

1 Identification

Product identifier

Product name: Lithium selenide

Stock number: 39467

CAS Number:

12136-60-6

EC number:

235-230-2

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

Identified use: SU24 Scientific research and development

Details of the supplier of the safety data sheet

Manufacturer/Supplier:

Alfa Aesar

Thermo Fisher Scientific Chemicals, Inc.

30 Bond Street

Ward Hill, MA 01835-8099

Tel: 800-343-0660

Fax: 800-322-4757

Email: tech@alfa.com

www.alfa.com

Information Department: Health, Safety and Environmental Department

Emergency telephone number:

During normal business hours (Monday-Friday, 8am-7pm EST), call (800) 343-0660. After normal business hours, call Carechem 24 at (866) 928-0789.

2 Hazard(s) identification

Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS)



GHS02 Flame

Water-react. 2 H261 In contact with water releases flammable gas.



GHS06 Skull and crossbones

Acute Tox. 2 H300 Fatal if swallowed.

Acute Tox. 2 H330 Fatal if inhaled.



GHS08 Health hazard

STOT RE 2 H373 May cause damage to the central nervous system, the liver and the digestive system through prolonged or repeated exposure. Route of exposure: Oral, Inhalative.

Hazards not otherwise classified No information known.

Label elements

GHS label elements The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)

Hazard pictograms



GHS02 GHS06 GHS08

Signal word

Danger

Hazard statements

H261 In contact with water releases flammable gas.

H300+H330 Fatal if swallowed or if inhaled.

H373 May cause damage to the central nervous system, the liver and the digestive system through prolonged or repeated exposure. Route of exposure: Oral, Inhalative.

Precautionary statements

P231+P232 Handle under inert gas. Protect from moisture.

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor/...

P320 Specific treatment is urgent (see on this label).

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

WHMIS classification

B6 - Reactive flammable material

D1A - Very toxic material causing immediate and serious toxic effects

F - Dangerously reactive material



Classification system

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

HEALTH 2 Health (acute effects) = 2

FIRE 0 Flammability = 0

REACTIVITY 3 Physical Hazard = 3

Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

Product name: **Lithium selenide**

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3 Composition/information on ingredients

Chemical characterization: Substances
CAS# Description:
12136-60-6 Lithium selenide
Identification number(s):
EC number: 235-230-2

4 First-aid measures

Description of first aid measures
General information
Immediately remove any clothing soiled by the product.
Remove breathing apparatus only after contaminated clothing has been completely removed.
In case of irregular breathing or respiratory arrest provide artificial respiration.
After inhalation
Supply fresh air. If required, provide artificial respiration. Keep patient warm.
Seek immediate medical advice.
After skin contact
Immediately wash with water and soap and rinse thoroughly.
Seek immediate medical advice.
After eye contact Rinse opened eye for several minutes under running water. Then consult a doctor.
After swallowing Do not induce vomiting; immediately call for medical help.
Information for doctor
Most important symptoms and effects, both acute and delayed No further relevant information available.
Indication of any immediate medical attention and special treatment needed No further relevant information available.

5 Fire-fighting measures

Extinguishing media
Suitable extinguishing agents In case of fire, use sand, carbon dioxide or powdered extinguishing agent. Never use water.
For safety reasons unsuitable extinguishing agents Water
Special hazards arising from the substance or mixture
Contact with water releases flammable gases
If this product is involved in a fire, the following can be released:
Toxic metal oxide fume
Hydrogen selenide
Advice for firefighters
Protective equipment:
Wear self-contained respirator.
Wear fully protective impervious suit.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures
Mount respiratory protective device.
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
Keep away from ignition sources
Environmental precautions: Do not allow material to be released to the environment without proper governmental permits.
Methods and material for containment and cleaning up:
Keep away from ignition sources.
Dispose of contaminated material as waste according to section 13.
Ensure adequate ventilation.
Do not flush with water or aqueous cleansing agents
Prevention of secondary hazards: Keep away from ignition sources.
Reference to other sections
See Section 7 for information on safe handling
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

Handling
Precautions for safe handling
Keep container tightly sealed.
Store in cool, dry place in tightly closed containers.
Ensure good ventilation at the workplace.
Open and handle container with care.
Information about protection against explosions and fires: Protect against electrostatic charges.
Conditions for safe storage, including any incompatibilities
Storage
Requirements to be met by storerooms and receptacles: No special requirements.
Information about storage in one common storage facility: Store away from water/moisture.
Further information about storage conditions:
Keep container tightly sealed.
Store in cool, dry conditions in well sealed containers.
Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

Additional information about design of technical systems:
Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.
Control parameters
Components with limit values that require monitoring at the workplace:

Selenium and selenium compounds (as Se)

	mg/m3
ACGIH TLV	0.2
Austria MAK	0.1
Belgium TWA	0.2
Denmark TWA	0.1
Finland TWA	0.1; 0.3-STEL
Germany MAK	0.1

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USA

Product name: Lithium selenide	
Hungary0.1-STEL Ireland TLV0.1 Japan OEL0.1 Korea TLV0.2 Netherlands MAC-TGG0.1 Poland TWA0.1; 0.3-STEL Sweden NGV0.1 Switzerland MAK-W0.1 United Kingdom TWA0.1 USA PEL0.2 Additional information: No data Exposure controls Personal protective equipment General protective and hygienic measures The usual precautionary measures for handling chemicals should be followed. Keep away from foodstuffs, beverages and feed. Remove all soiled and contaminated clothing immediately. Wash hands before breaks and at the end of work. Store protective clothing separately. Maintain an ergonomically appropriate working environment. Breathing equipment: Use self-contained respiratory protective device in emergency situations. Protection of hands: Impervious gloves Check protective gloves prior to each use for their proper condition. The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer. Penetration time of glove material (in minutes) Not determined Eye protection: Safety glasses Full face protection Body protection: Protective work clothing.	

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9 Physical and chemical properties	
Information on basic physical and chemical properties General Information Appearance: Form: Powder Color: Light brown Odor: Not determined Odor threshold: Not determined.	
pH-value: Not applicable.	
Change in condition Melting point/Melting range: Not determined Boiling point/Boiling range: Not determined Sublimation temperature / start: Not determined	
Flash point: Not applicable Flammability (solid, gaseous) Contact with water liberates extremely flammable gases. Ignition temperature: Not determined Decomposition temperature: Not determined Auto igniting: Not determined.	
Danger of explosion: Not determined. Explosion limits: Lower: Not determined Upper: Not determined Vapor pressure: Not applicable. Density: Not determined Relative density Not determined. Vapor density Not applicable. Evaporation rate Not applicable. Solubility in / Miscibility with Water: Contact with water releases flammable gases Partition coefficient (n-octanol/water): Not determined. Viscosity: dynamic: Not applicable. kinematic: Not applicable. Other information No further relevant information available.	

10 Stability and reactivity	
Reactivity In contact with water releases flammable gases which may ignite spontaneously. Chemical stability Stable under recommended storage conditions. Thermal decomposition / conditions to be avoided: Decomposition will not occur if used and stored according to specifications. Possibility of hazardous reactions Contact with water releases flammable gases Contact with water releases toxic gases Contact with acids releases toxic gases Conditions to avoid No further relevant information available. Incompatible materials: Oxidizing agents Bases Water/moisture Hazardous decomposition products: Hydrogen selenide Toxic metal oxide fume	

11 Toxicological information	
Information on toxicological effects Acute toxicity: Fatal if inhaled. Fatal if swallowed.	

(Contd. on page 4)
USA

Product name: Lithium selenide	
LD/LC50 values that are relevant for classification: No data Skin irritation or corrosion: Irritant to skin and mucous membranes. Eye irritation or corrosion: Irritating effect. Sensitization: No sensitizing effects known. Germ cell mutagenicity: No effects known. Carcinogenicity: EPA-D: Not classifiable as to human carcinogenicity: inadequate human and animal evidence of carcinogenicity or no data are available. NTP-R: Reasonably anticipated to be a carcinogen: limited evidence from studies in humans or sufficient evidence from studies in experimental animals. IARC-3: Not classifiable as to carcinogenicity to humans. Reproductive toxicity: No effects known. Specific target organ system toxicity - repeated exposure: May cause damage to the central nervous system, the liver and the digestive system through prolonged or repeated exposure. Route of exposure: Oral, Inhalative. Specific target organ system toxicity - single exposure: No effects known. Aspiration hazard: No effects known. Subacute to chronic toxicity: Selenium may cause amyotrophic lateral sclerosis, bronchial irritation, gastrointestinal distress, vasopharyngeal irritation, garlic odor on breath and sweat, metallic taste, pallor, irritability, excessive fatigue, loss of fingernails and hair, pulmonary edema, anemia and weight loss. Large amounts of lithium compounds may cause vomiting, diarrhea, ataxia, intestinal irritation, kidney injury, central nervous system depression and a drop in blood pressure. Central nervous system effects may include slurred speech, blurred vision, dizziness, sensory loss, convulsions and stupor. Chronic intake may cause neuromuscular effects such as tremor, ataxia, weakness, clonus and hyperactive reflexes. Lithium can cause kidney damage, gastrointestinal disturbances, fatigue, dehydration, weight loss, dermatological effects and thyroid damage. Lithium ion has shown teratogenic effects in rats and mice. Subacute to chronic toxicity: No effects known. Additional toxicological information: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.	(Contd. of page 3)

12 Ecological information	
Toxicity Aquatic toxicity: No further relevant information available. Persistence and degradability No further relevant information available. Bioaccumulative potential No further relevant information available. Mobility in soil No further relevant information available. Ecotoxical effects: Remark: Very toxic for aquatic organisms Additional ecological information: General notes: Do not allow material to be released to the environment without proper governmental permits. Do not allow product to reach ground water, water course or sewage system, even in small quantities. Danger to drinking water if even extremely small quantities leak into the ground. Also poisonous for fish and plankton in water bodies. May cause long lasting harmful effects to aquatic life. Avoid transfer into the environment. Very toxic for aquatic organisms Results of PBT and vPvB assessment PBT: Not applicable. vPvB: Not applicable. Other adverse effects No further relevant information available.	

13 Disposal considerations	
Waste treatment methods Recommendation Consult state, local or national regulations to ensure proper disposal. Uncleaned packagings: Recommendation: Disposal must be made according to official regulations.	

14 Transport information	
UN-Number DOT, IMDG, IATA	UN3134
UN proper shipping name DOT IMDG, IATA	Water-reactive solid, toxic, n.o.s. (Lithium selenide) WATER-REACTIVE SOLID, TOXIC, N.O.S. (Lithium selenide)
Transport hazard class(es) DOT  	
Class Label Class Label IMDG, IATA  	4.3 Substances which, in contact with water, emit flammable gases. 4.3+6.1 4.3 (WT2) Substances which, in contact with water, emit flammable gases 4.3+6.1
Class Label	4.3 Substances which, in contact with water, emit flammable gases. 4.3+6.1
Packing group DOT, IMDG, IATA	II
Environmental hazards:	Environmentally hazardous substance, solid
Special precautions for user	Warning: Substances which, in contact with water, emit flammable gases
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
Transport/Additional information: DOT Marine Pollutant (DOT):	No
UN "Model Regulation":	UN3134, Water-reactive solid, toxic, n.o.s. (Lithium selenide), 4.3 (6.1), II

Product name: Lithium selenide

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15 Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture
GHS label elements The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)
Hazard pictograms



GHS02 GHS06 GHS08

Signal word Danger

Hazard statements

H261 In contact with water releases flammable gas.

H300+H330 Fatal if swallowed or if inhaled.

H373 May cause damage to the central nervous system, the liver and the digestive system through prolonged or repeated exposure. Route of exposure: Oral, Inhalative.

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P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

National regulations

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

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

SARA Section 313 (specific toxic chemical listings)

12136-60-6 Lithium selenide

California Proposition 65

Prop 65 - Chemicals known to cause cancer Substance is not listed.

Prop 65 - Developmental toxicity Substance is not listed.

Prop 65 - Developmental toxicity, female Substance is not listed.

Prop 65 - Developmental toxicity, male Substance is not listed.

Information about limitation of use:

For use only by technically qualified individuals.

This product contains selenium and is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right to Know Act of 1986 and 40CFR372.

Other regulations, limitations and prohibitive regulations

Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006. Substance is not listed.

The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.

Substance is not listed.

Annex XIV of the REACH Regulations (requiring Authorisation for use) Substance is not listed.

Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing SDS: Global Marketing Department

Date of preparation / last revision 11/24/2015 / -

Abbreviations and acronyms:

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

HMIS: Hazardous Materials Identification System (USA)

WHMIS: Workplace Hazardous Materials Information System (Canada)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

vPvB: very Persistent and very Bioaccumulative

ACGIH: American Conference of Governmental Industrial Hygienists (USA)

OSHA: Occupational Safety and Health Administration (USA)

NTP: National Toxicology Program (USA)

IARC: International Agency for Research on Cancer

EPA: Environmental Protection Agency (USA)