

SAFETY DATA SHEETS

According to the UN GHS revision 9

Version: 1.0
Creation Date: July 15, 2019
Revision Date: July 15, 2019

SECTION 1: Identification

1.1 GHS Product identifier

Product name Hexanal

1.2 Other means of identification

Product number -

Other names Hexanal; Hexanaldehyde; Capronaldehyde

1.3 Recommended use of the chemical and restrictions on use

Identified uses Industrial and scientific research use.

Uses advised against no data available

1.4 Supplier's details

Company Shanghai Baishun Biotechnology Co., Ltd

Address No. 26, Lane 918, Lianye Road, Zhelin Town, Fengxian District, Shanghai, 201400, China

Telephone +86-21-37581181

1.5 Emergency phone number

Emergency phone number +86-21-37581181

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

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture

Flammable liquids, Category 3

Skin irritation, Category 2

Eye irritation, Category 2

2.2 GHS label elements, including precautionary statements

Pictogram(s)



Signal word

Warning

Hazard statement(s)

H226 Flammable liquid and vapour

H315 Causes skin irritation

H319 Causes serious eye irritation

Precautionary statement(s)

| | |
|-------------------|---|
| Prevention | <p>P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.</p> <p>P233 Keep container tightly closed.</p> <p>P240 Ground and bond container and receiving equipment.</p> <p>P241 Use explosion-proof [electrical/ventilating/lighting/...] equipment.</p> <p>P242 Use non-sparking tools.</p> <p>P243 Take action to prevent static discharges.</p> <p>P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...</p> <p>P264 Wash ... thoroughly after handling.</p> |
| Response | <p>P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse affected areas with water [or shower].</p> <p>P370+P378 In case of fire: Use ... to extinguish.</p> <p>P302+P352 IF ON SKIN: Wash with plenty of water/...</p> <p>P321 Specific treatment (see ... on this label).</p> <p>P332+P317 If skin irritation occurs: Get medical help.</p> <p>P362+P364 Take off contaminated clothing and wash it before reuse.</p> <p>P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p> |
| Storage | P403+P235 Store in a well-ventilated place. Keep cool. |
| Disposal | P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal. |

2.3 Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

3.1 Substances

| Chemical name | Common names and synonyms | CAS number | EC number | Concentration |
|---------------|---------------------------|------------|-----------|---------------|
| Hexanal | Hexanal | 66-25-1 | 200-624-5 | 100% |

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

If inhaled

Move the victim into fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration and consult a doctor immediately. Do not use mouth to mouth resuscitation if the victim ingested or inhaled the chemical.

Following skin contact

Take off contaminated clothing immediately. Wash off with soap and plenty of water. Consult a doctor.

Following eye contact

Rinse with pure water for at least 15 minutes. Consult a doctor.

Following ingestion

Rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a doctor or Poison Control Center immediately.

4.2 Most important symptoms/effects, acute and delayed

Ingestion causes irritation of mouth and stomach. Contact with vapor or liquid irritates eyes. Liquid irritates skin. (USCG, 1999)

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

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 as necessary. Immediately flush contaminated eyes with gently flowing water. Do not induce vomiting. If vomiting occurs, lean patient forward or place on 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. Aldehydes and Related Compounds

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media

If material on fire or involved in fire: Do not extinguish fire unless flow can be stopped or safely confined. Use water in flooding quantities as fog. Solid streams of water may spread fire. Cool all affected containers with flooding quantities of water. Apply water from as far a distance as possible. Use foam, dry chemical, or carbon dioxide.

5.2 Specific hazards arising from the chemical

Behavior in Fire: Vapor is heavier than air and may travel to a source of ignition and flash back. (USCG, 1999)

5.3 Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Avoid breathing mist, gas or vapours. Avoid contacting with skin and eye. Use personal protective equipment. Wear chemical impermeable gloves. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

6.2 Environmental precautions

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

6.3 Methods and materials for containment and cleaning up

Accidental Release Measures. Personal precautions, protective equipment and emergency procedures: Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas. Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Methods and materials for containment and cleaning up: Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

7.2 Conditions for safe storage, including any incompatibilities

Conditions for safe storage, including any incompatibilities: Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Recommended storage temperature 2-8 deg C Storage class (TRGS 510): Flammable liquids.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure limit values

| | | | | |
|------------------|----------------------------------|-------------------------|---------------------------------|-------------------------|
| Component | Hexanal | | | |
| CAS No. | 66-25-1 | | | |
| | Limit value - Eight hours | | Limit value - Short term | |
| | ppm | mg/m³ | ppm | mg/m³ |
| Finland | | | 10 (1) | 42 (1) |
| Poland | | 40 | | 80 |
| | Remarks | | | |
| Finland | (1) 15 minutes average value | | | |

Biological limit values

no data available

8.2 Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

8.3 Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Wear tightly fitting safety goggles with side-shields conforming to EN 166(EU) or NIOSH (US).

Skin protection

Wear fire/flame resistant and impervious clothing. Handle with gloves. Gloves must be inspected prior to use. 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

If the exposure limits are exceeded, irritation or other symptoms are experienced, use a full-face respirator.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

| | |
|---|---|
| Physical state | Hexaldehyde is a clear colorless liquid with a pungent odor. Flash point 90°F. Less dense than water and insoluble in water. Vapors heavier than air. |
| Colour | Colorless liquid |
| Odour | Characteristic fruity odor (on dilution) |
| Melting point/freezing point | 163°C(lit.) |
| Boiling point or initial boiling point and boiling range | 131°C |
| Flammability | no data available |
| Lower and upper explosion limit/flammability limit | Upper explosion limit: 7.5 %(V). Lower explosion limit: 1 %(V). |
| Flash point | 32°C(lit.) |
| Auto-ignition | no data available |

| | |
|---------------------------------------|--------------------------------------|
| temperature | |
| Decomposition temperature | no data available |
| pH | Acid value (max): 10.0 |
| Kinematic viscosity | no data available |
| Solubility | In water, 5.64X10+3 mg/L at 30 deg C |
| Partition coefficient n-octanol/water | log kow = 1.78 |
| Vapour pressure | 10 mm Hg (20 °C) |
| Density and/or relative density | 0.815 |
| Relative vapour density | >1 (vs air) |
| Particle characteristics | no data available |

SECTION 10: Stability and reactivity

10.1 Reactivity

Highly flammable. Insoluble in water.

10.2 Chemical stability

Chemical stability: Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Dangerous fire hazard when exposed to heat or flame. HEXALDEHYDE is an aldehyde. Aldehydes are frequently involved in self-condensation or polymerization reactions. These reactions are exothermic; they are often catalyzed by acid. Aldehydes are readily oxidized to give carboxylic acids. Flammable and/or toxic gases are generated by the combination of aldehydes with azo, diazo compounds, dithiocarbamates, nitrides, and strong reducing agents. Aldehydes can react with air to give first peroxo acids, and ultimately carboxylic acids. These autoxidation reactions are activated by light, catalyzed by salts of transition metals, and are autocatalytic (catalyzed by the products of the reaction). The addition of stabilizers (antioxidants) to shipments of aldehydes retards autoxidation. May attack some forms of plastics (USCG, 1999).

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

Incompatible materials: Oxidizing agents, Strong bases, Strong reducing agents, .

10.6 Hazardous decomposition products

Special hazards arising from the substance or mixture: Carbon oxides.

SECTION 11: Toxicological information

Acute toxicity

- Oral: LD50 Rat oral 4890 mg/kg
- 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

SECTION 12: Ecological information

12.1 Toxicity

- Toxicity to fish: LC50; Species: Pimephales promelas (Fathead minnow, age 31, 33 days, mean length 23.0 mm, mean weight 0.180 g); Conditions: flow-through bioassay with measured concentrations, 24.2 deg C, dissolved oxygen 6.8 mg/L, hardness 45.6 mg/L calcium carbonate, alkalinity 50.6 mg/L calcium carbonate, and pH 7.40; Concentration: 14.0 mg/L for 96 hr (95% confidence limit 12.0-16.5 mg/L) /99% purity
- Toxicity to daphnia and other aquatic invertebrates: LC50; Species: Daphnia magna (Water Flea) age < or =24 hr; Conditions: freshwater, flow through, 22-23 deg C, pH 6.9-7.6, dissolved oxygen 7.3-8.2 mg/L; Concentration: >22000 ug/L for 24 hr /99% purity
- Toxicity to algae: no data available
- Toxicity to microorganisms: no data available

12.2 Persistence and degradability

AEROBIC: The straight chain aldehyde structure of hexaldehyde would suggest rapid biodegradation(1). Hexaldehydye, present at 100 mg/L, reached 50% of its theoretical BOD in 4 weeks using an activated sludge inoculum at 30 mg/L in the Japanese MITI test (2).

12.3 Bioaccumulative potential

An estimated BCF of 7 was calculated in fish for hexaldehyde(SRC), using a log Kow of 1.78(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 hexaldehyde is estimated as 50(SRC), using a log Kow of 1.78(1) and a regression-derived equation(2). According to a classification scheme(3), this estimated Koc value suggests that hexaldehyde is expected to have high mobility in soil.

12.5 Other adverse effects

no data available

SECTION 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.

SECTION 14: Transport information

14.1 UN Number

ADR/RID: UN1207 (For reference only, please check.)

IMDG: UN1207 (For reference only, please check.)

IATA: UN1207 (For reference only, please check.)

14.2 UN Proper Shipping Name

ADR/RID: HEXALDEHYDE (For reference only, please check.)

IMDG: HEXALDEHYDE (For reference only, please check.)

IATA: HEXALDEHYDE (For reference only, please check.)

14.3 Transport hazard class(es)

ADR/RID: 3 (For reference only, please check.)

IMDG: 3 (For reference only, please check.)

IATA: 3 (For reference only, please check.)

14.4 Packing group, if applicable

ADR/RID: III (For reference only, please check.)

IMDG: III (For reference only, please check.)

IATA: III (For reference only, please check.)

14.5 Environmental hazards

ADR/RID: No

IMDG: No

IATA: No

14.6 Special precautions for user

no data available

14.7 Transport in bulk according to IMO instruments

no data available

SECTION 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 |
|--|---------------------------|------------|-----------|
| Hexanal | Hexanal | 66-25-1 | 200-624-5 |
| 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 | | | 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. |
| Korea Existing Chemicals List (KECL) | | | Listed. |

SECTION 16: Other information

Information on revision

Creation Date July 15, 2019

Revision Date July 15, 2019

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/>

Any questions regarding this SDS, Please send your inquiry to sds@xixisys.com

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.