SAFETY DATA SHEET (SDS) for Triethylamine

Item	Value
SDS No.	1411801212500001
Revision Date	2026-01-03
Product Name	Triethylamine
Version	First Edition

SECTION 1 — IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY

Item	Details
Chinese name	三乙胺
English chemical name	Triethylamine
Supplier	Shanxi Lingze New Material Technology Co., Ltd.
Supplier address	Fine Chemical Industrial Park, Xiaoyi Economic Development Zone, Shanxi Province
Postal code	032300
E-mail	172164727@qq.com
Supplier service telephone	15135819969
Supplier emergency telephone	0358-7899858
Recommended and restricted uses	Solvent, polymerisation inhibitor, preservative, and for the synthesis of dyes, etc.

SECTION 2 — HAZARDS IDENTIFICATION

Emergency overview: Highly flammable liquid and vapour; causes severe skin burns and eye damage.

GHS hazard classification:

- Flammable liquids, Category 2
- Acute toxicity – oral, Category 4
- Acute toxicity – dermal, Category 4
- Acute toxicity – inhalation, Category 4
- Skin corrosion/irritation, Category 1A
- Serious eye damage/eye irritation, Category 1
- Specific target organ toxicity – single exposure, Category 3 (respiratory tract irritation)
- Hazardous to the aquatic environment – acute hazard, Category 3

Label elements:

Pictograms: 

Signal word: DANGER

Hazard statements:

- Highly flammable liquid and vapour.
- Harmful if swallowed.
- Harmful in contact with skin.
- Harmful if inhaled.
- Causes severe skin burns and eye damage.
- May cause respiratory irritation.
- Harmful to aquatic life.

Precautionary statements:

Prevention

- Keep away from heat, sparks, open flames and hot surfaces. No smoking.
- Keep container tightly closed.
- Ground/bond container and receiving equipment.
- Use explosion-proof electrical, ventilating and lighting equipment.
- Use only non-sparking tools.
- Take precautionary measures against static discharge.
- Avoid contact with eyes and skin. Wash thoroughly after handling.
- Do not eat, drink or smoke when using this product.
- Avoid breathing vapour or mist.
- Use only outdoors or in a well-ventilated area.
- Wear protective gloves, protective clothing, eye protection and face protection.
- Do not discharge into the environment.

Response

- **If inhaled:** Remove person to fresh air and keep comfortable for breathing.
- **Skin contact:** Immediately take off all contaminated clothing. Wash with plenty of soap and water. Contaminated clothing must be washed before reuse.
- **Eye contact:** Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do; continue rinsing.
- **If swallowed:** Rinse mouth. Do **NOT** induce vomiting. If you feel unwell, call a poison control centre or seek medical attention immediately.

Storage

- Store in a well-ventilated place. Keep cool. Store locked up.

Disposal

- Dispose of this product, its contents and containers in accordance with national and local regulations.

Physical and chemical hazards: Highly flammable; its vapour mixed with air can form explosive mixtures.

Health hazards: Strongly irritating to the respiratory tract; inhalation may cause pulmonary oedema and even death. Oral ingestion corrodes the mouth, oesophagus and stomach. Eye and skin contact may cause chemical burns.

Environmental hazards: Harmful to aquatic life.

Other hazards: No data available.

SECTION 3 — COMPOSITION/INFORMATION ON INGREDIENTS

☑ Substance □ Mixture

Hazardous component	Concentration range	CAS No.
Triethylamine	99.5 % – 99.98 %	121-44-8

SECTION 4 — FIRST-AID MEASURES

First aid:

- **Skin contact:** Immediately remove contaminated clothing and flush thoroughly with plenty of running water for at least 15 minutes. Seek medical attention.
- **Eye contact:** Immediately separate the eyelids and flush thoroughly with running water or physiological saline for at least 5–10 minutes. Seek medical attention.
- **Inhalation:** Quickly move the victim away from the site to fresh air. Keep the airway unobstructed. If breathing is difficult, administer oxygen. If breathing and heartbeat stop, perform cardiopulmonary resuscitation immediately. Seek medical attention.
- **Ingestion:** Rinse mouth; **do NOT induce vomiting**. Give milk or egg white to drink. Seek medical attention.

Advice for rescuers: Use personal protective equipment as required.

Special notes for physicians: Treat symptomatically.

SECTION 5 — FIRE-FIGHTING MEASURES

Extinguishing media: Foam, carbon dioxide, dry powder and sand.

Special hazards: Reacts violently with oxidising agents. Vapour is heavier than air, spreads along the ground and tends to accumulate in low-lying areas; on contact with an ignition source it may flash back. Corrosive. Combustion produces harmful carbon monoxide and nitrogen oxides.

Fire-fighting precautions and measures: Fire-fighters must wear self-contained breathing apparatus and full-body fire-resistant protective clothing against toxic gases, and fight the fire from an upwind position. Spray water to cool containers and, where possible, move containers from the fire area to an open area. If a container suddenly makes an abnormal sound or shows abnormal phenomena, evacuate immediately.

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Protective measures, protective equipment and emergency procedures for workers: Eliminate all ignition sources. Delineate a warning zone according to the area affected by liquid flow and vapour dispersion; evacuate uninvolved persons to a safe area on the crosswind/upwind side. Emergency responders are advised to wear positive-pressure self-contained breathing apparatus, anti-static, anti-corrosion protective clothing against toxic substances, and oil-resistant rubber gloves. All equipment used during operations shall be grounded. Do not touch or step across the released material. Cut off the source of the release as far as possible.

Environmental precautions: Prevent the released material from entering water bodies, sewers, basements or confined spaces.

Methods and materials for containment and cleaning up of released chemicals:

- **Small release:** Absorb with sand or other non-combustible material; collect the absorbent with clean, non-sparking tools.
- **Large release:** Build containment dikes or excavate pits. Absorb large quantities of liquid with sand, inert material or vermiculite. Neutralise with sodium bisulphate ($NaHSO_4$). Cover with alcohol-resistant foam to reduce evaporation. Water spray reduces evaporation but does not reduce the flammability of the released material in confined spaces. Transfer with an explosion-proof, corrosion-resistant pump to a tank truck or a dedicated collector. Spray water in mist form to disperse vapour and dilute the released liquid.

Preventive measures against secondary hazards: No data available.

SECTION 7 — HANDLING AND STORAGE

Handling precautions

- Operate in a closed system with enhanced ventilation.
- Operators must receive specialised training and strictly comply with operating procedures. Operators are advised to wear a duct-type gas mask, protective clothing against permeation of toxic substances, and oil-resistant rubber gloves.
- Keep away from fire sources and heat sources; smoking is strictly prohibited in the workplace.
- Use explosion-proof ventilation systems and equipment. Prevent vapours from leaking into workplace air.
- Avoid contact with oxidising agents and acids.
- Control the flow rate during filling to prevent static charge accumulation.
- Handle with care during loading and unloading to prevent damage to packaging and containers.
- Equip the area with fire-fighting equipment of appropriate type and quantity and with spill emergency response equipment.
- Empty containers may retain harmful residues.

Storage precautions

- Store in a cool, ventilated warehouse. Keep away from fire sources and heat sources. The warehouse temperature should not exceed 37 °C.
- Packaging shall be sealed and must not come into contact with air.
- Store separately from oxidising agents and acids; do not store mixed together.
- Use explosion-proof lighting and ventilation facilities. Do not use machinery, equipment or tools that readily produce sparks.
- Spill emergency response equipment and suitable containment materials shall be available in the storage area.

SECTION 8 — EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational exposure limits:

- China: No standard established
- USA (ACGIH): TLV-TWA 1 ppm [skin]; TLV-STEL 3 ppm [skin]

Biological limits: No standard established.

Monitoring methods: For toxic substances in air – solvent desorption followed by gas chromatography. Biological monitoring methods: no standard established.

Engineering controls: Closed production processes with enhanced ventilation. Provide safety showers and eyewash facilities.

Personal protective equipment:

- **Respiratory protection:** When vapour contact is possible, wear a filtering gas mask (full facepiece). During emergency rescue or evacuation, wear self-contained breathing apparatus.
- **Hand protection:** Wear oil-resistant rubber gloves.
- **Eye protection:** Already covered by the respiratory protection described above.
- **Skin and body protection:** Wear protective clothing against permeation of toxic substances.
- **Other protection:** No data available.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Property	Value
Appearance and state	Colourless oily liquid with a strong ammonia odour
pH	11.9 (1 % solution, calculated value)
Melting point (°C)	−114.8
Boiling point (°C)	89.5
Flash point (°C)	−7 (OC)

Property	Value
Upper explosive limit (% V/V)	8
Lower explosive limit (% V/V)	1.2
Saturated vapour pressure (kPa)	7.2 (20 °C)
Relative vapour density (air = 1)	3.5
Relative density (water = 1)	0.73
Kinematic viscosity (mPa·s)	No data available
Octanol/water partition coefficient	1.45
Ignition temperature (°C)	249
Auto-ignition temperature (°C)	232–249
Odour threshold	No data available
Critical temperature (°C)	262.45
Critical pressure (MPa)	3.032
Flammability	Flammable
Heat of combustion (kJ/mol)	−4334.6
Decomposition temperature (°C)	No data available
Solubility	Slightly soluble in water; soluble in ethanol, diethyl ether, acetone and most other organic solvents.

SECTION 10 — STABILITY AND REACTIVITY

- **Stability:** Stable.
- **Incompatible materials:** Strong oxidising agents, acids.
- **Conditions to avoid:** No data available.
- **Hazardous reactions:** Contact with incompatible materials such as strong oxidising agents presents a risk of fire and explosion.
- **Hazardous decomposition products:** Ammonia.

SECTION 11 — TOXICOLOGICAL INFORMATION

Acute toxicity:

- LD50: 460 mg/kg (rat, oral); 570 µl (416.1 mg)/kg (rabbit, dermal)
- LC50: 6 g/m³ (mouse, inhalation)

Skin irritation or corrosion: No data available.

Eye irritation or corrosion: Rabbit eye: 250 µg (24 hours) – severe irritation.

Respiratory or skin sensitisation: No data available.

Germ cell mutagenicity: No data available.

Carcinogenicity: No information.

Reproductive toxicity: Lowest toxic dose (TDLo), rabbit, oral: 6900 µg/kg (gestation days 1–3); effects on development observed.

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

Specific target organ/systemic toxicity – repeated exposure: Rabbit, inhalation 420 mg/m³, 7 h per exposure, 5 times per week for 6 weeks: pulmonary congestion and haemorrhage, peribronchitis, myocardial degeneration, hepatic and renal congestion, degeneration and necrosis.

Aspiration hazard: No data available.

SECTION 12 — ECOLOGICAL INFORMATION

Ecotoxicity:

- LC_{50}: 50.7 mg/L (48 h) (Japanese rice fish, *Oryzias latipes*)
- ErC_{50}: 8 mg/L (72 h) (algae)

Persistence and degradability:

- **Biodegradability:** Readily and rapidly biodegradable.
- **Abiotic degradability:** In air, at a hydroxyl radical concentration of 5.00×10^5 radicals/cm³, the degradation half-life is 4 h (theoretical).

Bioaccumulation or bioaccumulative potential: Based on the Kow value, the bioaccumulative potential of this substance is predicted to be weak.

Mobility in soil: Based on the Koc value, this substance is predicted to be readily mobile.

Other harmful effects: No data available.

SECTION 13 — DISPOSAL CONSIDERATIONS

Disposal methods:

- **Waste chemicals:** Dispose of by controlled incineration. Nitrogen oxides in the incinerator exhaust shall be removed by scrubbers.

- **Contaminated packaging:** Return containers to the manufacturer or dispose of them in accordance with national and local regulations.

Disposal precautions: Return emptied containers to the manufacturer or bury them at designated sites.

SECTION 14 — TRANSPORT INFORMATION

UN Dangerous Goods Number(UN No.): 1296

UN Transport Proper Shipping Name: Triethylamine

UN Hazard Classification: 3+8

Packing Group: Group II

Packing Mark: 

Packing methods: Small-opening steel drums; ampoules packed in ordinary wooden boxes; threaded-mouth glass bottles, iron-cap press-fit glass bottles, plastic bottles or metal drums (cans) packed in ordinary wooden boxes.

Marine pollutant (yes/no): No.

Transport precautions: Vehicles used for transport shall be equipped with fire-fighting equipment of the appropriate type and quantity and with spill emergency response equipment. In summer, transport preferably in the early morning or evening. Tank trucks (tank containers) used for transport shall be fitted with grounding chains, and compartment baffles may be installed inside the tank to reduce static charge generated by surging. Mixing or combined transport with oxidising agents, acids, edible chemicals, etc. is strictly prohibited. Protect from exposure to sunlight, rain and high temperatures during transport. During intermediate stops, keep away from fire sources, heat sources and high-temperature areas. Vehicles carrying this product must have flame arresters fitted to their exhaust pipes, and machinery, equipment and tools that readily produce sparks are prohibited for loading and unloading. For road transport, follow the prescribed routes and do not stop in residential areas or densely populated areas. For railway transport, hump shunting is prohibited. Bulk transport in wooden boats or cement boats is strictly prohibited.

SECTION 15 — REGULATORY INFORMATION

Regulatory information: The following laws, regulations and standards contain corresponding provisions on the safe use, storage, transport, loading and unloading, classification and labelling of this chemical:

Chemical name	A	B	C	D	E
Triethylamine	Listed	Not listed	Not listed	Not listed	Not listed

- **[A]** *Catalogue of Hazardous Chemicals (2022 Adjusted Version)*, Announcement No. 5 of 2015 of the State Administration of Work Safety
- **[B]** *Catalogue of Explosive-Precursor Hazardous Chemicals (2017 Version)*, Order No. 154 of the Ministry of Public Security
- **[C]** *Catalogue of Key Monitored Hazardous Chemicals*, SAWS General Administration III [2011] No. 95 and SAWS General Administration III [2013] No. 12
- **[D]** *Classification and Catalogue of Precursor Chemicals*, Decree No. 445 of the State Council
- **[E]** *Catalogue of Highly Toxic Substances (2003 Version)*, Wei Fa Jian [2003] No. 142

SECTION 16 — OTHER INFORMATION

Latest revision date: 3 January 2026

Revision note: This SDS is prepared in accordance with the standard *Safety Data Sheet – Content and Order of Sections* (GB/T 16483-2008). The GHS classification of the chemical in this SDS is a self-classification carried out by the enterprise in accordance with the series of standards for classification and labelling of chemicals (GB 30000.2-2013 to GB 30000.29-2013).

Explanation of abbreviations

- **MAC:** The concentration of a toxic chemical substance in the workplace that shall not be exceeded at any time during a working day.
- **PC-TWA:** The permissible exposure concentration averaged over an 8-hour working day and a 40-hour working week, with time as the weighting factor.
- **PC-STEL:** The concentration permitted for short-term (15 min) exposure, on the premise that the PC-TWA is complied with.
- **TLV-C:** A ceiling limit that shall not be exceeded even instantaneously; specified specifically for certain substances such as irritant gases or substances whose effects are predominantly acute.
- **TLV-TWA:** The time-weighted average concentration for an 8-hour working day or a 40-hour working week, at which repeated exposure over a lifetime working period is not expected to produce adverse effects in nearly all workers.
- **TLV-STEL:** The maximum concentration to which a worker is permitted continuous exposure for 15 min, provided the TLV-TWA is complied with. This concentration shall not be exceeded more than 4 times per working day, with at least 60 min between two exposures. It is a supplement to the TLV-TWA.
- **IARC:** International Agency for Research on Cancer
- **RTECS:** Registry of Toxic Effects of Chemical Substances of the US National Institute for Occupational Safety and Health
- **HSDB:** Hazardous Substances Data Bank of the US National Library of Medicine
- **ACGIH:** American Conference of Governmental Industrial Hygienists

Disclaimer

The format of this Safety Data Sheet complies with the requirements of GB/T 16483 and GB/T 17519 of China. The data are derived from authoritative international databases, and other information is based on the knowledge currently available to the company. We endeavour to ensure the accuracy of all information herein; however, owing to the diversity of information sources and the limits of the company's knowledge, this document is provided for the user's reference only. Users of this Safety Data Sheet shall judge the reasonableness of the relevant information according to the purpose of use. We accept no liability for any damage arising from the handling, storage, use or disposal of this product.