

# SAFETY DATA SHEETS

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

Version: 1.0

Creation Date: Aug 11, 2017

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## 1. Identification

### 1.1 GHS Product identifier

|              |                   |
|--------------|-------------------|
| Product name | 1,4'-bipiperidine |
|--------------|-------------------|

### 1.2 Other means of identification

|                |                            |
|----------------|----------------------------|
| Product number | -                          |
| Other names    | 1-piperidin-4-ylpiperidine |

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

|                      |                        |
|----------------------|------------------------|
| Identified uses      | For industry use only. |
| Uses advised against | no data available      |

## 2. Hazard identification

### 2.1 Classification of the substance or mixture

Skin irritation, Category 2

Eye irritation, Category 2

Specific target organ toxicity – single exposure, Category 3

### 2.2 GHS label elements, including precautionary statements

|              |                                                                                     |
|--------------|-------------------------------------------------------------------------------------|
| Pictogram(s) |  |
| Signal word  | Warning                                                                             |

|                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Hazard statement(s)</b>        | H315 Causes skin irritation<br>H319 Causes serious eye irritation<br>H335 May cause respiratory irritation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Precautionary statement(s)</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Prevention</b>                 | P264 Wash ... thoroughly after handling.<br>P280 Wear protective gloves/protective clothing/eye protection/face protection.<br>P261 Avoid breathing dust/fume/gas/mist/vapours/spray.<br>P271 Use only outdoors or in a well-ventilated area.                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Response</b>                   | P302+P352 IF ON SKIN: Wash with plenty of water/...<br>P321 Specific treatment (see ... on this label).<br>P332+P313 If skin irritation occurs: Get medical advice/attention.<br>P362+P364 Take off contaminated clothing and wash it before reuse.<br>P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.<br>P337+P313 If eye irritation persists: Get medical advice/attention.<br>P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.<br>P312 Call a POISON CENTER/doctor/...if you feel unwell. |
| <b>Storage</b>                    | P403+P233 Store in a well-ventilated place. Keep container tightly closed.<br>P405 Store locked up.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Disposal</b>                   | P501 Dispose of contents/container to ...                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

## 2.3 Other hazards which do not result in classification

none

## 3. Composition/information on ingredients

### 3.1 Substances

| Chemical | Common | CAS | EC | Concentration |
|----------|--------|-----|----|---------------|
|----------|--------|-----|----|---------------|

| name              | names and synonyms | number    | number |      |
|-------------------|--------------------|-----------|--------|------|
| 1,4'-bipiperidine | 1,4'-bipiperidine  | 4897-50-1 | none   | 100% |

#### 4.First-aid measures

##### 4.1Description 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.

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

no data available

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

no data available

#### 5.Fire-fighting measures

##### 5.1Extinguishing media

**Suitable extinguishing media**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

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

no data available

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

Wear self-contained breathing apparatus for firefighting if necessary.

#### 6.Accidental release measures

##### 6.1Personal 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.

##### 6.2Environmental precautions

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

## 6.3Methods 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

### 7.1Precautions 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.

### 7.2Conditions 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

### 8.1Control parameters

#### Occupational Exposure limit values

no data available

#### Biological limit values

no data available

### 8.2Appropriate engineering controls

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

### 8.3Individual 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 or slightly yellow crystal. |

|                                                                         |                         |
|-------------------------------------------------------------------------|-------------------------|
| <b>Colour</b>                                                           | no data available       |
| <b>Odour</b>                                                            | no data available       |
| <b>Melting point/<br/>freezing point</b>                                | 208°C(lit.)             |
| <b>Boiling point or<br/>initial boiling point<br/>and boiling range</b> | 85°C/0.5mmHg(lit.)      |
| <b>Flammability</b>                                                     | no data available       |
| <b>Lower and upper<br/>explosion limit /<br/>flammability limit</b>     | no data available       |
| <b>Flash point</b>                                                      | 89°C(lit.)              |
| <b>Auto-ignition<br/>temperature</b>                                    | no data available       |
| <b>Decomposition<br/>temperature</b>                                    | no data available       |
| <b>pH</b>                                                               | no data available       |
| <b>Kinematic viscosity</b>                                              | no data available       |
| <b>Solubility</b>                                                       | no data available       |
| <b>Partition coefficient<br/>n-octanol/water<br/>(log value)</b>        | no data available       |
| <b>Vapour pressure</b>                                                  | no data available       |
| <b>Density and/or<br/>relative density</b>                              | 0.969 g/cm <sup>3</sup> |
| <b>Relative vapour</b>                                                  | no data available       |

|                          |                   |
|--------------------------|-------------------|
| density                  |                   |
| Particle characteristics | no data available |

10.Stability and reactivity

10.1Reactivity

no data available

10.2Chemical stability

Stable under recommended storage conditions.

10.3Possibility of hazardous reactions

no data available

10.4Conditions to avoid

no data available

10.5Incompatible materials

no data available

10.6Hazardous decomposition products

no data available

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****12.1Toxicity**

- 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

**12.2Persistence and degradability**

no data available

**12.3Bioaccumulative potential**

no data available

**12.4Mobility in soil**

no data available

**12.5Other adverse effects**

no data available

**13.Disposal considerations****13.1Disposal 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****14.1UN Number**

|                 |              |              |
|-----------------|--------------|--------------|
| ADR/RID: UN2811 | IMDG: UN2811 | IATA: UN2811 |
|-----------------|--------------|--------------|

**14.2UN Proper Shipping Name**

|                                       |
|---------------------------------------|
| ADR/RID: TOXIC SOLID, ORGANIC, N.O.S. |
| IMDG: TOXIC SOLID, ORGANIC, N.O.S.    |
| IATA: TOXIC SOLID, ORGANIC, N.O.S.    |

14.3Transport hazard class(es)

|              |           |           |
|--------------|-----------|-----------|
| ADR/RID: 6.1 | IMDG: 6.1 | IATA: 6.1 |
|--------------|-----------|-----------|

14.4Packing group, if applicable

|              |           |           |
|--------------|-----------|-----------|
| ADR/RID: III | IMDG: III | IATA: III |
|--------------|-----------|-----------|

14.5Environmental hazards

|             |          |          |
|-------------|----------|----------|
| ADR/RID: no | IMDG: no | IATA: no |
|-------------|----------|----------|

14.6Special precautions for user

no data available

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

no data available

15.Regulatory information

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

| Chemical name                                                          | Common names and synonyms | CAS number | EC number   |
|------------------------------------------------------------------------|---------------------------|------------|-------------|
| 1,4'-bipiperidine                                                      | 1,4'-bipiperidine         | 4897-50-1  | none        |
| European Inventory of Existing Commercial Chemical Substances (EINECS) |                           |            | Listed.     |
| EC Inventory                                                           |                           |            | Listed.     |
| United States Toxic Substances Control Act (TSCA) Inventory            |                           |            | Not Listed. |
| China Catalog of Hazardous chemicals 2015                              |                           |            | Not Listed. |
| New Zealand Inventory of Chemicals (NZIoC)                             |                           |            | Not Listed. |

|                                                                          |             |
|--------------------------------------------------------------------------|-------------|
| Philippines Inventory of Chemicals and Chemical Substances (PICCS)       | Not Listed. |
| Vietnam National Chemical Inventory                                      | Not Listed. |
| Chinese Chemical Inventory of Existing Chemical Substances (China IECSC) | Not Listed. |

## 16. Other information

### Information on revision

|               |              |
|---------------|--------------|
| Creation Date | Aug 11, 2017 |
| Revision Date | Aug 11, 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.*