

SAFETY DATA SHEET

1. IDENTIFICATION

Product name: (1R,4S)-1,2,3,4-Tetrahydro-1,4-epoxynaphthalene-1-carboxylic Acid CAS No. : 1244954-14-0 Brand: Macklin Company: Shanghai Macklin Biochemical Co.,Ltd. Address: Shanghai Pudong Zhangjiang High-tech Park; 1st Building, 68 Huatuo Road; SHANGHAI CHINA Zip code: 201206 Telephone: +86 21-50706066 Fax: +86 21-50706099 E-mail: sales@macklin.cn; tech@macklin.cn Revision date: 2019/12/12

2. HAZARDS IDENTIFICATION

GHS classification PHYSICAL HAZARDS

no data available

HEALTH HAZARDS

no data available

ENVIRONMENTAL HAZARDS

no data available

GHS label elements, including precautionary statements

Pictograms or hazard symbols

Signal word no data available Hazard statements no data available Precautionary statements Prevention

no data available

Response no data available

Storage no data available

Disposal no data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components:(1R,4S)-1,2,3,4-Tetrahydro-1,4-epoxynaphthalene-1-carboxylic Acid CAS No.:1244954-14-0 Chemical Formula: $C_{11}H_{10}O_3$

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

no data available

4.3

Indication of immediate medical attention and special treatment needed, if necessary no data available

5. FIRE-FIGHTING MEASURES

5.1

Suitable extinguishing media

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

5.2

Specific hazards arising from the chemical

no data available

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

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

Collect and arrange disposal. Keep the chemical in suitable and closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

7. HANDLING AND STORAGE

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.

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.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational Exposure limit values

no data available Biological limit values no data available Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

Personal protective equipment

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

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state no data available Colour no data available Odour no data available Melting point/freezing point 13°C(lit.) Boiling point or initial boiling point and boiling range 62°C/12mmHg(lit.) Flammability no data available Lower and upper explosion limit/flammability limit no data available Flash point 82°C(lit.) Auto-ignition temperature no data available Decomposition temperature no data available pН no data available **Kinematic viscosity** no data available Solubility no data available Partition coefficient n-octanol/water no data available Vapour pressure no data available Density and/or relative density no data available 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 no data available 10.3 Possibility of hazardous reactions no data available 10.4 Conditions to avoid no data available 10.5 Incompatible materials no data available 10.6 Hazardous 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

12.1 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
no data available
12.3
Bioaccumulative potential
no data available
12.4
Mobility in soil
no data available
12.5
Other adverse effects
no data available

13. DISPOSAL CONSIDERATIONS

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: no data available IMDG: no data available IATA: no data available 14.2 **UN Proper Shipping Name** ADR/RID: no data available IMDG: no data available IATA: no data available 14.3 Transport hazard class(es) ADR/RID: no data available IMDG: no data available IATA: no data available 14.4 Packing group, if applicable ADR/RID: no data available IMDG: no data available IATA: no data available 14.5 **Environmental hazards** ADR/RID: no data available IMDG:no data available IATA:no data available 14.6 Special precautions for user no data available 14.7 Transport in bulk according to IMO instruments no data available

15. REGULATORY INFORMATION

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

European Inventory of Existing Commercial Chemical Substances (EINECS) Not Listed. **EC** Inventory Not 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. Korea Existing Chemicals List (KECL) Not Listed.

16. OTHER INFORMATION

This SDS was prepared sincerely on the basis of the information we could obtained, 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 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.