



LITHIUM-6 CARBONATE (6Li2, 95%)

Safety Data Sheet

according to Regulation (EC) No. 453/2010 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 14/12/2010

Revision date: 16/11/2016

Supersedes: 26/12/2013

Version: 3.0

LLM-1811

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

1.1. Product identifier

Product form : Substance
Substance name : LITHIUM-6 CARBONATE (6Li2, 95%)
EC no : 209-062-5 (Unlabeled)
CAS No : 25890-20-4
Product code : LLM-1811
Formula : *Li2CO3
Synonyms : Carbolithium-6; Carbonic acid lithium-6 salt

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 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]

Acute Tox. 4 (Oral) H302
Acute Tox. 4 (Inhalation) H332
Eye Irrit. 2 H319
Lact. H362

Full text of H-statements: see section 16

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

Xn; R20/22
Xi; R36
R52

Full text of R-phrases: see section 16

GHS-US classification

Acute Tox. 4 (Oral) H302
Acute Tox. 4 (Inhalation) H332
Eye Irrit. 2A H319
Lact. H362
Aquatic Acute 3 H402

Adverse physicochemical, human health and environmental effects

Central nervous system, Kidney, Cardiovascular system, Thyroid.

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2.2. Label elements

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

Hazard pictograms (CLP) :



GHS07

Signal word (CLP) :

Warning

Hazard statements (CLP) :

H302+H332 - Harmful if swallowed or if inhaled
H319 - Causes serious eye irritation
H362 - May cause harm to breast-fed children

Precautionary statements (CLP) :

P260 - Do not breathe dust, fume, gas, mist, spray, vapours
P263 - Avoid contact during pregnancy/while nursing
P264 - Wash hands thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear protective clothing, protective gloves
P301+P312 - IF SWALLOWED: Call a doctor if you feel unwell
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing

GHS-US labelling

Hazard pictograms (GHS-US) :



GHS07

Signal word (GHS-US) :

Warning

Hazard statements (GHS-US) :

H302+H332 - Harmful if swallowed or if inhaled
H319 - Causes serious eye irritation
H362 - May cause harm to breast-fed children
H402 - Harmful to aquatic life

Precautionary statements (GHS-US) :

P201 - Obtain special instructions before use
P260 - Do not breathe dust, fume, gas, mist, spray, vapours
P261 - Avoid breathing dust, fume, gas, mist, spray, vapours
P263 - Avoid contact during pregnancy/while nursing
P264 - Wash Both hands thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area
P273 - Avoid release to the environment
P280 - Wear protective clothing, protective gloves
P301+P312 - IF SWALLOWED: call a POISON CENTER or doctor/physician if you feel unwell
P304+P340 - IF INHALED: remove victim to fresh air and keep at rest in a position 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
P308+P313 - IF exposed or concerned: Get medical advice/attention
P312 - Call a POISON CENTER or doctor/physician if you feel unwell
P330 - If swallowed, rinse mouth
P337+P313 - If eye irritation persists: Get medical advice/attention
P501 - Dispose of contents/container to Comply with applicable regulations

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substance

Name	Product identifier	%	Classification according to Directive 67/548/EEC
LITHIUM-6 CARBONATE (6Li ₂ , 95%) (Main constituent)	(CAS No) 25890-20-4 (EC no) 209-062-5 (Unlabeled)	100	Xn; R20/22 Xi; R36 R52

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Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
LITHIUM-6 CARBONATE (6Li ₂ , 95%) (Main constituent)	(CAS No) 25890-20-4 (EC no) 209-062-5 (Unlabeled)	100	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Inhalation), H332 Eye Irrit. 2, H319 Lact., H362

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

Name	Product identifier	%	GHS-US classification
LITHIUM-6 CARBONATE (6Li ₂ , 95%) (Main constituent)	(CAS No) 25890-20-4	100	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Inhalation), H332 Eye Irrit. 2A, H319 Lact., H362 Aquatic Acute 3, H402

Full text of H-statements: see section 16

3.2. Mixture

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures general : Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
- First-aid measures after inhalation : If breathed in, move person to fresh air. If not breathing, give artificial respiration. Consult a physician.
- First-aid measures after skin contact : Wash with soap and plenty of water. Consult a physician.
- First-aid measures after eye contact : Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
- First-aid measures after ingestion : Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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

- Symptoms/injuries after inhalation : Harmful if inhaled. May cause respiratory irritation.
- Symptoms/injuries after skin contact : May be harmful if absorbed through skin. May cause skin irritation.
- Symptoms/injuries after eye contact : Causes serious eye irritation.
- Symptoms/injuries after ingestion : Harmful if swallowed.

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

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.

5.2. Special hazards arising from the substance or mixture

- Reactivity : Not available.

5.3. Advice for firefighters

- Firefighting instructions : Wear self contained breathing apparatus for fire fighting if necessary.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Not flammable or combustible.

6.1.1. For non-emergency personnel

- Emergency procedures : Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Avoid breathing dust.

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3. Methods and material for containment and cleaning up

- For containment : Pick up and arrange disposal without creating dust. Keep in suitable, closed containers for disposal.

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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 : Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.
- Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

7.2. Conditions for safe storage, including any incompatibilities

- Technical measures : Keep container tightly closed in a cool, dry and well-ventilated place.
- Storage conditions : Store at room temperature away from light and moisture.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

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



- Hand protection : protective gloves.
- Eye protection : Wear safety glasses with side shields (or goggles) and a face shield.
- Skin and body protection : Choose body protection according to the amount and concentration of the dangerous substance at the work place.
- Respiratory protection : When appropriate, use NIOSH/CEN approved respirator.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

- Physical state : Solid
- Appearance : Crystalline.
- Molecular mass : 72.01 g/mol (Labeled)
- Colour : White.
- Odour : Odourless.
- Odour threshold : No data available
- pH : 9.0 - 11.0 at 1 g/l
- Relative evaporation rate (butylacetate=1) : No data available
- Melting point : 618 °C (1,144 °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) : No data available
- Vapour pressure : No data available
- Relative vapour density at 20 °C : No data available
- Relative density : 2.11 g/cm³
- Solubility : Water: 8.4 g/l at 20 °C (68 °F) - OECD Test Guideline 105
- 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

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Explosive limits : No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Not available.

10.2. Chemical stability

Stable if stored under recommended conditions.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

Not available.

10.5. Incompatible materials

Incompatible with strong acids and oxidizing agents.

10.6. Hazardous decomposition products

No additional information available

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Harmful if swallowed. Harmful if inhaled.

LITHIUM-6 CARBONATE (6Li2, 95%) (25890-20-4)	
LD50 oral rat	525 mg/kg
LD50 dermal rat	> 2000 mg/kg
LC50 inhalation rat (mg/l)	> 2.17 mg/l - 4 h
ATE CLP (oral)	525.000 mg/kg bodyweight
ATE CLP (gases)	4500.000 ppmv/4h
ATE CLP (vapours)	11.000 mg/l/4h
ATE CLP (dust,mist)	1.500 mg/l/4h

Skin corrosion/irritation : Not classified
No data available
pH: 9.0 - 11.0 at 1 g/l

Serious eye damage/irritation : Causes serious eye irritation.
Eyes - rabbit - Eye irritation
pH: 9.0 - 11.0 at 1 g/l

Respiratory or skin sensitisation : Buehler Test - guinea pig - Did not cause sensitization on laboratory animals. (OECD Test Guideline 406)
No data available

Germ cell mutagenicity : Not available

Carcinogenicity : Not classified

Reproductive toxicity : Did not show teratogenic effects in animal experiments.

Specific target organ toxicity (single exposure) : Not classified
No data available

Specific target organ toxicity (repeated exposure) : Not classified
No data available

Aspiration hazard : Not classified

Potential adverse human health effects and symptoms : Nausea. Anorexia. Large doses of lithium ion have caused dizziness and prostration, and can cause kidney damage if sodium intake is limited. Dehydration, weight loss, dermatological effects, and thyroid disturbances have been reported. Central nervous system effects that include slurred speech, blurred vision, sensory loss, ataxia, and convulsions may occur. Diarrhea, vomiting and neuromuscular effects such as tremor, clonus, and hyperactive reflexes may occur as a result of repeated exposure to lithium ion. Cough, Shortness of breath, Headache, Nausea. Blurred vision. ataxia, and convulsions may occur. Diarrhea, vomiting, and neuromuscular effects such as tremor, clonus, and hyperactive reflexes may occur as a result of repeated exposure to lithium ion. Vomiting, Cyanosis and t-wave inversion have occurred in the breast-fed infants of women receiving lithium carbonate therapy. Stomach - Irregularities - Based on Human Evidence. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Symptoms/injuries after inhalation : Harmful if inhaled. May cause respiratory irritation.

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Symptoms/injuries after skin contact	: May be harmful if absorbed through skin. May cause skin irritation.
Symptoms/injuries after eye contact	: Causes serious eye irritation.
Symptoms/injuries after ingestion	: Harmful if swallowed.

SECTION 12: Ecological information

12.1. Toxicity

LITHIUM-6 CARBONATE (6Li2, 95%) (25890-20-4)	
LC50 fish 1	30.3 mg/l Oncorhynchus mykiss (rainbow trout) - 96 h
EC50 Daphnia 1	33.2 mg/l Daphnia magna (Water flea) - 48 h
ErC50 (algae)	> 400 mg/l static test EC50 - Desmodesmus subspicatus (green algae) - 72 h

12.2. Persistence and degradability

LITHIUM-6 CARBONATE (6Li2, 95%) (25890-20-4)	
Persistence and degradability	Not available.

12.3. Bioaccumulative potential

LITHIUM-6 CARBONATE (6Li2, 95%) (25890-20-4)	
Bioaccumulative potential	Not available.

12.4. Mobility in soil

LITHIUM-6 CARBONATE (6Li2, 95%) (25890-20-4)	
Ecology - soil	Not available.

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

Other adverse effects : An environmental hazard cannot be excluded in the event of an unprofessional handling or disposal. Harmful to aquatic life.

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.
Waste 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

Not applicable

14.2. UN proper shipping name

Not applicable

14.3. Additional information

Other information	: No supplementary information available.
Special transport precautions	: DOT/IMDG/IATA: Not dangerous goods.

Overland transport

No additional information available

Transport by sea

No additional information available

Air transport

No additional information available

14.4. Environmental hazards

Other information	: No supplementary information available.
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14.5. Special precautions for user

Special transport precautions : DOT/IMDG/IATA: Not dangerous goods.

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-6 CARBONATE (6Li2, 95%) (25890-20-4)

Subject to reporting requirements of United States SARA Section 313

SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard Delayed (chronic) health hazard
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15.2. International regulations

CANADA

LITHIUM-6 CARBONATE (6Li2, 95%) (25890-20-4)

Listed on the Canadian DSL (Domestic Substances List)

15.2.1. National regulations

No additional information available

15.3. US State regulations

LITHIUM-6 CARBONATE (6Li2, 95%)(25890-20-4)

State or local regulations	U.S. - Massachusetts - Right To Know List U.S. - Pennsylvania - RTK (Right to Know) List U.S. - New Jersey - Right to Know Hazardous Substance List WARNING! This product contains a chemical known by the state of California to cause birth defects or other reproductive harm.
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SECTION 16: Other information

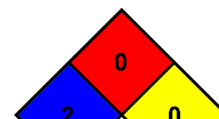
Other information : This product is not radioactive. The data given for this product are those of the corresponding unlabeled compound, unless specifically indicated otherwise. Health and safety data for labeled compounds are generally not available, but are assumed to be similar or identical to the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

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

Acute Tox. 4 (Inhalation)	Acute toxicity (inhal.), Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Lact.	Reproductive toxicity, Additional category, Effects on or via lactation
H302	Harmful if swallowed
H319	Causes serious eye irritation
H332	Harmful if inhaled
H362	May cause harm to breast-fed children
R20/22	Harmful by inhalation and if swallowed
R36	Irritating to eyes
R52	Harmful to aquatic organisms
Xi	Irritant
Xn	Harmful

NFPA health hazard : 2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.

NFPA fire hazard : 0 - Materials that will not burn.



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NFPA reactivity : 0 - Normally stable, even under fire exposure conditions,
and are not reactive with water.

HMIS III Rating

Health : 2 Moderate Hazard - Temporary or minor injury may occur
Flammability : 0 Minimal Hazard
Physical : 0 Minimal Hazard

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