skin and hair with running water (and soap if available).

INHALED

- If fumes or combustion products are inhaled remove from contaminated area.
- Lay patient down. Keep warm and rested.

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.

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

- Lithium produce a generalized 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.

Section 5 - FIRE FIGHTING MEASURES

Vapour Pressure (mmHG)	Negligible
Upper Explosive Limit (%)	Not available
Specific Gravity (water=1)	0.76-0.77
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;

FIRE FIGHTING

- Alert Emergency Responders and tell them location and nature of hazard.
- May be violently or explosively reactive.

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.

Combustion products include metal oxides.

FIRE INCOMPATIBILITY

Segregate from alcohol, water.

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FIRE INCOMPATIBILITY

Segregate from alcohol, water.

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.

MAJOR SPILLS

- Clear area of personnel and move upwind.
- Alert Emergency Responders and tell them location and nature of hazard.

Section 7 - HANDLING AND STORAGE**PROCEDURE FOR HANDLING**

- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of overexposure occurs.

RECOMMENDED STORAGE METHODS

Glass container.

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.

Store under inert gas, e.g. nitrogen

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

Source	Material	TWA ppm	TWA mg/m ³	STEL ppm	STEL mg/m ³	Peak ppm	Peak mg/m ³	TWA F/CC	Notes
Canada - Alberta Occupational Exposure Limits	lithium hydride (Lithium hydride)		0.025						
Canada - British Columbia Occupational Exposure Limits	lithium hydride (Lithium hydride)		0.025						
US NIOSH Recommended Exposure Limits (RELs)	lithium hydride (Lithium hydride)		0.025						
US OSHA Permissible Exposure Levels (PELs) - Table Z1	lithium hydride (Lithium hydride)		0.025						
US - Minnesota Permissible Exposure Limits (PELs)	lithium hydride (Lithium hydride)		0.025						
US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants	lithium hydride (Lithium hydride)		0.025						
US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants	lithium hydride (Lithium hydride)		0.025						
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	lithium hydride (Lithium hydride)		0.025						

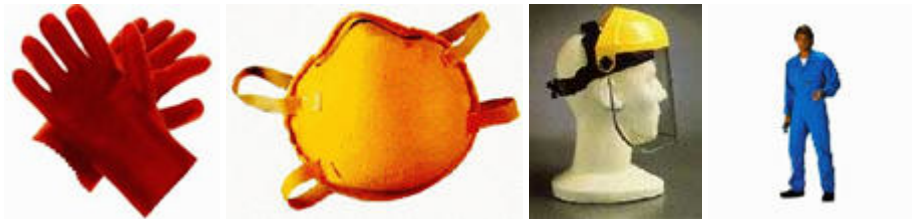
US - California Permissible Exposure Limits for Chemical Contaminants	lithium hydride (Lithium hydride)	0.025		
US - Idaho - Limits for Air Contaminants	lithium hydride (Lithium hydride)	0.025		
Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English)	lithium hydride (Lithium hydride)	0.025		
US - Hawaii Air Contaminant Limits	lithium hydride (Lithium hydride)	0.025		
US - Alaska Limits for Air Contaminants	lithium hydride (Lithium hydride)	0.025		
Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits	lithium hydride (Lithium hydride)	0.025	0.075	
Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances	lithium hydride (Lithium hydride)	0.025	0.025	
US - Washington Permissible exposure limits of air contaminants	lithium hydride (Lithium hydride)	0.025	0.075	
US - Michigan Exposure Limits for Air Contaminants	lithium hydride (Lithium hydride)	0.025		
Canada - Prince Edward Island Occupational Exposure Limits	lithium hydride (Lithium hydride)	0.025		TLV Basis skin, eye & upper respiratory tract irritation
US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants	lithium hydride (Lithium hydride)	0.025		
Canada - Nova Scotia Occupational Exposure Limits	lithium hydride (Lithium hydride)	0.025		TLV Basis skin, eye & upper respiratory tract irritation
US - Oregon Permissible Exposure Limits (Z-1)	lithium hydride (Lithium hydride)	0.025		

Canada - Northwest Territories Occupational Exposure Limits (English)	lithium hydride (Lithium hydride)	0.025	0.075
Canada - British Columbia Occupational Exposure Limits	lithium hydroxide (Lithium hydroxide)		1
Canada - Ontario Occupational Exposure Limits	lithium hydroxide (Anhydrous / anhydre)		1
US AIHA Workplace Environmental Exposure Levels (WEELs)	lithium hydroxide (Lithium Hydroxide)		1
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 side shields.
- Chemical goggles.

HANDS/FEET

Wear chemical protective gloves, eg. PVC.

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

Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).

- When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.
- When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.
- Contaminated gloves should be replaced.

Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.

- Neoprene gloves

OTHER

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

IN CONFINED SPACES

- Non-sparking protective boots
- Static-free clothing.
- Ensure availability of lifeline.

Staff should be trained in all aspects of rescue work.

Rescue gear Two sets of SCUBA breathing apparatus Rescue Harness, lines etc.

- 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

- Local exhaust ventilation is required where solids are handled as powders or crystals; even when particulates are relatively large, a certain proportion will be powdered by mutual friction.
- Exhaust ventilation should be designed to prevent accumulation and recirculation of particulates in the workplace.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL PROPERTIES

Solid.

Alkaline.

State	Divided solid	Molecular Weight	7.95
Melting Range (°F)	1256	Viscosity	Not Applicable
Boiling Range (°F)	Not available	Solubility in water (g/L)	Reacts violently
Flash Point (°F)	Not Available	pH (1% solution)	Not applicable
Decomposition Temp (°F)	Not Available	pH (as supplied)	Not applicable
Autoignition Temp (°F)	392	Vapour Pressure (mmHG)	Negligible
Upper Explosive Limit (%)	Not available	Specific Gravity (water=1)	0.76-0.77
Lower Explosive Limit (%)	Not available	Relative Vapor Density (air=1)	Not applicable
Volatile Component (%vol)	Negligible	Evaporation Rate	Not applicable

APPEARANCE

Crystalline powder; reacts with water. to produce hydrogen (1 gm of water liberates 2.8 lt H₂ at STP). No known solvent.

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.

STORAGE INCOMPATIBILITY

‡ Lithium hydride

- is hygroscopic and pyrophoric
- is a powerful reducing agent
- can burn in heated or moist air
- is thermally unstable; dust, powder or solid material ignites spontaneously in moist air and/ or elevated temperatures above 400 deg. C.
- reacts violently with water, evolving heat, large amounts of flammable hydrogen and caustic lithium hydroxide, with ignition
- explodes or ignites on contact with strong oxidisers, dinitrogen oxide, epoxides, liquid oxygen, nitrous oxides, metal salts
- the powdered material (as opposed to pelletised form UN No 2805) burns readily in air or nitrous oxide (dinitrogen oxide); mixtures of the powdered hydride and liquid oxygen are detonatable explosives.
- is incompatible with halogenated hydrocarbons, acids, and other substances; can cause fire and explosions
- reacts with many standard fire extinguishers water, carbon dioxide, foam, halogenated agents, or other dry powders
- reacts vigorously with hydroxy compounds such as alcohols and carboxylic acids
- should be stored or packed under nitrogen gas
- Metals and their oxides or salts may react violently with chlorine trifluoride and bromine trifluoride.
- These trifluorides are hypergolic oxidisers. They ignite on contact (without external source of heat or ignition) with recognised fuels - contact with these materials, following an ambient or slightly elevated temperature, is often violent and may produce ignition.
- The state of subdivision may affect the results.
- 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.

- 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 hydride

TOXICITY AND IRRITATION

unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

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. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. Industrial bronchitis, on the other hand, is a disorder that occurs as result of exposure due to high concentrations of irritating substance (often particulate in nature) and is completely reversible after exposure ceases. The disorder is characterised by dyspnea, cough and mucus production.

LITHIUM HYDRIDE

TOXICITY	IRRITATION
Inhalation (Human) TCLo 0.2 mg/m ³ /4h	Eye (rabbit) 5 mg/m ³
Oral (Rat) LD50 77.5 mg/kg	Eye (guinea pig) 5 mg/m ³
Inhalation (Rat) LC 10 mg/m ³ /4h	
Subcutaneous (Rat) LD50 50 mg/kg	
Subcutaneous (Rabbit) LD50 44.6 mg/kg	
Intravenous (Rabbit) LD50 20 mg/kg	
TOXICITY	IRRITATION

LITHIUM HYDROXIDE

Inhalation (rat) LD50 960 mg/kg	Nil Reported
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The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.

HYDROGEN

No significant acute toxicological data identified in literature search.

CARCINOGEN

lithium 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.

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.

‡ Puncture containers to prevent re-use and bury at an authorized landfill.

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.

DO NOT allow wash water from cleaning equipment to enter drains. Collect all wash water for treatment before disposal.

- Recycle wherever possible.
- Consult manufacturer for recycling options or consult Waste Management Authority for disposal if no suitable treatment or disposal facility can be identified.
- Recycle where possible.

- Consult Waste Management Authority for disposal.
- For small quantities:
- Cautiously add the material to dry butanol in an appropriate solvent.
 - Reaction may be vigorous and exothermic.

Section 14 - TRANSPORTATION INFORMATION

DOT:

Symbols:	None	Hazard class or Division:	4.3
Identification Numbers:	UN1414	PG:	I
Label Codes:	4.3	Special provisions:	A19, N40
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 hydride

Air Transport IATA:

ICAO/IATA Subrisk:	None	UN/ID Number:	1414
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 Limited Quantity	
Passenger and Cargo Limited Quantity		Packing Instructions:	Forbidden
Maximum Qty/Pack:	Forbidden	<ul style="list-style-type: none"> ■ 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 HYDRIDE

Maritime Transport IMDG:

IMDG Class:	4.3	IMDG Subrisk:	None
UN Number:	1414	Packing Group:	I
EMS Number:	F-G,S-N	Special provisions:	None
Limited Quantities:	0		

Shipping Name: LITHIUM HYDRIDE

Section 15 - REGULATORY INFORMATION

lithium hydride (CAS: 7580-67-8) is found on the following regulatory lists;

"Canada - Alberta Occupational Exposure Limits","Canada - British Columbia Occupational Exposure

Limits","Canada - Northwest Territories Occupational Exposure Limits (English)","Canada - Nova Scotia Occupational Exposure Limits","Canada - Prince Edward Island Occupational Exposure Limits","Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English)","Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits","Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances","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 - Alaska Limits for Air Contaminants","US - California Occupational Safety and Health Regulations (CAL/OSHA) - Hazardous Substances List","US - California Permissible Exposure Limits for Chemical Contaminants","US - Connecticut Hazardous Air Pollutants","US - Hawaii Air Contaminant Limits","US - Idaho - Limits for Air Contaminants","US - Massachusetts Oil & Hazardous Material List","US - Michigan Exposure Limits for Air Contaminants","US - Minnesota Hazardous Substance List","US - Minnesota Permissible Exposure Limits (PELs)","US - Oregon Permissible Exposure Limits (Z-1)","US - Pennsylvania - Hazardous Substance List","US - Rhode Island Hazardous Substance List","US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants","US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants","US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants","US - Washington Permissible exposure limits of air contaminants","US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants","US ACGIH Threshold Limit Values (TLV)","US DOE Temporary Emergency Exposure Limits (TEELs)","US List of Lists - Consolidated List of Chemicals Subject to EPCRA, CERCLA and Section 112(r) of the Clean Air Act","US NIOSH Recommended Exposure Limits (RELs)","US OSHA Permissible Exposure Levels (PELs) - Table Z1","US SARA Section 302 Extremely Hazardous Substances","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 - 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

- 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

Reasonable care has been taken in the preparation of this information, but the author makes no warranty of merchantability or any other warranty, expressed or implied, with respect to this information. The author makes no representations and assumes no liability for any direct, incidental or consequential damages resulting from its use. For additional technical information please call our toxicology department on +800 CHEMCALL.

■ 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.

■ 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. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

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