

SAFETY DATA SHEET:

CJ Bio Malaysia Sdn Bhd

L-METHIONINE

The information is provided as a service to our customers and is intended only for their use.

*This information is based on technical information believed to be reliable and will be revised
as new knowledge or experience is gained.*

Date of issue : January 01 , 2015

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Version 03

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1. Chemical Product and Company Identification

- | | |
|--------------------------------------|--|
| 1.1. Identification of the substance | : L-Methionine |
| 1.2. Use of the substance | : Various use (drugs, nutritional, industrial) |
| 1.3. Company identification: | |
| Manufacturer's Name | : CJ Bio Malaysia Sdn Bhd |
| 1.4. Contact for Correspondence | : Lot Q Kertih Bio Polymer Park Phase 2
Mukim Kertih, 24300 Kemaman,
Terengganu Malaysia |
| Tel N° | : +60-9-830-2454 |
| Emergency Phone # | : +82-2-3660-0553 |

2. Composition, Information on Ingredients

- | | |
|----------------------|---|
| Substance or Mixture | : Substance |
| Common Chemical name | : L-Methionine |
| Synonyms | : (2S)-2-Amino-4-(methylsulfanyl) butanoic acid |
| Formula | : $C_5H_{11}NO_2S$ |
| Molecular Weight | : 149.21 |
| CAS No. | : 63-68-3 |
| EINECS No. | : 200-562-9 |
| IUPAC | : L-Met |

3. Hazards Identification

- | | |
|--|--|
| <u>Potential human health effects</u> | : Irritating to mucous membranes, eyes and skin. |
| <u>Potential environmental effects</u> | : Will increase the biological oxygen demand (BOD) of water. |



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4. First-Aid Measures

Inhalation : Immediately relocate to a fresh air environment. Rinse mouth with water. If not breathing, give artificial respiration. If breathing becomes difficult, give oxygen and seek medical attention.

Skin Contact : Wash with soap and copious amounts of water. If irritation persists, seek medical attention.

Eye Contact : Immediately flush eyes with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating eyelids with fingers. If contact lenses are being worn, remove lenses and continue rinsing. Seek medical attention.

Ingestion : Rinse mouth with water and seek medical attention.

5. Fire-fighting measures

Flash point (method used) : Not known

Flammable limits : Not known

Extinguishing media : Water spray, carbon dioxide, dry chemical powder/foam

Special fire fighting procedures : Minimize dust formation

Unusual fire and explosion hazards : Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.
Upon combustion will result in carbon monoxide, carbon dioxide and nitrogen oxide being released.

6. Accidental release measures

Use personal protection, see section 8.

Shovel dry material into container and dispose material in accordance with local regulations. Prevent spills from entering sewers and watercourses. Avoid dust generation. Ventilate area. After material removal, rinse spill site with water.

7. Handling and storage

7.1. Handling : Follow good industrial practice in housekeeping and personal hygiene.
Wear personal protective equipment as outlined in section 8.

7.2. Storage : Store in closed containers in a dry area. Avoid humidity, sunlight and high temperature.

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8. Exposure controls/personal protection

Respiratory protection : Dust mask or appropriate respirator. Utilize local exhaust ventilation.
Protective gloves : Rubber
Eye protection : Chemical safety goggles
Other protective equipment : Wear appropriate laboratory apparel, protect exposed skin.
Occupational exposure limits : Not established

9. Physical and chemical properties

Appearance : White crystals or crystalline powder
Melting point : 280-282°C (decomposes)
Solubility : 4.80 g/100g H₂O (20°C)
pH : 5.6-6.1 (0.5g in 20mL of H₂O)

10. Stability and reactivity

Stability : Stable under normal temperature and pressures
Conditions to avoid : Humidity and high temperature
Incompatibility (Materials to avoid) : Strong oxidizing agents
Hazardous decomposition products : Nitrogen oxides (combustion)
Hazardous Polymerization : Will not occur

11. Toxicological information

Acute oral toxicity : LD₅₀ > 16 g/kg rat
Sensitization : No data available
Mutagenicity : No data available
Primary skin irritation : May cause skin irritation. No specific data available
Primary eye irritation : May cause eye irritation. No specific data available

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12. Ecological information

Toxic effects to fish, algae, and daphnia : No data available
Potential for bioaccumulation : No data available
Biodegradability : BOD= 0.221g/g
WGK class (Europe) : 1 (group classification according to VwVwS / 17 May 1999, Germany)

13. Disposal considerations

Dispose of the material as you would with a non-hazardous material in accordance with all applicable national, state and local regulations.

14. Transport information

Avoid humidity and high temperature. Prevent damage of the container.
UN-Classification : Not classified
US Department of Transportation proper shipping name : L-Methionine
US NMFC classification : Item 60,000 / class 70
Not dangerous as per IATA Regulation

15. Regulatory information

None especially.
The information given in this Material Safety Data Sheet does not replace the users own assessment of workplace risk as required by national, state and local health and safety legislation.

16. Other information

The information contained in this MSDS is, to the best of our knowledge true and accurate. Any recommendations or suggestions made are without guarantee, since the conditions of use are beyond our control.