



# LITHIUM DEUTERIDE (D, 98%) MANUFACTURING GRADE

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 25/05/2017

Revision date:

Version: 1.0

DLM-1126-M

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1. Product identifier

Product form : Substance  
Substance name : LITHIUM DEUTERIDE (D, 98%) MANUFACTURING GRADE  
EC No : 231-484-3 (Labeled)  
CAS No : 13587-16-1  
Product code : DLM-1126-M  
Formula : LiD

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

##### 1.2.1. Relevant identified uses

Main use category : Professional use  
Industrial/Professional use spec : For professional use only

##### 1.2.2. Uses advised against

No additional information available

#### 1.3. Details of the supplier of the safety data sheet

Cambridge Isotope Laboratories, Inc.  
50 Frontage Road  
Andover, MA 01810  
USA

USA: 1-800-322-1174 Int: 1-978-749-8000  
[cilsales@isotope.com](mailto:cilsales@isotope.com) [www.isotope.com](http://www.isotope.com)

#### Emergency telephone number

Emergency numbers:

Chemtrec: 1-800-424-9300 (24 hours)  
International: 1-703-741-5970 (24 hours)

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

##### Classification according to Regulation (EC) No. 1272/2008 [CLP]

Water-react. 1 H260  
Acute Tox. 3 (Oral) H301  
Skin Corr. 1A H314  
Eye Dam. 1 H318

Full text of hazard classes and H-statements : see section 16

##### Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

F; R15  
T; R25  
Xi; R36  
Xi; R41

Full text of R-phrases: see section 16

##### GHS-US classification

Water-react. 1 H260  
Acute Tox. 3 (Oral) H301  
Skin Corr. 1A H314  
Eye Dam. 1 H318

Full text of H statements : see section 16

##### Adverse physicochemical, human health and environmental effects

No additional information available

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### 2.2. Label elements

#### Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



Signal word (CLP) :

Danger

Hazard statements (CLP) :

H260 - In contact with water releases flammable gases which may ignite spontaneously  
H301 - Toxic if swallowed  
H314 - Causes severe skin burns and eye damage

Precautionary statements (CLP) :

P223 - Do not allow contact with water  
P231+P232 - Handle under inert gas. Protect from moisture  
P260 - Do not breathe dust, fume, gas, mist, spray, vapours  
P264 - Wash hands thoroughly after handling  
P270 - Do not eat, drink or smoke when using this product  
P280 - Wear protective clothing, protective gloves  
P301+P310 - IF SWALLOWED: Immediately call a doctor  
P301+P330+P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting

#### GHS-US labelling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) :

Danger

Hazard statements (GHS-US) :

H260 - In contact with water releases flammable gases which may ignite spontaneously  
H301 - Toxic if swallowed  
H314 - Causes severe skin burns and eye damage

Precautionary statements (GHS-US) :

P223 - Do not allow contact with water  
P231+P232 - Handle under inert gas. Protect from moisture  
P260 - Do not breathe dust, fume, gas, mist, spray, vapours  
P264 - Wash hands thoroughly after handling  
P270 - Do not eat, drink or smoke when using this product  
P280 - Wear protective clothing, protective gloves  
P301+P310 - If swallowed: Immediately call a doctor  
P301+P330+P331 - If swallowed: rinse mouth. Do NOT induce vomiting  
P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower  
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing  
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
P310 - Immediately call a doctor  
P321 - Specific treatment (see Hazardous component(s) for labelling on this label)  
P330 - Rinse mouth  
P335+P334 - Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages  
P363 - Wash contaminated clothing before reuse  
P370+P378 - In case of fire: Use alcohol resistant foam, carbon dioxide (CO<sub>2</sub>), D-powder to extinguish  
P402+P404 - Store in a dry place. Store in a closed container  
P405 - Store locked up  
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

### 2.3. Other hazards

No additional information available

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

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Name	Product identifier	%	Classification according to Directive 67/548/EEC
LITHIUM DEUTERIDE (D, 98%) MANUFACTURING GRADE	(CAS No) 13587-16-1 (EC No) 231-484-3 (Labeled) (EC Index No)	100	F; R15 T; R25 Xi; R36 Xi; R41
Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
LITHIUM DEUTERIDE (D, 98%) MANUFACTURING GRADE	(CAS No) 13587-16-1 (EC No) 231-484-3 (Labeled) (EC Index No)	100	Water-react. 1, H260 Acute Tox. 3 (Oral), H301 Skin Corr. 1A, H314 Eye Dam. 1, H318

Full text of R- and H-statements: see section 16

Name	Product identifier	%	GHS-US classification
LITHIUM DEUTERIDE (D, 98%) MANUFACTURING GRADE (Main constituent)	(CAS No) 13587-16-1	100	Water-react. 1, H260 Acute Tox. 3 (Oral), H301 Skin Corr. 1A, H314 Eye Dam. 1, H318

Full text of H-statements: see section 16

### 3.2. Mixtures

Not applicable

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

First-aid measures general	: If you feel unwell, seek medical advice (show the label where possible). Evacuate danger area.
First-aid measures after inhalation	: When symptoms occur: go into open air and ventilate suspected area. If not breathing, give artificial respiration. Get medical advice/attention.
First-aid measures after skin contact	: Wash with plenty of soap and water. Get immediate medical advice/attention. Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages.
First-aid measures after eye contact	: Rinse cautiously with water for several minutes.
First-aid measures after ingestion	: Never give anything by mouth to an unconscious person. Rinse mouth out with water. Get medical advice/attention. Specific treatment (see Hazard pictograms (CLP) on this label).

### 4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation	: May be harmful if inhaled. May cause respiratory irritation.
Symptoms/injuries after skin contact	: Harmful in contact with skin. Causes severe skin burns and eye damage.
Symptoms/injuries after eye contact	: May cause eye irritation. Causes serious eye damage.
Symptoms/injuries after ingestion	: Toxic if swallowed. Swallowing a small quantity of this material will result in serious health hazard.

### 4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

## SECTION 5: Fire-fighting measures

### 5.1. Extinguishing media

Suitable extinguishing media : Water spray, dry chemical powder, alcohol-resistant foam, carbon dioxide (CO<sub>2</sub>).

### 5.2. Special hazards arising from the substance or mixture

No additional information available

### 5.3. Advice for firefighters

Firefighting instructions	: Fight fire with normal precautions from a reasonable distance. Wear a self contained breathing apparatus. Do not enter fire area without proper protective equipment, including respiratory protection.
Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection. Wear recommended personal protective equipment.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

#### 6.1.1. For non-emergency personnel

Emergency procedures : Wear personal protective equipment. Avoid breathing vapours, gas. Avoid dust formation. Ensure adequate air ventilation. Evacuate unnecessary personnel. Evacuate danger area. Avoid breathing dust, mist or spray.

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### 6.1.2. For emergency responders

No additional information available

### 6.2. Environmental precautions

Prevent entry to sewers and public waters. Do not allow to enter drains or water courses. Avoid release to the environment.

### 6.3. Methods and material for containment and cleaning up

For containment : Take up mechanically (sweeping, shovelling) and collect in suitable container for disposal. This material and its container must be disposed of in a safe way, and as per local legislation.

Methods for cleaning up : This material and its container must be disposed of in a safe way, and as per local legislation.

### 6.4. Reference to other sections

No additional information available

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Additional hazards when processed : Keep away from any possible contact with water, because of violent reaction and possible flash fire.

Precautions for safe handling : Provide adequate ventilation to minimize dust and/or vapour concentrations. Protect from moisture. Handle under inert gas.

Hygiene measures : Do not eat, drink or smoke when using this product. Wash hands, forearms and face thoroughly after handling.

### 7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Store in a well-ventilated place. Keep container tightly closed.

Storage conditions : Store at room temperature away from light and moisture.

Incompatible materials : Keep away from any possible contact with water, because of violent reaction and possible flash fire.

### 7.3. Specific end use(s)

No additional information available

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

LITHIUM DEUTERIDE (D, 98%) MANUFACTURING GRADE (13587-16-1)		
Italy - Portugal - USA ACGIH	ACGIH TWA (mg/m <sup>3</sup> )	0.025 mg/m <sup>3</sup> Remarks:Upper Respiratory Tract irritation, Eye irritation, Skin irritation; USA. ACGIH Threshold Limit Values (TLV)
Italy - Portugal - USA ACGIH	ACGIH Ceiling (mg/m <sup>3</sup> )	0.05 mg/m <sup>3</sup> respiratory tract irritation, Eye irritation; USA. ACGIH Threshold Limit Values (TLV)
USA NIOSH	NIOSH REL (TWA) (mg/m <sup>3</sup> )	0.025 mg/m <sup>3</sup> USA. NIOSH Recommended Exposure Limits
USA OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	0.025 USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
USA OSHA	OSHA PEL (STEL) (mg/m <sup>3</sup> )	0.025 mg/m <sup>3</sup> California permissible exposure limits for chemical contaminants (Title 8, Article 107)

### 8.2. Exposure controls

Appropriate engineering controls : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

Personal protective equipment : Gloves. Protective clothing. Protective goggles. Self-contained breathing apparatus.



Materials for protective clothing : Wear suitable protective clothing and gloves.

Hand protection : Wear suitable protective clothing and gloves.

Eye protection : Wear eye protection. Chemical goggles or face shield with safety glasses.

Skin and body protection : Wear suitable protective clothing, gloves and eye/face protection.

Respiratory protection : In case of inadequate ventilation wear respiratory protection. Approved supplied air respirator.

Environmental exposure controls : Avoid release to the environment.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state : Solid

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Appearance	: Powder.
Molecular mass	: 8.96 g/mol (Labeled)
Colour	: Light grey.
Odour	: No data available.
Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: 680 °C (1,256 °F) - lit.
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: In contact with water releases flammable gases which may ignite spontaneously
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: 0.82 g/cm <sup>3</sup> at 25 °C (77 °F)
Solubility	: No data available
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No additional information available

### 10.2. Chemical stability

Stable if stored under recommended conditions.

### 10.3. Possibility of hazardous reactions

Reacts violently with water. In contact with water releases flammable gases which may ignite spontaneously.

### 10.4. Conditions to avoid

Exposure to moisture.

### 10.5. Incompatible materials

Strong oxidizing agents. Acids. alcohols. Reacts violently with. Water.

### 10.6. Hazardous decomposition products

Carbon oxides (CO, CO<sub>2</sub>).

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Oral: Toxic if swallowed.

LITHIUM DEUTERIDE (D, 98%) MANUFACTURING GRADE (13587-16-1)	
LD50 oral rat	77.5 mg/kg
ATE CLP (oral)	77.500 mg/kg bodyweight

Skin corrosion/irritation	: Causes severe skin burns and eye damage.
Serious eye damage/irritation	: Causes serious eye damage.
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified

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STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified
Potential adverse human health effects and symptoms	: Burning sensation, Cough, wheezing, laryngitis, Shortness of breath, spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumosis, pulmonitis, pulmonary edema, Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product. Toxic if swallowed. Shortness of breath. Vomiting. Headache. Nausea.
Symptoms/injuries after inhalation	: May be harmful if inhaled. May cause respiratory irritation.
Symptoms/injuries after skin contact	: Harmful in contact with skin. Causes severe skin burns and eye damage.
Symptoms/injuries after eye contact	: May cause eye irritation. Causes serious eye damage.
Symptoms/injuries after ingestion	: Toxic if swallowed. Swallowing a small quantity of this material will result in serious health hazard.

## SECTION 12: Ecological information

### 12.1. Toxicity

No additional information available

### 12.2. Persistence and degradability

No additional information available

### 12.3. Bioaccumulative potential

No additional information available

### 12.4. Mobility in soil

No additional information available

### 12.5. Results of PBT and vPvB assessment

No additional information available

### 12.6. Other adverse effects

No additional information available

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Regional legislation (waste)	: Waste materials should be disposed of under conditions which meet Federal, State, and Local environmental control regulations.
Product/Packaging disposal recommendations:	: Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.
Ecology - waste materials	: Dispose of as unused product.

## SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

### 14.1. UN number

UN-No.(DOT)	: 1414
DOT NA no.	UN1414

### 14.2. UN proper shipping name

Proper Shipping Name (DOT)	: Lithium hydride
Class (DOT)	: 4.3 - Class 4.3 - Dangerous when wet material 49 CFR 173.124
Hazard labels (DOT)	: 4.3 - Dangerous when wet



Packing group (DOT)	: I - Great Danger
DOT Special Provisions (49 CFR 172.102)	: A19 - Combination packagings consisting of outer fiber drums or plywood drums, with inner plastic packagings, are not authorized for transportation by aircraft. N40 - This material is not authorized in the following packagings: a. A combination packaging consisting of a 4G fiberboard box with inner receptacles of glass or earthenware; b. A single packaging of a 4C2 sift-proof, natural wood box; or c. A composite packaging 6PG2 (glass, porcelain or stoneware receptacles within a fiberboard box).

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DOT Packaging Exceptions (49 CFR 173.xxx) : None  
DOT Packaging Non Bulk (49 CFR 173.xxx) : 211  
DOT Packaging Bulk (49 CFR 173.xxx) : 242

### 14.3. Additional information

Emergency Response Guide (ERG) Number : 138  
Other information : No supplementary information available.  
Special transport precautions : Not classified as dangerous in the meaning of transport regulations.

#### Overland transport

Packing group (ADR) : I  
Class (ADR) : 4.3 - Substances which, in contact with water, emit flammable gases  
Classification code (ADR) : W2  
Danger labels (ADR) : 4.3 - Substances which, in contact with water, emit flammable gases



Tunnel restriction code (ADR) : E  
Limited quantities (ADR) : 0  
EAC code : 4W  
Excepted quantities (ADR) : E0

#### Transport by sea

DOT Vessel Stowage Location : E - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length, but is prohibited from carriage on passenger vessels in which the limiting number of passengers is exceeded.  
DOT Vessel Stowage Other : 13 - Keep as dry as reasonably practicable, 52 - Stow "separated from" acids  
MFAG-No : 138

#### Air transport

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : Forbidden  
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 15 kg  
Civil Aeronautics Law : Combustible materials/Substances which, in contact with water, emit flammable gases (Hazardous materials notice Appended Table 1 Article 194 of the Enforcement Regulations)

### 14.4. Environmental hazards

Other information : No supplementary information available.

### 14.5. Special precautions for user

Special transport precautions : Not classified as dangerous in the meaning of transport regulations.

### 14.6. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

LITHIUM DEUTERIDE (D, 98%) MANUFACTURING GRADE (13587-16-1)	
Listed on the United States SARA Section 302	
SARA Section 302 Threshold Planning Quantity (TPQ)	Listed on the United States SARA Section 302
SARA Section 311/312 Hazard Classes	Reactive hazard Immediate (acute) health hazard
SARA Section 313 - Emission Reporting	Not subject to reporting requirements of the United States SARA Section 313.



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### 15.2. International regulations

#### CANADA

##### LITHIUM DEUTERIDE (D, 98%) MANUFACTURING GRADE (13587-16-1)

Listed on the Canadian DSL (Domestic Substances List)

#### 15.2.1. National regulations

No additional information available

### 15.3. US State regulations

#### LITHIUM DEUTERIDE (D, 98%) MANUFACTURING GRADE(13587-16-1)

U.S. - California - Proposition 65 - Carcinogens List	No
U.S. - California - Proposition 65 - Developmental Toxicity	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Female	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No
State or local regulations	U.S. - Pennsylvania - RTK (Right to Know) List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Massachusetts - Right To Know List

## SECTION 16: Other information

Other information : This product is not radioactive. The data given for this product are those of the corresponding unlabeled compound, unless specifically indicated otherwise. Health and safety data for labeled compounds are generally not available, but are assumed to be similar or identical to the corresponding unlabeled compound.

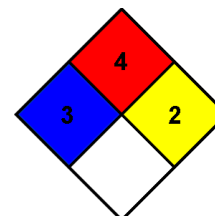
Full text of R-, H- and EUH-statements:

Acute Tox. 3 (Oral)	Acute toxicity (oral), Category 3
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Skin Corr. 1A	Skin corrosion/irritation, Category 1A
Water-react. 1	Substances and Mixtures which, in contact with water, emit flammable gases, Category 1
H260	In contact with water releases flammable gases which may ignite spontaneously
H301	Toxic if swallowed
H314	Causes severe skin burns and eye damage
H318	Causes serious eye damage
R15	Contact with water liberates extremely flammable gases
R25	Toxic if swallowed
R36	Irritating to eyes
R41	Risk of serious damage to eyes
F	Highly flammable
T	Toxic
Xi	Irritant

NFPA health hazard : 3 - Materials that, under emergency conditions, can cause serious or permanent injury.

NFPA fire hazard : 4 - Materials that rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air and burn readily.

NFPA reactivity : 2 - Materials that readily undergo violent chemical change at elevated temperatures and pressures.



### HMIS III Rating

Health : 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given

Flammability : 4 Severe Hazard

Physical : 2 Moderate Hazard



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CIL Multi-Solvent Mixture SDS

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product*