

SAFETY DATA SHEETS

According to the UN GHS revision 8

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

1. Identification

1.1. GHS Product identifier

Product name 2,2,6,6-tetramethylpiperidine

1.2. Other means of identification

Product number A1028

Other names Piperidine, 2,2,6,6-tetramethyl-; 2,2,6,6-Tetramethylpiperidine; EINECS 212-199-3

1.1. Recommended use of the chemical and restrictions on use

Identified uses Industrial and scientific research uses.
Laboratory chemicals, Manufacture of substances

1.2. Supplier's details

Company NanJing Liskon Biological Technology Co.,ltd
Telephone +86 025-52110956

1.3. Emergency phone number

Emergency phone number +86 025-52110956
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

Flammable liquids.
Acute Oral Toxicity
Skin Corrosion/Irritation
Serious Eye Damage/Eye Irritation
Specific target organ toxicity - (single exposure)

2.2. GHS label elements, including precautionary statements

Pictogram(s)



Signal word
Hazard statement(s)

Danger

H226 - Flammable liquid and vapor H301 - Toxic if swallowed H315 - Causes skin irritation H319 -

	Causes serious eye irritation H335 - May cause respiratory irritation
Precautionary statement(s)	
Prevention	P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking P240 - Ground/bond container and receiving equipment P241 - Use explosion-proof electrical/ ventilating/ lighting/ equipment P242 - Use only non-sparking tools P243 - Take precautionary measures against static discharge P261 - Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray P264 - Wash face, hands and any exposed skin thoroughly after handling P270 - Do not eat, drink or smoke when using this product P271 - Use only outdoors or in a well-ventilated area P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection
Response	P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician P303 + P361 + P353 - IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower P304 + P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing P312 - Call a POISON CENTER or doctor/ physician if you feel unwell P330 - Rinse mouth P363 - Wash contaminated clothing before reuse P370 + P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction
Storage	P403 + P233 - Store in a well-ventilated place. Keep container tightly closed P405 - Store locked up
Disposal	P501 - Dispose of contents/ container to an approved waste disposal plant
2.3. Other hazards which do not result in classification	
Physical and Chemical Hazards	P501 - Dispose of contents/ container to an approved waste disposal plant
Health Hazards	Toxic if swallowed. Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation.
Environmental hazards	Contains no substances known to be hazardous to the environment or not degradable in waste water treatment plants. Will likely be mobile in the

environment due to its water solubility. The product is water soluble, and may spread in water systems.

3. Composition/information on ingredients

3.1. Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
2,2,6,6-tetramethylpiperidine	2,2,6,6-tetramethylpiperidine	768-66-1	212-199-3	100%

4. First-aid measures

4.1. Description of necessary first-aid measures

General advice

Medical attention is required. Consult a doctor. Show this safety data sheet (SDS) to the doctor in attendance.

If inhaled

Remove from exposure, lie down. Move to fresh air. If not breathing, give artificial respiration. Immediate medical attention is required. Following skin contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Immediate medical attention is required.

Following eye contact

Immediate medical attention is required. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.

Following ingestion

Do not induce vomiting. Call a physician immediately.

4.2. Most important symptoms/effects, acute and delayed

Breathing difficulties. Causes burns by all exposure routes. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting: Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

4.3. Self-Protection of the First Aider

Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

4.4. Notes to Physician

Treat symptomatically.

5. Fire-fighting measures

5.1. Extinguishing media

Suitable extinguishing media

Carbon dioxide (CO₂). Dry chemical. Chemical foam. Cool closed containers exposed to fire with water spray.

5.2. Specific hazards arising from the chemical

Flammable. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Containers may explode when heated. Vapors may form explosive mixtures with air.

5.3. Special protective actions for fire-fighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Accidental release measures

5.4. Personal precautions, protective equipment and emergency procedures

Remove all sources of ignition. Take precautionary measures against static discharges.

5.5. 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.

5.6. Methods and materials for containment and cleaning up

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Do not let this chemical enter the environment. Handling and storage

5.7. 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.

5.8. Conditions for safe storage, including any incompatibilities

Store the container tightly closed in a dry, cool and well-ventilated place. Store apart from foodstuff containers or incompatible materials.

6. Exposure controls/personal protection

6.1. Control parameters

Occupational Exposure limit values

no data available

6.2. 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.

6.3. 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

7. Physical and chemical properties

Physical state	clear colorless to light yellow-green liquid
Appearance	Light yellow
Odor	rotten-egg like
Melting point/ freezing point	-59°C
Boiling point or initial boiling point and boiling range	152°C
Flammability	no data available
Lower and upper explosion limit / flammability limit	no data available
Flash point	24°C
Auto-ignition temperature	no data available
Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	no data available
Solubility	In water: MISCIBLE
Partition coefficient n-octanol/water	no data available
Vapour pressure	no data available
Density and/or relative density	4.87
Relative vapour density	no data available
Particle characteristics	no data available

8. Stability and reactivity

8.1. Reactivity

no data available

8.2. Chemical stability

Stable under recommended storage conditions.

8.3. Possibility of hazardous reactions

no data available

8.4. Conditions to avoid

Keep away from open flames, hot surfaces and sources of ignition. Incompatible products.

8.5. Incompatible materials

no data available

8.6. Hazardous decomposition products

Nitrogen oxides (NOx). Carbon monoxide (CO). Carbon dioxide (CO2).

9. Toxicological information

Acute toxicity

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Piperidine, 2,2,6,6-tetramethyl-	LD50: 220 mg/kg (Mouse)		

Skin corrosion/irritation

Category 2

Serious eye damage/irritation

Category 2

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

Category 3

STOT-repeated exposure

no data available

Aspiration hazard

no data available

10. Ecological information

10.1. Ecotoxicity effects

Do not empty into drains.

10.2. Persistence and degradability

Miscible with water, Persistence is unlikely, based on information available.

10.3. Bioaccumulative potential

Bioaccumulation is unlikely

10.4. Mobility in soil

The product is water soluble, and may spread in water systems Will likely be mobile in the environment due to its water solubility Highly mobile in soils

10.5. Other adverse effects

no data available

11. Disposal considerations

11.1. 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.

12. Transport information

12.1. UN Number

ADR/RID: UN1992 (For reference only, please check.)	IMDG: UN1992 (For reference only, please check.)	IATA: UN1992 (For reference only, please check.)
---	--	--

12.2. UN Proper Shipping Name

ADR/RID: FLAMMABLE LIQUID, TOXIC, N.O.S. (For reference only, please check.)	IMDG: FLAMMABLE LIQUID, TOXIC, N.O.S. (For reference only, please check.)	IATA: FLAMMABLE LIQUID, TOXIC, N.O.S. (For reference only, please check.)
--	---	---

12.3. 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.)
--	---	---

12.4. Packing group, if applicable

ADR/RID: I (For reference only, please check.)	IMDG: I (For reference only, please check.)	IATA: I (For reference only, please check.)
--	---	---

12.5. Environmental hazards

ADR/RID: No	IMDG: No	IATA: No
-------------	----------	----------

12.6. Special precautions for user

No special precautions required.

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

no data available

13. Regulatory information

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

Chemical name	Common names and synonyms	CAS number	EC number
2,2,6,6-tetramethylpiperidine	2,2,6,6-tetramethylpiperidine	768-66-1	212-199-3
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)	Not Listed.		
Korea Existing Chemicals List (KECL)	Not Listed.		

14. 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/>

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.