



# Safety data sheet

## according to 1907/2006/EC, Article 31

Printing date 24.07.2015

Version number 2

Revision: 24.07.2015

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

- **1.1 Product identifier**
- **Trade name:** L-Leucine
- **CAS Number:**  
61-90-5
- **EC number:**  
200-522-0
- **Name:** (2S)-2-Amino-4-methylpentanoic acid
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**  
No further relevant information available.
- **Application of the substance / the mixture** Application in food and feed industry
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
B.M.P. Bulk Medicines & Pharmaceuticals GmbH  
Bornbarch 16  
D-22848 Norderstedt  
GERMANY  
  
Tel. +49-40-645 568-0  
Fax +49-40-645 568-68  
Mail bmp@bmp.ag
- **E-Mail competent person:** bmp@bmp.ag
- **1.4 Emergency telephone number:**  
Giftinformationszentrale Göttingen: Telefon-Nr. +49 551 19240 (Service in English)

### SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**  
The substance is not classified according to the CLP regulation.

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- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008** Void
- **Hazard pictograms** Void
- **Signal word** Void
- **Hazard statements** Void
- **Precautionary statements** Void
- **2.3 Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

### SECTION 3: Composition/information on ingredients

- **3.1 Chemical characterisation: Substances**
- **CAS No. Description**  
61-90-5 L-Leucine
- **Name:** (2S)-2-Amino-4-methylpentanoic acid

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- **Identification number(s)**
- **EC number:** 200-522-0

### SECTION 4: First aid measures

- **4.1 Description of first aid measures**
- **General information:**  
If symptoms persist or in case of doubt seek medical advice.  
Immediately remove any clothing soiled by the product.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:**  
Wash affected skin thoroughly with a mild detergent and plenty of water so that no residue remain on the skin.  
If skin irritation continues, consult a doctor.
- **After eye contact:**  
Rinse opened eye for several minutes (10-15 min.) under running water.  
Remove contact lenses, if present and easy to do. Continue rinsing.  
If symptoms persist consult a doctor.
- **After swallowing:**  
Rinse out mouth and then drink plenty of water.  
If symptoms persist consult a doctor.
- **4.2 Most important symptoms and effects, both acute and delayed**  
No further relevant information available.
- **4.3 Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

### SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing media:**  
CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.  
Use fire extinguishing methods suitable to surrounding conditions.
- **Unsuitable extinguishing media:** Water with full jet
- **5.2 Special hazards arising from the substance or mixture**  
As the product is supplied it is not capable of dust explosion; however enrichment with fine dust causes risk of dust explosion.  
In case of fire, the following can be released:  
Carbon monoxide (CO)  
Carbon dioxide (CO<sub>2</sub>)  
Nitrogen oxides (NO<sub>x</sub>)
- **5.3 Advice for firefighters**
- **Protective equipment:** Wear self-contained respiratory protective device.
- **Additional information**  
Collect contaminated fire fighting water separately. It must not enter the sewage system.  
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

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#### SECTION 6: Accidental release measures

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

- Wear personal protective equipment.
- Ensure adequate ventilation.
- Use respiratory protective device against the effects of vapours/dust/aerosol.
- Avoid formation of dust.
- Do not inhale dust/smoke/mist.
- Avoid contact with eyes, skin and clothing.
- Keep away from sources of ignition - No smoking.

##### · 6.2 Environmental precautions:

- Do not allow product to reach sewage system or any water course.
- Inform respective authorities in case of seepage into water course or sewage system.
- Do not allow to penetrate the ground/soil.
- In case of seepage into the ground inform responsible authorities.

##### · 6.3 Methods and material for containment and cleaning up:

- Pick up mechanically.
- Ensure adequate ventilation.
- Avoid formation of dust.
- Clear contaminated areas thoroughly.
- Send for recovery or disposal in suitable receptacles.

##### · 6.4 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.

#### SECTION 7: Handling and storage

##### · 7.1 Precautions for safe handling

- Wear personal protective equipment.
- Ensure good ventilation/exhaustion at the workplace.
- Avoid formation of dust.
- Do not inhale dust/smoke/mist.
- Wear suitable respiratory protective device when decanting larger quantities without extractor facilities.
- Provide suction extractors if dust is formed.
- Avoid contact with eyes, skin and clothing.

##### · Information about fire - and explosion protection:

- Keep ignition sources away - Do not smoke.
- Protect from heat.
- Protect against electrostatic charges.

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

###### · Storage:

###### · Requirements to be met by storerooms and receptacles:

- Store tightly closed in a cool and dry place with adequate ventilation.

###### · Further information about storage conditions:

- Keep container tightly sealed.
- Protect from heat and direct sunlight.

###### · Storage class: 11 Combustible solids (Germany)

##### · 7.3 Specific end use(s) No further relevant information available.

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### SECTION 8: Exposure controls/personal protection

- **Additional information about design of technical facilities:**  
Use process enclosure and exhaust ventilation to keep dust concentrations below permissible limits.
- **8.1 Control parameters**
- **Ingredients with limit values that require monitoring at the workplace:** Not required.
- **Additional information:** The lists valid during the making were used as basis.
- **8.2 Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**  
The usual precautionary measures are to be adhered to when handling chemicals.  
Immediately remove all soiled and contaminated clothing.  
Keep away from foodstuffs, beverages and feed.  
When using do not eat, drink or smoke.  
Wash hands before breaks and at the end of work.  
Do not inhale dust/smoke/mist.  
Avoid contact with eyes, skin and clothing.
- **Respiratory protection:**  
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.  
Respiratory protection necessary at: dust formation, insufficient ventilation or exposure limit overshoot.
- **Protection of hands:**  
Chemical resistant gloves (EN 374)  
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.  
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.  
Preventive skin protection by use of skin-protecting agents is recommended.
- **Material of gloves**  
For undissolved solids the following materials may be suitable:  
Butyl rubber, BR  
Nitrile rubber, NBR  
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
- **Penetration time of glove material**  
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:** Tightly sealed goggles (EN 166)
- **Body protection:**  
Protective work clothing  
  
Protective equipment should be selected specifically for the working place, depending on concentration and quantity.  
The chemical resistance of the protective equipment should be clarified with the respective supplier.

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## SECTION 9: Physical and chemical properties

### · 9.1 Information on basic physical and chemical properties

#### · General Information

#### · Appearance:

Form: Powder

Colour: Whitish

· Odour: Weak

· Odour threshold: Not determined.

· pH-value at 20 °C: 5,5

#### · Change in condition

Melting point/Melting range: 250 - 260 °C

Boiling point/Boiling range: Not determined.

· Flash point: Not determined.

· Flammability (solid, gaseous): Not determined.

· Ignition temperature: Not determined.

· Decomposition temperature: Not determined.

· Self-igniting: Not determined.

· Danger of explosion: The product is not explosive. However, formation of explosive dust/air mixtures is possible.

#### · Explosion limits:

Lower: Not determined.

Upper: Not determined.

· Oxidising properties: Not determined.

· Vapour pressure: Not applicable.

· Density at 20 °C: 1,29 g/cm<sup>3</sup>· Bulk density at 20 °C: 300 - 400 kg/m<sup>3</sup>

· Relative density: Not determined.

· Vapour density: Not applicable.

· Evaporation rate: Not applicable.

· Solubility in / Miscibility with water at 20 °C: 24 g/l

· Partition coefficient (n-octanol/water): log Pow: - 1,52

#### · Viscosity:

Dynamic: Not applicable.

Kinematic: Not applicable.

· 9.2 Other information: No further relevant information available.

## SECTION 10: Stability and reactivity

· 10.1 Reactivity: No further relevant information available.

· 10.2 Chemical stability: No decomposition if used and stored according to specifications.

· 10.3 Possibility of hazardous reactions: No further relevant information available.

· 10.4 Conditions to avoid: Protect from heat and direct sunlight.

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- **10.5 Incompatible materials:** Strong oxidising agents
- **10.6 Hazardous decomposition products:** No further relevant information available.

### SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity**

- **LD/LC50 values relevant for classification:**

Oral	LD50	> 2000 mg/kg (Rat)
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- **Primary irritant effect:**
- **Skin corrosion/irritation** Skin irritation is possible after mechanical influence (dust).
- **Serious eye damage/irritation** Eye irritation is possible after mechanical influence (dust).
- **Respiratory or skin sensitisation** No sensitising effects known.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
- **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.
- **Additional toxicological information**  
Further hazardous properties can not be excluded.  
The usual precautionary measures are to be adhered to when handling chemicals.

### SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** There are no quantitative data on the toxicity of the product.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential**  
Due to the distribution coefficient n-octanol/water an accumulation in organisms is not expected.
- **12.4 Mobility in soil** No further relevant information available.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects**  
Water hazard class 1 (German Regulation) (Assessment by list): slightly hazardous for water  
Do not allow product to reach ground water, water course or sewage system.

### SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**  
Dispose of waste according to official regulations.

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Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

- **Waste disposal key:**

The allocation of waste identity numbers / waste descriptions must be carried out according to the EEC, specific to the industry and process.

- **Uncleaned packaging:**

- **Recommendation:**

Dispose of waste according to official regulations.

Packaging that can not be cleansed are to be disposed of in the same manner as the product.

#### SECTION 14: Transport information

· <b>14.1 UN-Number</b> · <b>ADR, ADN, IMDG, IATA</b>	Void
· <b>14.2 UN proper shipping name</b> · <b>ADR, ADN, IMDG, IATA</b>	Void
· <b>14.3 Transport hazard class(es)</b> · <b>ADR, ADN, IMDG, IATA</b> · <b>Class</b>	Void
· <b>14.4 Packing group</b> · <b>ADR, IMDG, IATA</b>	Void
· <b>14.5 Environmental hazards:</b> · <b>Marine pollutant:</b>	No
· <b>14.6 Special precautions for user</b>	Not applicable.
· <b>14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
· <b>UN "Model Regulation":</b>	-

#### SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
  - **Directive 2012/18/EU**
  - **Named dangerous substances - ANNEX I** Substance is not listed.
  - **National regulations:**
  - **Information about limitation of use:**
    - Employment restrictions concerning juveniles must be observed.
    - Employment restrictions concerning pregnant and lactating women must be observed.
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

#### SECTION 16: Other information

This information is based on our present state of knowledge. However, this shall not constitute a guarantee for any specific product properties and shall not establish a legally valid contractual relationship.

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**• Abbreviations and acronyms:**

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

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

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

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

**• Sources**

Regulation (EC) No 1907/2006 (REACH) and 1272/2008 (GHS) as amended in each case.

EC Directives 2000/39/EC, 2006/15/EC, 2009/161/EC as amended in each case.

National Threshold Limit Values of the corresponding countries as amended in each case.

Transport regulations according to ADR, RID, IMDG, IATA as amended in each case.

**• Department issuing MSDS:**

HDCC - Hamburg Distribution & Chemical Consulting UG (haftungsbeschränkt)

August-Bebel-Str. 36, 23923 Schönberg, Germany

Tel.: +49-40-3492 6939 Fax: +49-321-2144 7400

**• Contact:** Dr. Sonja Schörshusen**• \* Data compared to the previous version altered.**

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