Material Safety Data Sheet

1,4-diazabicyclooctane

Section 1 - Chemical Product and Company Identification

Product Name: 1,4-diazabicyclooctane
Other Name: TEDA; BACO; dabco33lv
CAS NO.: 280-57-9

Manufacturer/Supplier:
Tianjin Realet Chemical Technology Co.,Ltd.
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Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EC number
280-57-9	1,4-diazabicyclooctane	100%	205-999-9

Section 3 - Hazards Identification

Classification of the substance or mixture

Flammable solids, Category 1
Acute toxicity - Category 4, Oral
Skin irritation, Category 2
Serious eye damage, Category 1

GHS label elements, including precautionary statements

Pictogram(s)

Signal word Danger

Hazard statement(s) H228 Flammable solid
H302 Harmful if swallowed
H315 Causes skin irritation
H318 Causes serious eye damage

Precautionary statement(s)

Prevention	P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P240 Ground and bond container and receiving equipment. P241 Use explosion-proof [electrical/ventilating/lighting/...] equipment. P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/... P264 Wash ... thoroughly after handling. P270 Do not eat, drink or smoke when using this product.
Response	P370+P378 In case of fire: Use ... to extinguish. P301+P317 IF SWALLOWED: Get medical help. P330 Rinse mouth. P302+P352 IF ON SKIN: Wash with plenty of water/... P321 Specific treatment (see ... on this label). P332+P317 If skin irritation occurs: Get medical help. P362+P364 Take off contaminated clothing and wash it before reuse. P305+P354+P338 IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P317 Get medical help.
Storage	none
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.

Other hazards which do not result in classification

no data available

Section 4 - First Aid Measures

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.

Most important symptoms/effects, acute and delayed

no data available

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

no data available

Section 5 - Fire Fighting Measures

Suitable extinguishing media

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

Specific hazards arising from the chemical

no data available

Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

Section 6 - Accidental Release Measures

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.

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.

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.

Section 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.

Section 8 - Exposure Controls, Personal Protection

Control parameters

Occupational Exposure limit values

Component	1,4-diazabicyclooctane			
CAS No.	280-57-9			
	Limit value - Eight hours		**Limit value - Short term**	
	ppm	**mg/m3**	**ppm**	**mg/m3**
Canada - Ontario	1	4,6		
	Remarks			

Biological limit values

no data available

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.

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

Physical state	Solid. Crystalline.
Colour	White.
Odour	no data available
Melting point/freezing point	158 °C.
Boiling point or initial boiling point and boiling range	173.4 °C. Atm. press.:1 Bar.
Flammability	no data available
Lower and upper explosion limit/flammability limit	no data available
Flash point	62.2 °C. Atm. press.:101.3 kPa.
Auto-ignition temperature	no data available
Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	no data available
Solubility	13 g/100 g acetone at 25 deg C; 51 g/100 g benzene at 25 deg C; 77 g/100 g ethanol at 25 deg C; 26.1 g/100 g methyl ethyl ketone at 25 deg C
Partition coefficient n-octanol/water	log Pow = -0.49. Temperature:20 °C.
Vapour pressure	0.43 hPa. Temperature:23 °C.
Density and/or relative density	1.14. Temperature:28 °C.
Relative vapour density	no data available
Particle characteristics	no data available

Section 10 - Stability and Reactivity

Reactivity

no data available

Chemical stability

no data available

Possibility of hazardous reactions

no data available

Conditions to avoid

no data available

Incompatible materials

In paint manufacture, preliminary small-scale (12 g) tests in which ethyl acetate soln of cellulose nitrate and the other components were mixed in a lagged boiling tube showed large exotherms (which boiled the solvent off) with 1,4-diazabicyclo(2.2.2)octane ... Subsequent test in which small portions of ... undiluted /1,4-diazabicyclo(2.2.2.)octane/ and dried cellulose nitrate linters were contacted (with a little added butyl acetate for the solid phenol) under various condition ... ignition /occurred/ ...

Hazardous decomposition products

When heated to decomposition it emits toxic fumes of /nitrogen oxides/.

Section 11 - Toxicological Information

Acute toxicity

- Oral: LD50 - rat (male) - 700 mg/kg bw.
- Inhalation: LC0 - rat (male/female) - no data.
- Dermal: LD50 - rabbit (female) - > 2 000 mg/kg bw.

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

Toxicity

- Toxicity to fish: LC0 - Cyprinus carpio - > 100 mg/L - 96 h.
- Toxicity to daphnia and other aquatic invertebrates: EC50 - Daphnia magna - > 100 mg/L - 48 h.
- Toxicity to algae: EC50 - Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum) - 110 mg/L - 72 h.
- Toxicity to microorganisms: EC10 - Pseudomonas putida - 210.9 mg/L - 17 h.

Persistence and degradability

AEROBIC: Triethylenediamine, present at 100 mg/L, reached 0% of its theoretical BOD in 4 weeks using an activated sludge inoculum at 30 mg/L and the Japanese MITI test(1).[(1) NITE; Chemical Risk Information Platform (CHRIP). Biodegradation and Bioconcentration. Ver 2006.01.30 Updated. National Institute of Technology and Evaluation. Tokyo, Japan. Thiodiethylene glycolbicyclo

Bioaccumulative potential

BCF values of <1.3 and <13 were measured using carp (Cyprinus carpio) which were exposed over an 6-week period(1). According to a classification scheme(2), these BCF values suggest the potential for bioconcentration in aquatic organisms is low(SRC).[(1) NITE; Chemical Risk Information Platform (CHRIP). Biodegradation and Bioconcentration. Ver 2006.01.30 Updated. National Institute of Technology and Evaluation. Tokyo, Japan. Thiodiethylene glycolbicyclo

Mobility in soil

The Koc of triethylenediamine is estimated as 3.4(SRC), using a water solubility of 450 g/L(1) and a regression-derived equation(2). According to a classification scheme(3), this estimated Koc value suggests that triethylenediamine is expected to have very high mobility in soil(SRC). The pKa1 and pKa2 values of triethylenediamine are 3.0 and 8.7(1), respectively, indicating that this compound will primarily exist in the cation form in the environment and cations generally have lower mobility in soils than their neutral counterparts(4).

Other adverse effects

no data available

Section 13 - Disposal Considerations

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

UN Number

ADR/RID: Not dangerous goods. (For reference only, please check.)	IMDG: Not dangerous goods. (For reference only, please check.)	IATA: Not dangerous goods. (For reference only, please check.)

UN Proper Shipping Name

ADR/RID: Not dangerous goods. (For reference only, please check.)	IMDG: Not dangerous goods. (For reference only, please check.)	IATA: Not dangerous goods. (For reference only, please check.)

Transport hazard class(es)

ADR/RID: Not dangerous goods. (For reference only, please check.)	IMDG: Not dangerous goods. (For reference only, please check.)	IATA: Not dangerous goods. (For reference only, please check.)

Packing group, if applicable

ADR/RID: Not dangerous goods. (For reference only, please check.)	IMDG: Not dangerous goods. (For reference only, please check.)	IATA: Not dangerous goods. (For reference only, please check.)

Environmental hazards

ADR/RID: No	IMDG: No	IATA: No

Special precautions for user

no data available

Transport in bulk according to IMO instruments

no data available

Section 15 - Regulatory Information

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

Chemical name	Common names and synonyms	CAS number	EC number
1,4-diazabicyclooctane	1,4-diazabicyclooctane	280-57-9	205-999-9
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)			Listed.
Korea Existing Chemicals List (KECL)			Listed.

Section 16 - Additional Information

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.