# 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-phenylalanine |

**1.2 Other means of identification**

| | |
|---|---|
| **Product number** | - |
| **Other names** | Benzenepropanethioic acid,S-phenyl ester |

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

| | |
|---|---|
| **Identified uses** | For industry use only. Food additives -> Flavoring Agents |
| **Uses advised against** | no data available |

**1.4 Supplier's details**

**1.5 Emergency phone number**

| | |
|---|---|
| **Emergency phone number** | - |
| **Service hours** | Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours). |

**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-phenylalanine | L-phenylalanine | 63-91-2 | 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

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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

ACUTE/CHRONIC HAZARDS: When heated to decomposition this compound emits toxic fumes of nitrogen oxides.

**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 with a dry chemical, carbon dioxide or Halon extinguisher.

### 5.2 Specific hazards arising from the chemical

Flash point data for this chemical are not available; however, 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

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

### 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

Store in cool place. Keep container tightly closed in a dry and well-ventilated place.

## 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** | Prisms form water |
| **Odour** | Slight |
| **Melting point/ freezing point** | -16°C(lit.) |

| | |
|---|---|
| **Boiling point or initial boiling point and boiling range** | 113°C |
| **Flammability** | no data available |
| **Lower and upper explosion limit / flammability limit** | no data available |
| **Flash point** | 33°C(lit.) |
| **Auto-ignition temperature** | no data available |
| **Decomposition temperature** | no data available |
| **pH** | no data available |
| **Kinematic viscosity** | no data available |
| **Solubility** | 10 to 50 mg/mL at 25°C |
| **Partition coefficient n-octanol/water (log value)** | no data available |
| **Vapour pressure** | 1.76X10-8 mm Hg at 25°C (est) |
| **Density and/or relative density** | 1.201 g/cm3 |
| **Relative vapour density** | no data available |
| **Particle characteristics** | 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**

L-PHENYLALANINE may be light sensitive. Acts as a weak acid in solution.

**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 toxic fumes of /nitrogen oxides/.

**11.Toxicological information**

Acute toxicity

- Oral: no data available

- 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: (DL)-Phenylalanine, present at 100 mg/L, exhibited 145 mg/L O2 uptake over 3 hours using phenol-adapted soil compost or mud from a catalytic cracking plant waste lagoon in the Warburg test(1). Using a Pseudomonas sp., a proposed metabolic pathway for (L)-phenylalanine has been identified resulting in the formation of mandellic acid, benzylformic acid, benzaldehyde, benzoic acid, catechol, beta-ketoadipic acid, succinic acid, acetic acid, and formic acid(2).

**12.3 Bioaccumulative potential**

An estimated BCF of 3 was calculated in fish for (L)-phenylalanine(SRC), using a log Kow of -1.38(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)-phenylalanine is estimated as 54(SRC), using a log Kow of -1.38(1) and a regression-derived equation(2). According to a classification scheme(3), this estimated Koc value suggests that (L)-phenylalanine is expected to have high mobility in soil. Amino acids are ionic over the entire pH range and tend to be cationic in acidic media, zwitterionic in neutral media, and anioic in basic media(4). The measured pKa1 and pKa2 values for (L)-phenylalanine are 1.83 and 9.13, respectively(5), indicating that this compound will almost entirely exist in the ion form in the environment.

**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 goods. | IMDG: Not dangerous goods. | IATA: Not dangerous 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: noIMDG: noIATA: 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-phenylalanine | L-phenylalanine | 63-91-2 | 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 |

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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
- 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/


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