

SECTION 1: Identification

1.1. Identification

Product form	: Substance
Trade name	: 1,4-Diazabicyclo[2.2.2]octane (crystalline TEDA)
Chemical name	:
CAS-No.	: 280-57-9
Product code	: 15154
Formula	: C6H12N2

1.2. Recommended use and restrictions on use

Recommended use	: Use as laboratory reagent, Manufacture of substances
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1.3. Supplier

Supplier

Polysciences
400 Valley Road
Warrington, PA 18976 - United States
T +1 215 343 6484 - F +1 215 343 0214
info@polysciences.com - www.polysciences.com

1.4. Emergency telephone number

Emergency number	: 24-hour emergency phone number ChemTel 1-800-255-3924
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SECTION 2: Hazard(s) identification


2.1. Classification of the substance or mixture

GHS US classification

Flammable solids Category 1	Flammable solid
Acute toxicity (oral) Category 4	Harmful if swallowed
Acute toxicity (inhalation) Category 4	Harmful if inhaled
Skin corrosion/irritation Category 2	Causes skin irritation
Serious eye damage/eye irritation Category 2B	Causes eye irritation

2.2. GHS Label elements, including precautionary statements

GHS US labeling

Hazard pictograms (GHS US)	: 
Signal word (GHS US)	: Danger
Hazard statements (GHS US)	: Flammable solid Harmful if swallowed or if inhaled Causes skin irritation Causes eye irritation
Precautionary statements (GHS US)	: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking Ground/Bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Avoid breathing dust/fume/gas/mist/vapors/spray. Wash hands, forearms and face thoroughly after handling. Do not eat, drink or smoke when using this product.

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

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SECTION 3: Composition/Information on ingredients

3.1. Substances

Name	Product identifier	%	GHS US classification
1,4-Diazabicyclo[2.2.2]octane (crystalline TEDA) (Main constituent)	(CAS-No.) 280-57-9	≤ 100	Flam. Sol. 1, H228 Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Inhalation), H332 Skin Irrit. 2, H315 Eye Irrit. 2B, H320

Full text of hazard classes and H-statements : see section 16

3.2. Mixtures

Not applicable

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general	: Call a poison center/doctor/physician if you feel unwell.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor/physician if you feel unwell.
First-aid measures after skin contact	: Wash skin with plenty of water. Take off contaminated clothing. If skin irritation occurs: Get medical advice/attention.
First-aid measures after eye contact	: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion	: Call a poison center/doctor/physician if you feel unwell. Rinse mouth.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after skin contact	: Irritation.
Symptoms/effects after eye contact	: Mild eye irritation.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media	: Water spray. Dry powder. Foam.
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5.2. Specific hazards arising from the chemical

Fire hazard	: Flammable solid.
Hazardous decomposition products in case of fire	: Toxic fumes may be released.

5.3. Special protective equipment and precautions for fire-fighters

Protection during firefighting	: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.
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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures	: Ventilate spillage area. Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid contact with skin and eyes. No open flames, no sparks, and no smoking.
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6.1.2. For emergency responders

Protective equipment	: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
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6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up	: Mechanically recover the product. Notify authorities if product enters sewers or public waters.
Other information	: Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

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SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Ensure good ventilation of the work station. Wear personal protective equipment. Use only outdoors or in a well-ventilated area. Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid contact with skin and eyes. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground/bond container and receiving equipment.
- Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

- Technical measures : Ground/bond container and receiving equipment.
- Storage conditions : Store at room temp. Store in a well-ventilated place. Keep cool. Protect from sunlight. Keep away from ignition sources.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

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No additional information available

8.2. Appropriate engineering controls

- Appropriate engineering controls : Ensure good ventilation of the work station.
- Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Hand protection:

Protective gloves

Eye protection:

Safety glasses

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment. [In case of inadequate ventilation] wear respiratory protection.

Personal protective equipment symbol(s):



SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

- Physical state : Solid
- Appearance : white crystalline solid ammoniacal.
- Color : No data available
- Odor : No data available
- Odor threshold : No data available
- pH : No data available
- Melting point : 158 °C C
- Freezing point : Not applicable
- Boiling point : 174 °C C
- Flash point : 144
- Relative evaporation rate (butyl acetate=1) : No data available

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Flammability (solid, gas)	: Non flammable. Flammable solid.
Vapor pressure	: 0.5 mm Hg
Relative vapor density at 20°C	: no data
Relative density	: No data available
Molecular mass	: 112.2
Solubility	: Water: 39 %
Partition coefficient n-octanol/water (Log Pow)	: No data available
Auto-ignition temperature	: Not applicable
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: Not applicable
Explosive properties	: No data available
Oxidizing properties	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport. Flammable solid.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7). Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	: Harmful if swallowed.
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Harmful if inhaled.

ATE US (oral)	500 mg/kg body weight
ATE US (gases)	4500 ppmV/4h
ATE US (vapors)	11 mg/l/4h
ATE US (dust, mist)	1.5 mg/l/4h

Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Causes eye irritation.
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified
Viscosity, kinematic	: No data available

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Symptoms/effects after skin contact : Irritation.
Symptoms/effects after eye contact : Mild eye irritation.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Not applicable

Transportation of Dangerous Goods

Not applicable

Transport by sea

Not applicable

Air transport

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

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Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA

1,4-Diazabicyclo[2.2.2]octane (crystalline TEDA) (280-57-9)

Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

National regulations

No additional information available

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15.3. US State regulations

SECTION 16: Other information

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Hazard Rating

- | | |
|--------------|--|
| Health | : 2 Moderate Hazard - Temporary or minor injury may occur |
| Flammability | : 2 Moderate Hazard - Materials which must be moderately heated or exposed to high ambient temperatures before ignition will occur. Includes liquids having a flash point at or above 100 F but below 200 F. (Classes II IIIA) |
| Physical | : 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives. |

SDS US (GHS HazCom 2012)

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