



SDS

According to the UN GHS revision

Revision date: 06/07/2021

Revision number: 2.0

Creation Date: 05/20/2018

SECTION 1: IDENTIFICATION OF PRODUCT AND SUPPLIER

1.1 Product Identifiers

Product Name: 1,2-Epoxy-4-epoxyethylcyclohexane

Model: TTA22

1.2 Relevant identified uses of the substance or mixture and uses advised

against Identified uses: Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Manufacturer: Jiangsu Tetra New Material Technology Co., Ltd.

Address: No.6-2, Zhonggang Road, Taixing Economic Development Zone, Jiangsu, China

TEL: +86-523-87671608 Fax: +86-523-87671399

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SECTION 2: HAZARDS IDENTIFICATION

2.1 GHS Risk Categories

Acute toxicity, Oral: Category 3

Acute toxicity, Inhalation: Category 3

Acute toxicity, Dermal: Category 3

Carcinogenicity: Category 2

2.2 GHS Label elements, including precautionary statements

Pictogram(s):



Signal word: Danger

Hazard statement(s): H301 Toxic if swallowed.

H311 Toxic in contact with skin.

H331 Toxic if inhaled.

H351 Suspected of causing cancer.

2.3 Precautionary statement(s)

Prevention:

P201 Obtain special instructions before use.

P202 Do not move until you have read and understood all safety measures.

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P233 Keep container tightly closed.

P240 Ground and bond container and receiving equipment.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P264 Wash ... thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P271 Use only outdoors or in a well-ventilated area.

P272 Contaminated work clothes must not be taken out of the workplace.

P273 Avoid release to the environment.

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...

Response:

P303+P361+P353+ P317 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Immediately call a POISON CENTER or doctor.

P301+P317+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor.

P304+P340+ P316 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Get emergency medical help immediately.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P362+P364 Take off contaminated clothing and wash it before reuse.

P363 Wash contaminated clothing before reuse.

P370+P378 In case of fire: Use dry chemical, alcohol-resistant foam, carbon dioxide to extinguish.

P321 Specific treatment, Call a POISON CENTER or doctor.

Storage:

P391 Collect spillage.

P403+P235 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

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.

2.4 Other hazards which do not result in classification

No data available.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Information about the chemical nature of product

Common chemical name /general name	CAS number	EC number	Concentration
1,2-Epoxy-4-epoxyethylcyclohexane	106-87-6	203-437-7	≥95

SECTION 4: FIRST AID MEASURES

4.1 Description of necessary first-aid measures

If inhaled

Remove victim to fresh air, rest. Keep at rest in a position comfortable for breathing. If not breathing, give artificial respiration. Refer for medical attention.

Following skin contact

Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention.

Following eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

Following ingestion

Rinse mouth. Do NOT induce vomiting. Refer immediately for medical attention.

4.2 Most important symptoms/effects, acute and delayed

No further relevant information available.

4.3 A special note to the doctor

No further relevant information available.

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Suitable extinguishing media

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

5.2 Extremely dangerous

No further relevant information available.

5.3 Firefighting precautions

Fire fighters are required to wear self-contained breathing apparatus, full body fire and gas protective clothing to fight the fire upwind.

Remove containers from the fire as much as possible into the open.

Cool endangered receptacles with water spray. Containers in the fire must be evacuated immediately if they have become discolored or sound from the safety relief device. Isolate the scene of accident and prohibit entry irrelevant personnel.

Take in and treat fire water to prevent pollution

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Emergency personnel (For personal protection see section 8) do not touch or cross the spill. All equipment used in the operation shall be connected to the ground. Cut off the source of the leak as much as possible. Eliminate all sources of ignition. According to the influence area of liquid flow, steam or dust diffusion, the warning area is defined, and the irrelevant personnel are evacuated from the crosswind and upwind to the safe area.

6.1 Environmental precautions

Protect the environment from leakage. Prevent leaks into sewers, surface water and groundwater.

6.3 Methods and materials for containment and cleaning up

Small leakage: collect the leaking liquid in airtight container if possible. Absorb with sand, activated carbon or other inert materials and transfer to a safe place. No flushing into sewers.

Large leakage: build a dam or dig a hole to receive. Seal the drain. Cover with foam to inhibit evaporation. Transfer to tank truck or special collector by

explosion-proof pump, and recycle or transport to waste disposal site for disposal.

Wastewater from contaminant suppression, cleaning of protective clothing/equipment, or contaminated sites should be contained and evaluated for subject chemical or decomposition product concentrations. Concentrations shall be lower than applicable environmental discharge or disposal criteria. Alternatively, pretreatment and/or discharge to a permitted wastewater treatment facility is acceptable only after review by the governing authority and assurance that "pass through" violations. Due consideration shall be given to remediation worker exposure (inhalation, dermal and ingestion) as well as fate during treatment, transfer and disposal.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Operators should receive special training and strictly abide by the operating procedures.

Operational disposal shall be carried out in a place with local ventilation or full ventilation facilities.

Avoid contact with skin and eyes, avoid inhalation of steam. Use personal protection recommended in Section 8 of the SDS.

Keep away from fire and heat. No smoking in the workplace. Use explosion-proof ventilation systems and equipment. If canning is required, the flow rate should be controlled and a grounding device should be installed to prevent the accumulation of static electricity. Avoid contact with forbidden ligands (Section 10 of the SDS).

Handling should be light loading and unloading to prevent damage to packaging and containers.

An empty container may contain harmful residue.

Wash your hands after use and do not eat or drink in the workplace.

Equipped with the corresponding variety and quantity of fire equipment and leakage emergency treatment equipment.

7.2 Conditions for safe storage, including any incompatibilities

Store in cool, dry and ventilated storeroom, keep container tightly closed.

Containers which are opened must be carefully resealed and kept upright to prevent leakage.

It should be stored separately from edible chemicals, and mixed storage should be avoided by all means (Section 10 of the SDS).

Keep away from fire and heat. The warehouse must be equipped with lightning protection equipment. The exhaust system shall be equipped with a grounding device to conduct and remove static electricity.

Adopt explosion-proof lighting and ventilation setting. Do not use spark-prone equipment and tools.

The storage area should be equipped with spill response equipment and appropriate containment materials.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Occupational exposure limits

No data available.

8.2 Biological limit values

No data available.

8.3 Monitoring methods

EN 14042 guidelines for procedures for assessing exposure to chemical or biological agents in workplace air.

8.4 Appropriate engineering controls

The workplace is recommended to be separated from other workplaces. Closed operation to prevent leakage. Enhance ventilation. Set up automatic alarm device and emergency ventilation facilities. Emergency evacuation channels and necessary evacuation areas shall be set up. Red area warning lines, warning signs and warning instructions shall be set up, and a communication alarm system shall be set up. Provide safe shower and eye washing equipment.

8.5 Personal protective equipment

Respiratory protection: Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multipurpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls.

Hand protection: 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.

Eye/face protection: Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection: Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical state: light brown liquid.

pH: No data available.

Melting point/freezing point: No data available.

Boiling point or initial boiling point and boiling range: 230~232°C - lit.

Flash point: 107°C - closed cup.

Upper/lower limit of explosion: No data available.

Density/relative density: 1.094g/mL at 25°C

Saturated vapor pressure: No data available.

Partition coefficient n-octanol/water: No data available.

Auto-ignition temperature: No data available.

Decomposition temperature: No data available.

Water solubility: No data available.

Relative vapour density: No data available.

SECTION 10: STABILITY AND REACTIVITY

10.1 Chemical stability

Stable under recommended storage conditions.

10.2 Possibility of hazardous reactions

No data available.

10.3 Conditions to avoid

No further relevant information available.

10.4 Prohibited content

Strong oxidizing agents.

10.5 Dangerous decomposition products

carbon monoxide/carbon dioxide.

SECTION 11: TOXICOLOGICAL INFORMATION

Acute toxicity: LD50 Oral-Rat-2130mg/kg; LD50 Dermal-Rabbit-678 mg/kg.

LC50 Inhalation-Rat-4h-800ppm;

Skin irritation or corrosion: No data available.

Eye irritation or corrosion: No data available.

Respiratory or skin allergy: No data available.

Germ cell mutagenicity: Laboratory experiments have shown mutagenic effects.

Carcinogenicity: This product is or contains a component that has been reported to be possible classification. Limited evidence of carcinogenicity in animal studies.

IARC: 2B, possibly carcinogenic to humans.

Reproductive toxicity: No data available.

Specific target organ toxicity – single exposure: No data available.

Specific target organ toxicity – repeated exposure: No data available.

Aspiration hazard: No data available.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Ecotoxicity

No data available.

12.2 Persistence and degradability

No data available.

12.3 Bioaccumulative potential

No data available.

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic(PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects

No data available.

SECTION 13: WASTE TREATMENT METHODS

13.1 Waste chemicals

Recycle where possible. If it can't be recycled, the material can be disposed in accordance with local regulations or removal to a licensed chemical destruction plant. The chemicals shall not be disposed of by discharging into the sewer.

13.2 Contaminated packaging

Return the packaging to the manufacturer or dispose in accordance with local regulations. The packaging can be punctured to make it unusable for other purposes.

13.3 Discard precautions

Refer to national and local regulations before disposal. See Section 8 for safety precautions for handling personnel.

SECTION 14: TRANSPORT INFORMATION

14.1 UN Number: 2810

14.2 UN proper shipping name: TOXIC LIQUID, ORGANIC, N.O.S.

14.3 Transport hazard class(es): 6.1

14.4 Packaging group: III

14.5 Environmental hazards

Marine pollutants (yes/no): No

14.6 Transportation precautions

The transport vehicle shall be equipped with the corresponding variety and quantity of fire equipment and leakage emergency treatment equipment. Do not mix with edible chemicals, etc. The exhaust pipe of the vehicle carrying the item must be equipped with fire resistance device. There should be grounding chain when the tank (tank) car is used for transportation, and a hole

partition can be set in the tank to reduce the static electricity generated by the shock. Do not use the machinery equipment and tools which are easy to produce spark loading and unloading. It is best to ship early and late in summer. During transportation, we should prevent exposure to the sun, rain and high temperature. When stopping over, stay away from fire, heat source and high temperature area. Road transport should follow the prescribed route, do not stay in residential areas and densely populated areas. It is forbidden to slip away during railway transportation. It is strictly prohibited to transport in bulk by wooden or cement vessels.

SECTION 15: REGULATION INFORMATION

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

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.2. Chemical safety assessment:

For this product a chemical safety assessment was not carried out

SECTION 16: OTHER INFORMATION

16.1 Information on revision

Creation Date: 05/20/2018

Revision Date: 01/08/2021

Edit information: New Edit, Revised

Current version: 2.0

16.2 Abbreviations and acronyms

CAS: Chemical Abstracts Service

ACGIH: (American Conference of Governmental Industrial Hygienists);

BCF: (Bioconcentration Factor);

BOD: (Biochemical oxygen demand);

DSL: (the Domestic Substances List of Canada);

EC: (European Commission);

EC50: (Median effective concentration);

ENCS(MITI No.): (Existing and New Chemical Substances of Japan);

IARC: (International Agency for Research on Cancer);

IATA: (International Air Transport Association);

IECSC: (Inventory of Existing Chemical Substances in China);

LC50: (Lethal concentration, 50 percent kill);

LD50: (Lethal dose, 50 percent kill);

NDSL: (the Non-domestic Substances List of Canada);

NIOSH: (US National Institute for Occupational Safety and Health);

NOEC: (No observed effect concentration) ;

NTP: (US National Toxicology Program);

OSHA: (US Occupational Safety and Health);

PC-STEL: (Permissible concentration-time weighted average);

PC-TWA: (Permissible concentration-short time exposure limit);

PEL: (Permissible Exposure Level); REL: (Recommended Exposure Limit);

RTECS: (Registry of Toxic Effects of Chemical Substances);

STEL: (Short Term Exposure Limit);

TDG: (Recommendations on the TRANSPORT OF DANGEROUS GOODS Model Regulations);

LV: (Threshold Limit Value)

16.3 Other Information

RTECS: RN8640000.

This SDS was prepared sincerely on the basis of the information we could obtain, however, any warranty shall not be given regarding the data contained and the assessment of hazards and toxicity. Prior to use, please investigate not only the hazards and toxicity information but also the laws and regulations of the organization, area and country where the products are to be used, which shall be given the first priority. The products are supposed to be used promptly after purchase in consideration of safety. Some new information or amendments may be added afterwards. If the products are to be used far behind the expected time of use or you have any questions, please feel free to contact us. The stated cautions are for normal handling only. In case of special handling, sufficient care should be taken, in addition to the safety measures suitable for the situation. All chemical products should be treated with the recognition of "having unknown hazards and toxicity", which differ greatly depending on the conditions and handling when in use and/or the conditions and duration of storage. The products must be handled only by those who are familiar with specialized knowledge and have experience or under the guidance of those specialists throughout use from opening to storage and disposal. Safe usage conditions shall be set up on each user's own responsibility.