



# SAFETY DATA SHEET

according to JIS Z 7253:2019

## 1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	N,N,N',N'-Tetramethylethylenediamine
Product code	:	T0147
Company	:	TOKYO CHEMICAL INDUSTRY CO., LTD.
Address	:	6-15-9 Toshima, Kita-ku, Tokyo 114-0003, Japan
Responsible Department	:	Global Business Department
Telephone	:	+81-3-5640-8878
Telefax	:	+81-3-5640-8902
E-mail address	:	globalbusiness@tcichemicals.com
Recommended use	:	For laboratory research purposes.
Restrictions on use	:	Not for drug or household use.

## 2. HAZARDS IDENTIFICATION

### GHS classification of chemical product

Flammable liquids	:	Category 2
Acute toxicity (Oral)	:	Category 3
Acute toxicity (Inhalation)	:	Category 3
Acute toxicity (Dermal)	:	Category 4
Skin corrosion/irritation	:	Category 1B
Serious eye damage/eye irritation	:	Category 1
Specific target organ toxicity - single exposure	:	Category 1 (Central nervous system)

### GHS label elements

Hazard pictograms	:	
Signal Word	:	Danger
Hazard Statements	:	Highly flammable liquid and vapor. Toxic if swallowed or if inhaled. Harmful in contact with skin. Causes severe skin burns and eye damage. Causes damage to organs (Central nervous system).
Precautionary Statements	:	<b>Prevention:</b> Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ ventilating/ lighting/ equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Do not breathe dust/ fume/ gas/ mist/ vapors/ spray. Wash skin thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves/ protective clothing/ eye protection/ face pro-

tection.

**Response:**

IF SWALLOWED: Immediately call a POISON CENTER/ doctor. Rinse mouth.

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.

IF exposed or concerned: Call a POISON CENTER/ doctor.

Take off contaminated clothing and wash it before reuse.

In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

**Storage:**

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

Store in a well-ventilated place. Keep cool.

Store locked up.

**Disposal:**

Dispose of contents/ container to an approved waste disposal plant.

**Other hazards which do not result in classification**

None known.

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### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Substance

**Components**

Chemical name	CAS RN	Concentration (% w/w)	ENCS/ISHL number
N,N,N',N'-Tetramethylethylenediamine	110-18-9	98	2-155

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### 4. FIRST AID MEASURES

If inhaled : Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician.

In case of skin contact : Take off all contaminated clothing immediately. If on skin, rinse well with water. Call a POISON CENTER or doctor/ physician.

In case of eye contact : Rinse with plenty of water. If easy to do, remove contact lens, if worn. Immediately call a POISON CENTER or doctor/ physician.

If swallowed : Immediately call a POISON CENTER or doctor/ physician. Rinse mouth.

Most important symptoms and effects, both acute and delayed : None known.

### 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Dry powder, Foam, Water spray, Carbon dioxide (CO2)

Specific hazards during fire fighting : No information available.

Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Immediately evacuate personnel to safe areas.

Remove undamaged containers from fire area if it is safe to do so.

Special protective equipment for fire-fighters : Use personal protective equipment.

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## 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Wear suitable protective equipment.  
Keep people away from and upwind of spill/leak.  
Ensure adequate ventilation.  
Entry to non-involved personnel should be controlled around the leakage area by roping off, etc.
- Environmental precautions : Prevent product from entering drains.
- Methods and materials for containment and cleaning up : Collect as much of the spill as possible with a suitable absorbent material.
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## 7. HANDLING AND STORAGE

### Handling

- Technical measures : Prevent generation of vapor or mist.  
Take precautionary measures against static discharge.  
Use explosion-proof equipment.
- Local/Total ventilation : Ensure adequate ventilation.  
Handle product only in closed system or provide appropriate exhaust ventilation at machinery.  
Use a local exhaust ventilation.
- Advice on safe handling : Avoid contact with skin, eyes and clothing.  
Wear personal protective equipment.  
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
Do not subject to grinding, shock or friction.  
Wash hands and face thoroughly after handling.
- Avoidance of contact : Oxidizing agents, Copper, Copper alloys
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### Storage

- Conditions for safe storage : Keep container tightly closed.  
Store in a cool and shaded area.  
Keep in a well-ventilated place.  
Use explosion-proof equipment.  
Keep under inert gas.  
Store locked up.
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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Threshold limit value and permissible exposure limits for each component in the work environment

Contains no substances with occupational exposure limit values.

- Engineering measures : Install a closed system or local exhaust.  
Also install safety shower and eye bath.

### Personal protective equipment

- Respiratory protection : Gas mask  
Self-contained breathing apparatus
- Hand protection : Impervious gloves
- Eye protection : Safety glasses  
Safety goggles  
Face-shield
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Skin and body protection : Impervious protective clothing

\*Use personal protective equipment(PPE) approved under appropriate government standards and follow local and national regulations.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state : liquid

Color : colorless

Odor : No data available

Odor Threshold : No data available

Melting point/freezing point : -55 °C

Boiling point/boiling range : 122 °C

Flammability : No data available

Lower explosion limit and upper explosion limit / flammability limit

Upper explosion limit / Upper flammability limit : 9.1 %(V)

Lower explosion limit / Lower flammability limit : 1 %(V)

Flash point : 17 °C

Decomposition temperature : No data available

pH : No data available

Autoignition temperature : No data available

Viscosity  
Viscosity, dynamic : No data available

Viscosity, kinematic : No data available

Solubility(ies)  
Water solubility : very soluble

Solubility in other solvents : No data available

Partition coefficient: n-octanol/water (log value) : 0.30

Vapor pressure : No data available

Density and / or relative density  
Relative density : 0.78

Relative vapor density : No data available

Molecular weight : 116.21 g/mol

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## 10. STABILITY AND REACTIVITY

Reactivity	:	No data available
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	None under normal processing.
Conditions to avoid	:	Electrical spark Open flame Electrostatic discharge Exposure to air.
Incompatible materials	:	Oxidizing agents, Copper, Copper alloys
Hazardous decomposition products	:	Carbon monoxide, Carbon dioxide (CO <sub>2</sub> ), Nitrogen oxides (NO <sub>x</sub> )

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## 11. TOXICOLOGICAL INFORMATION

### Acute toxicity

#### Product:

Acute oral toxicity	:	Assessment: The component/mixture is toxic after single ingestion.
Acute inhalation toxicity	:	Assessment: The component/mixture is toxic after short term inhalation.
Acute dermal toxicity	:	Assessment: The component/mixture is moderately toxic after single contact with skin.

#### Components:

##### **N,N,N',N'-Tetramethylethylenediamine:**

Acute oral toxicity	:	LD50 (Rat): 268 mg/kg Assessment: The component/mixture is toxic after single ingestion.
Acute inhalation toxicity	:	LC50 (Rat): 1318 ppm Exposure time: 4 h Test atmosphere: gas Assessment: The component/mixture is toxic after short term inhalation.
Acute dermal toxicity	:	LD50 (Rabbit): 1,230 mg/kg Assessment: The component/mixture is moderately toxic after single contact with skin.

### Skin corrosion/irritation

#### Product:

Result	:	Causes burns.
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#### Components:

##### **N,N,N',N'-Tetramethylethylenediamine:**

Result	:	Causes burns.
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### Serious eye damage/eye irritation

#### Product:

Result	:	Irreversible effects on the eye
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#### Components:

##### **N,N,N',N'-Tetramethylethylenediamine:**

Result	:	Irreversible effects on the eye
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**Respiratory or skin sensitization** : No information available.

**Germ cell mutagenicity** : No information available.

**Carcinogenicity** : No information available.

**Reproductive toxicity** : No information available.

#### **STOT-single exposure**

##### **Product:**

Target Organs : Central nervous system  
Assessment : Causes damage to organs.

##### **Components:**

###### **N,N,N',N'-Tetramethylethylenediamine:**

Target Organs : Central nervous system  
Assessment : Causes damage to organs.

**STOT-repeated exposure** : No information available.

**Repeated dose toxicity** : No information available.

**Aspiration toxicity** : No information available.

**RTECS No.** : KV7175000 (N,N,N',N'-Tetramethylethylenediamine)

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## **12. ECOLOGICAL INFORMATION**

##### **Ecotoxicity**

No data available

##### **Persistence and degradability**

No data available

##### **Bioaccumulative potential**

##### **Components:**

###### **N,N,N',N'-Tetramethylethylenediamine:**

Partition coefficient: n-octanol/water (log value) : 0.30

##### **Mobility in soil**

No data available

##### **Hazardous to the ozone layer**

Not applicable

##### **Other adverse effects**

No data available

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## **13. DISPOSAL CONSIDERATIONS**

##### **Disposal methods**

Waste from residues : Disposal in accordance with local and national regulations.  
Take precautions against ignition or explode.  
Entrust disposal to a licensed waste disposal company.

Contaminated packaging : Disposal in accordance with local and national regulations.  
Before disposal of used container, remove contents completely.

## 14. TRANSPORT INFORMATION

### International Regulations

#### IATA-DGR

UN/ID No. : UN 2372  
Proper shipping name : 1,2-Di-(dimethylamino) ethane  
Class : 3  
Packing group : II

#### IMDG-Code

UN number : UN 2372  
Proper shipping name : 1,2-DI(DIMETHYLAMINO)ETHANE  
  
Class : 3  
Packing group : II  
EmS Code : F-E, S-D  
  
ERG Code : 129

## 15. REGULATORY INFORMATION

### Related Regulations

#### Fire Service Law

Group 4, Type 1 petroleums, Water soluble liquid, Hazardous rank II

#### Chemical Substance Control Law

Not applicable for Specified Chemical Substance, Monitoring Chemical Substance and Priority Assessment Chemical Substance.

#### Industrial Safety and Health Law

##### Harmful Substances Prohibited from Manufacture

Not applicable

##### Harmful Substances Required Permission for Manufacture

Not applicable

##### Substances Prevented From Impairment of Health

Not applicable

##### Circular concerning Information on Chemicals having Mutagenicity - Annex 2: Information on Existing Chemicals having Mutagenicity

Not applicable

##### Circular concerning Information on Chemicals having Mutagenicity - Annex 1: Information on Notified Substances having Mutagenicity

Not applicable

#### Substances Subject to be Notified Names

##### Article 57-2 (Enforcement Order Table 9)

Chemical name	Concentration (%)	Remarks
N,N,N',N'-tetramethylethylenediamine	>=90 - <=100	From April 1st, 2025

#### Substances Subject to be Indicated Names

##### Article 57 (Enforcement Order Article 18)

Chemical name	Remarks
N,N,N',N'-tetramethylethylenediamine	From April 1st, 2025

#### Skin and Eye Damage Substances for PPE Requirements (ISHL MO Art. 594-2)

Chemical name
N,N,N',N'-tetramethylethylenediamine

**Carcinogenic Substances (Article 577-2 of the Occupational Health and Safety Regulations)**

Not applicable

**Ordinance on Prevention of Hazards Due to Specified Chemical Substances**

Not applicable

**Ordinance on Prevention of Lead Poisoning**

Not applicable

**Ordinance on Prevention of Tetraalkyl Lead Poisoning**

Not applicable

**Ordinance on Prevention of Organic Solvent Poisoning**

Not applicable

**Poisonous and Deleterious Substances Control Law**

Not applicable

**Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof**

Not applicable

**Narcotics and Psychotropics Control Act**

Not applicable

**Law on the Prohibition of Chemical Weapons and the Regulation of Specific Chemicals**

Not applicable

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**16. OTHER INFORMATION**

In this SDS, if the concentration of substances subject to notification under the Industrial Safety and Health Law is indicated as a range, it includes cases where it is a trade secret.

Date format : yyyy/mm/dd

This SDS was prepared sincerely based on the information 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 operations, sufficient care should be taken, in addition to the safety measures suitable for the given 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.