

# L-methionine SDS/MSDS (Safety Data Sheet)

## 1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier

- \* Product Name: L-methionine
- \* Catalog Number: S5633
- \* CAS Number: 63-68-3
- \* IUPAC Name: L-Methionine

Relevant identified uses and uses advised against

- \* Identified uses: For research and development use only; laboratory chemicals; manufacture of substances.
- \* Uses advised against: Not for pharmaceutical, household, or other unapproved uses.

Details of the supplier

- \* Company: Selleck Chemicals
- \* TollFree: +1 877 796-6397
- \* Tel: +1 832 582-8158
- \* Fax: +1 832 582-8590

Emergency telephone number

- \* Emergency phone #: +1 832 582-8158

## 2. HAZARDS IDENTIFICATION

### 2.1 GHS classification in accordance with 29 CFR 1910 (OSHA HCS):

Not classified as a hazardous substance according to GHS.

### 2.2 GHS Label elements, including precautionary statements

**Hazard Pictogram(s)** None.

**Signal Word** Not applicable

**Hazard statement(s)** None.

**Precautionary statement(s)** None.

### 2.3 Other hazards

None.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substances

Product name: L-methionine

CAS Number: 63-68-3

PubChem CID: 6137

Molecular formula: C<sub>5</sub>H<sub>11</sub>NO<sub>2</sub>S

Molecular weight: 149.21 g/mol

IUPAC name: (2S)-2-amino-4-methylsulfanylbutoanoic acid

### **3.2 Mixtures**

Not applicable (pure substance).

## **4. FIRST-AID MEASURES**

### **4.1 Description of first aid measures**

Inhalation: INHALATION: IMMEDIATELY leave the contaminated area; take deep breaths of fresh air. If symptoms (such as wheezing, coughing, shortness of breath, or burning in the mouth, throat, or chest) develop, call a physician and be prepared to transport the victim to a hospital. Provide proper respiratory protection to rescuers entering an unknown atmosphere. Whenever possible, Self-Contained Breathing Apparatus (SCBA) should be used; if not available, use a level of protection greater than or equal to t

Skin contact: SKIN: IMMEDIATELY flood affected skin with water while removing and isolating all contaminated clothing. Gently wash all affected skin areas thoroughly with soap and water. If symptoms such as redness or irritation develop, IMMEDIATELY call a physician and be prepared to transport the victim to a hospital for treatment.

Eye contact: EYES: First check the victim for contact lenses and remove if present. Flush victim's eyes with water or normal saline solution for 20 to 30 minutes while simultaneously calling a hospital or poison control center. Do not put any ointments, oils, or medication in the victim's eyes without specific instructions from a physician.

IMMEDIATELY transport the victim after flushing eyes to a hospital even if no symptoms (such as redness or irritation) develop.

Ingestion: INGESTION: DO NOT INDUCE VOMITING. If the victim is conscious and not convulsing, give 1 or 2 glasses of water to dilute the chemical and IMMEDIATELY call a hospital or poison control center. Be prepared to transport the victim to a hospital if advised by a physician. If the victim is convulsing or unconscious, do not give anything by mouth, ensure that the victim's airway is open and lay the victim on his/her side with the head lower than the body. DO NOT INDUCE VOMITING. IMMEDIATELY transport

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

See Section 11 (Toxicological Information).

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

Treat symptomatically. Contact a poison control center or physician for severe exposure.

## **5. FIRE-FIGHTING MEASURES**

### **5.1 Extinguishing media**

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

Unsuitable: None known.

### **5.2 Specific hazards arising from the substance or mixture**

Fires involving this material can be controlled using a CO<sub>2</sub>, foam, and/or Halon extinguisher. (NTP, 1992)

### **5.3 Advice for firefighters**

Wear self-contained breathing apparatus (SCBA) and full protective clothing.

Fight fire from upwind. Cool containers with water spray until fire is extinguished.

## **6. ACCIDENTAL RELEASE MEASURES**

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

Wear appropriate personal protective equipment (see Section 8).

Avoid breathing dust/vapor. Ensure adequate ventilation.

Evacuate personnel to safe areas. Keep people away from and upwind of spill.

### **6.2 Environmental precautions**

Prevent product from entering drains, waterways, or soil.

Contain spill with inert absorbent material.

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

SRP: Expired or waste pharmaceuticals shall carefully take into consideration applicable DEA, EPA, and FDA regulations. It is not appropriate to dispose by flushing the pharmaceutical down the toilet or discarding to trash. If possible return the pharmaceutical to the manufacturer for proper disposal being careful to properly label and securely package the material. Alternatively, the waste pharmaceutical shall be labeled, securely packaged and transported by a state licensed medical waste contractor to dispose by burial in a licensed hazardous or toxic waste landfill or incinerator.

SRP: At the time of review, regulatory criteria for small quantity disposal are subject to significant revision, however, household quantities of waste pharmaceuticals may be managed as follows: Mix with wet cat litter or coffee grounds, double bag in plastic, discard in trash.

SRP: Criteria for land treatment or burial (sanitary landfill) disposal practices are subject to significant revision. Prior to implementing land disposal of waste residue (including waste sludge), consult with environmental regulatory agencies for guidance on acceptable disposal practices.

## **7. HANDLING AND STORAGE**

### **7.1 Precautions for safe handling**

SMALL SPILLS AND LEAKAGE: If you spill this chemical, you should dampen the solid spill material with water, then transfer the dampened material to a suitable container. Use absorbent paper dampened with water to pick up any remaining material. Seal your contaminated clothing and the absorbent paper in a vapor-tight plastic bag for eventual disposal. Wash all contaminated surfaces with a soap and water solution. Do not reenter the contaminated area until the Safety Officer (or other responsible person) has verified that the area has been properly cleaned.

STORAGE PRECAUTIONS: You should keep this material in a tightly-closed container under an inert atmosphere, and store it at refrigerated temperatures. (NTP, 1992)

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

Store in a cool, dry, well-ventilated area. Keep container tightly closed.

Store away from incompatible materials (see Section 10).

Protect from light and moisture.

Recommended storage (industry convention for research compounds): -20°C for long-term storage; 2-8°C for short-term use and transport.

[Note: This is a general industry recommendation. Always verify exact storage conditions with the supplier Certificate of Analysis (COA).]

## **8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

## 8.1 Exposure controls

### 8.1.1 Occupational exposure limits (OEL)

OSHA PEL: Not established.

ACGIH TLV: Not established.

NIOSH REL: Not established.

No occupational exposure limit values are established for this substance.

Use the lowest feasible exposure level (ALARA principle).

### 8.1.2 Appropriate engineering controls

Use in a well-ventilated area. Chemical fume hood recommended for powder handling.

## 8.2 Individual protection measures

### 8.2.1 Eye/face protection

Wear safety glasses with side shields.

### 8.2.2 Skin protection

Wear protective gloves. Recommended material: Nitrile rubber.

Wear suitable protective clothing (lab coat).

### 8.2.3 Respiratory protection

Respiratory protection usually not required under normal use with adequate ventilation.

Use N95 respirator for large-scale powder handling.

### 8.2.4 Thermal hazards

Not applicable.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

a) Appearance: Minute hexagonal plates from dilute alcohol. (NTP, 1992)

b) Odor: Faint

c) Odor threshold: No data available

d) pH: pH (1% aqueous solution) = 5.6-6.1

e) Melting point/freezing point: 536 to 540 °F decomposes 541.4-543.2 °F (NTP, 1992)

f) Initial boiling point and boiling range: sublimes at 367 °F (NTP, 1992)

g) Flash point: No data available

h) Evaporation rate: No data available

i) Flammability (solid, gas): No data available

j) Upper/lower flammability or explosive limits: No data available

k) Vapor pressure: 0.00000052 [mmHg]

l) Vapor density: No data available

m) Relative density: 1.178 at 68 °F (NTP, 1992) - Denser than water; will sink

n) Water solubility: Soluble (NTP, 1992)

o) Partition coefficient: n-octanol/water: Log P (n-octanol/water): -1.9

p) Auto-ignition temperature: No data available

q) Decomposition temperature: No data available

r) Viscosity: No data available

s) Explosive properties: No data available

t) Oxidizing properties: No data available

## 9.2 Other information

Topological Polar Surface Area (TPSA): 88.6 Å<sup>2</sup>

Complexity: 97

## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

No specific reactivity hazards identified under normal handling conditions.

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

No hazardous reactions under normal conditions.

### 10.4 Conditions to avoid

Avoid heat, sparks, open flames, direct sunlight, and moisture.

Avoid strong oxidizing agents, strong acids, and strong bases.

### 10.5 Incompatible materials

Strong oxidizing agents, strong acids, strong bases.

### 10.6 Hazardous decomposition products

Thermal decomposition may produce: Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>), Nitrogen oxides (NO<sub>x</sub>), Sulfur oxides (SO<sub>x</sub>).

See also Section 5 (Fire-fighting measures) for combustion products.

## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity:

No acute toxicity data available.

#### Skin corrosion/irritation:

No data available.

#### Serious eye damage/eye 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.

**Specific target organ toxicity (single exposure):**

No data available.

**Specific target organ toxicity (repeated exposure):**

No data available.

**Aspiration hazard:**

No data available.

## 11.2 Additional information

**Carcinogen classification:**

No indication of carcinogenicity to humans (not listed by IARC).

**Exposure routes:**

Absorbed from the lumen of the small intestine into the enterocytes by an active transport process.

Data source: Hazardous Substances Data Bank (HSDB) via PubChem.

## 12. ECOLOGICAL INFORMATION

### 12.1 Toxicity

LC50; Species: Eisenia fetida (earthworm, mature, weight 370-450 mg) direct application using filter paper >1000 AI ug/sq cm for 48 hr

(L)-Methionine's production and use as a nutritional supplement in animal feeds may result in its release to the environment through various waste streams. (L)-Methionine is formed in natural waters through metabolism of naturally occurring proteins and is a naturally occurring amino acid, being present in foods such as maize, rice, wheat, potato, soybeans, lettuce, apples, oranges, beef, fish, milk, cheese and eggs. If released to air, an estimated vapor pressure of  $8.1 \times 10^{-8}$  mm Hg at 25 °C indicates (L)-methionine will exist in both the vapor and particulate phases in the atmosphere. Vapor-phase (L)-methionine will be degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals; the half-life for this reaction in air is estimated to be 7.5 hours. Particulate-phase (L)-methionine will be removed from the atmosphere by wet or dry deposition. (L)-Methionine does not contain chromophores that absorb at wavelengths >290 nm and therefore is not expected to be susceptible to direct photolysis by sunlight. If released to soil, (L)-methionine is expected to have very high mobility based upon an estimated Koc of 8. The pKa values of (L)-methionine are 2.28 and 9.21, which indicate that this compound will exist as a zwitterion which may affect its adsorption to soils and sediments. Volatilization from moist soil is not expected

### 12.2 Persistence and degradability

No data available.

### 12.3 Bioaccumulative potential

Log P (n-octanol/water): -1.9

Low potential for bioaccumulation (Log P < 3).

### 12.4 Mobility in soil

No data available.

### 12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available.

### 12.6 Other adverse effects

No other adverse ecological effects identified.

## **13. DISPOSAL CONSIDERATIONS**

### **13.1 Waste treatment methods**

Waste Treatment Methods: Waste material must be disposed of in accordance with national and local regulations. Leave chemicals in original containers and do not mix with other waste. Handle uncleaned containers in the same manner as the product itself.

## **14. TRANSPORT INFORMATION**

### **14.1 UN number**

Not regulated as dangerous goods (research quantities typically exempt).

### **14.2 UN proper shipping name**

Not subject to transport regulations (small quantities for research use).

### **14.3 Transport hazard class(es)**

Not classified as dangerous goods for transport (research quantities).

### **14.4 Packing group**

Not applicable (not regulated as dangerous goods in typical research quantities).

### **14.5 Environmental hazards**

Marine pollutant: No (not classified as environmentally hazardous per GHS).

### **14.6 Special precautions for user**

Transport in original packaging. Ensure containers are tightly sealed.

For bulk or commercial quantities, consult applicable transport regulations (DOT, IATA, IMDG).

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

Not applicable.

## **15. REGULATORY INFORMATION**

### **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

US EPA / TSCA: Subject to EPA TSCA regulations

EU ECHA / REACH: Registered (REACH Active)

#### **SARA 302 Components:**

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

#### **SARA 313 Components:**

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

#### **SARA 311/312 Hazards:**

No SARA Hazards.

#### **Massachusetts Right To Know Components:**

No components are subject to the Massachusetts Right to Know Act.

**Pennsylvania Right To Know Components:**

No components are subject to the Pennsylvania Right to Know Act.

**New Jersey Right To Know Components:**

No components are subject to the New Jersey Right to Know Act.

**California Prop. 65 Components:**

This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

**Other regulatory listings:**

- The Australian Inventory of Industrial Chemicals: Chemical: L-Methionine
- EFSA Legal Basis: Regulation (EC) No 1831/2003 (amended)
- FDA Requirements: L-Methionine is a food additive permitted for direct addition to food for human consumption, as long as 1) the quantity of the substance added to food does not exceed the amount reasonably required to accomplish its intended physical, nutritive, or other technical effect in food, and 2) any substance

**15.2 Chemical safety assessment**

A chemical safety assessment has not been carried out for this substance.

For research-use-only compounds, no CSA is required under REACH Annex I.

**16. OTHER INFORMATION**

Revision Date: 2026/09/09

Further Information: The information provided is believed to be correct but is not exhaustive and should be used only as a guideline based on current knowledge. It does not represent a guarantee of the properties of the product.

Selleck Chemicals Corporation and its Affiliates shall not be held liable for any damage resulting from handling or contact with the product.