

# SAFETY DATA SHEETS

According to Globally Harmonized System of Classification and Labelling of Chemicals (GHS) - Sixth revised edition

Version: 1.0

Creation Date: Aug 12, 2017

Revision Date: Aug 12, 2017

---

## 1. Identification

### 1.1 GHS Product identifier

Product name            L-methionine

### 1.2 Other means of identification

Product number        -

Other names            S-methionine

### 1.3 Recommended use of the chemical and restrictions on use

Identified uses        For industry use only. Skin Conditioning Agents

Uses advised against   no data available

---

## 2. Hazard identification

### 2.1 Classification of the substance or mixture

Not classified.

### 2.2 GHS label elements, including precautionary statements

Pictogram(s)           No symbol.

Signal word            No signal word.

Hazard statement(s)   none

Precautionary  
statement(s)

Prevention            none

Response	none
Storage	none
Disposal	none

## 2.3 Other hazards which do not result in classification

none

---

## 3. Composition/information on ingredients

### 3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
L-methionine	L-methionine	63-68-3	none	100%

---

## 4. First-aid measures

### 4.1 Description of necessary first-aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

Fresh air, rest.

In case of skin contact

Rinse skin with plenty of water or shower.

In case of eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

If swallowed

Rinse mouth.

### 4.2 Most important symptoms/effects, acute and delayed

ACUTE/CHRONIC HAZARDS: This material is dangerous when heated to decomposition; it emits dangerous and highly toxic fumes.

#### 4.3 Indication of immediate medical attention and special treatment needed, if necessary

/SRP:/ Immediate first aid: Ensure that adequate decontamination has been carried out. If patient is not breathing, start artificial respiration, preferably with a demand valve resuscitator, bag-valve-mask device, or pocket mask, as trained. Perform CPR if necessary. Immediately flush contaminated eyes with gently flowing water. Do not induce vomiting. If vomiting occurs, lean patient forward or place on the left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Keep patient quiet and maintain normal body temperature. Obtain medical attention. /Poisons A and B/

---

#### 5. Fire-fighting measures

##### 5.1 Extinguishing media

Suitable extinguishing media

Fires involving this material can be controlled using a CO<sub>2</sub>, foam, and/or Halon extinguisher.

##### 5.2 Specific hazards arising from the chemical

Flash point data for this material is not available, but it is probably combustible.

##### 5.3 Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

---

#### 6. Accidental release measures

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

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

##### 6.2 Environmental precautions

Sweep spilled substance into covered containers. Carefully collect remainder. Then store and dispose of according to local regulations.

##### 6.3 Methods and materials for containment and cleaning up

Pick up and arrange disposal. Sweep up and shovel. Keep in suitable, closed containers for disposal.

---

## 7. Handling and storage

### 7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Avoid exposure - obtain special instructions before use. Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.

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

Separated from strong oxidants. Well closed.

---

## 8. Exposure controls/personal protection

### 8.1 Control parameters

Occupational Exposure limit values

no data available

Biological limit values

no data available

### 8.2 Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

### 8.3 Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Safety glasses with side-shields conforming to EN166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Wear impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. Handle with gloves. Gloves must be inspected prior to use.

Use proper glove removal technique(without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Respiratory protection

Wear dust mask when handling large quantities.

Thermal hazards

no data available

---

## 9. Physical and chemical properties

Physical state	White crystalline powder
Colour	Minute hexagonal plates from dilute alcohol
Odour	Faint
Melting point/ freezing point	243°C(lit.)
Boiling point or initial boiling point and boiling range	67°C/21mmHg(lit.)
Flammability	Gives off irritating or toxic fumes (or gases) in a fire.
Lower and upper explosion limit / flammability limit	no data available
Flash point	101°C(lit.)
Auto-ignition temperature	no data available
Decomposition temperature	281°C
pH	pH (1% aqueous solution) = 5.6-6.1
Kinematic viscosity	no data available
Solubility	In water:Soluble
Partition coefficient n-octanol/water (log value)	no data available
Vapour pressure	8.14X10-8 mm Hg at 25°C (est)
Density and/or relative density	1.206 g/cm <sup>3</sup>
Relative vapour density	no data available

## 10. Stability and reactivity

### 10.1 Reactivity

no data available

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

An organosulfide and amine derivative, carboxylic acid. Look at Reactive Groups 20 (organosulfides), 7 (amines), and 3 (carboxylic acids) may give indications about reactive tendencies. It is an amino acid essential in human nutrition.

### 10.4 Conditions to avoid

no data available

### 10.5 Incompatible materials

no data available

### 10.6 Hazardous decomposition products

When heated to decomposition it emits very toxic fumes of /nitric oxide/ and /sulfur oxide/.

---

## 11. Toxicological information

Acute toxicity

- Oral: LD50 Rat oral 36,000 mg/kg
- Inhalation: no data available
- Dermal: no data available

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

no data available

Reproductive toxicity

no data available

STOT-single exposure

no data available

STOT-repeated exposure

no data available

Aspiration hazard

no data available

---

## 12. Ecological information

### 12.1 Toxicity

- Toxicity to fish: no data available
- Toxicity to daphnia and other aquatic invertebrates: no data available
- Toxicity to algae: no data available
- Toxicity to microorganisms: no data available

### 12.2 Persistence and degradability

AEROBIC: In a laboratory activated sludge system, (L)-methionine had an 80% theoretical BOD reduction after 16 days of incubation(1). In a Warburg respirometer study using activated sludge, (L)-methionine (at a concn of 500 mg/L) had a theoretical BOD of 2.6% over a 24-hr incubation period(2). In an activated sludge system that had been acclimated to phenol, (L)-methionine had a theoretical oxidation of 16% after 12 hrs of aeration(3).

### 12.3 Bioaccumulative potential

An estimated BCF of 3 was calculated in fish for (L)-methionine(SRC), using a log Kow of -1.87(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is low(SRC).

## 12.4 Mobility in soil

The Koc of (L)-methionine is estimated as 8(SRC), using a log Kow of -1.87(1) and a regression-derived equation(2). According to a classification scheme(3), this estimated Koc value suggests that (L)-methionine is expected to have very mobility in soil. The pKa values of (L)-methionine are 2.28 and 9.21(4), indicate that this compound will exist as a zwitterion which may affect its adsorption to soils and sediments(SRC). One study found that (L)-methionine was one of many amino acids that sorbed to carbonate sediments in seawater(5); a positive correlation between surface area (of the sediment) and the amount of sorbed amino acids indicated that sorption from solution (partitioning from the water column to sediment) was a likely mechanism(5).

## 12.5 Other adverse effects

no data available

---

# 13. Disposal considerations

## 13.1 Disposal methods

### Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

### Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

---

# 14. Transport information

## 14.1 UN Number

ADR/RID: Not dangerous

IMDG: Not dangerous

IATA: Not dangerous



goods.

goods.

goods.

## 14.2 UN Proper Shipping Name

ADR/RID: unknown

IMDG: unknown

IATA: unknown

## 14.3 Transport hazard class(es)

ADR/RID: Not dangerous  
goods.

IMDG: Not dangerous  
goods.

IATA: Not dangerous  
goods.

## 14.4 Packing group, if applicable

ADR/RID: Not dangerous  
goods.

IMDG: Not dangerous  
goods.

IATA: Not dangerous  
goods.

## 14.5 Environmental hazards

ADR/RID: no

IMDG: no

IATA: no

## 14.6 Special precautions for user

no data available

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

no data available

---

## 15. Regulatory information

### 15.1 Safety, health and environmental regulations specific for the product in question

Chemical name	Common names and synonyms	CAS number	EC number
L-methionine	L-methionine	63-68-3	none
European Inventory of Existing Commercial Chemical Substances (EINECS)			Listed.
EC Inventory			Listed.
United States Toxic Substances Control Act (TSCA) Inventory			Listed.
China Catalog of Hazardous chemicals 2015			Not Listed.
New Zealand Inventory of Chemicals (NZIoC)			Listed.

Philippines Inventory of Chemicals and Chemical Substances (PICCS)	Listed.
Vietnam National Chemical Inventory	Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)	Listed.

## 16. Other information

### Information on revision

Creation Date Aug 12, 2017

Revision Date Aug 12, 2017

### Abbreviations and acronyms

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

### References

- IPCS - The International Chemical Safety Cards (ICSC), website:  
<http://www.ilo.org/dyn/icsc/showcard.home>
- HSDB - Hazardous Substances Data Bank, website:  
<https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>
- IARC - International Agency for Research on Cancer, website:  
<http://www.iarc.fr/>
- eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website:  
[http://www.echemportal.org/echemportal/index?pageID=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en)

- CAMEO Chemicals, website:  
<http://cameochemicals.noaa.gov/search/simple>
- ChemIDplus, website:  
<http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>
- ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>
- Germany GESTIS-database on hazard substance, website:  
<http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>
- ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

---

Disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. We as supplier shall not be held liable for any damage resulting from handling or from contact with the above product.