

# Material Safety Data Sheet

## TETRAETHYLENEPENTAMINE

### 1. IDENTIFICATION

**Product name:** Tetraethylenepentamine (mixture of branched chain isomers and cyclic compounds)

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### 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

**PHYSICAL HAZARDS**

Not classified

**HEALTH HAZARDS**

Acute toxicity (Oral)

Category 5

Acute toxicity (Dermal)

Category 3

Skin corrosion/irritation

Category 1C

Serious eye damage/eye irritation

Category 1

Skin sensitization

Category 1

**ENVIRONMENTAL HAZARDS**

Acute aquatic hazard

Category 1

Long-term aquatic hazard

Category 1

Label elements

Pictograms or hazard symbols



**Signal word**

Danger

**Hazard statements**

May be harmful if swallowed

Toxic in contact with skin

Causes severe skin burns and eye damage

May cause an allergic skin reaction

Very toxic to aquatic life

Very toxic to aquatic life with long lasting effects

**Precautionary statements**

**[Prevention]**

Do not breathe dusts or mists.

Avoid release to the environment.

Contaminated work clothing should not be allowed out of the workplace.

Wash hands and face thoroughly after handling.

Wear protective gloves, protective clothing, face protection.

**[Response]**

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor.

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Immediately call a POISON CENTER or doctor. Wash contaminated clothing before reuse.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

Immediately call a POISON CENTER or 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 or doctor.  
Call a POISON CENTER or doctor if you feel unwell.  
Collect spillage.  
Store locked up.  
Dispose of contents and container in accordance with local, regional, national regulations.

[Storage]  
[Disposal]

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Substance/mixture:** Substance  
**Components:** Tetraethylenepentamine (mixture of branched chain isomers and cyclic compounds)  
**Percent:** ....  
**CAS RN:** 112-57-2  
**Chemical Formula:** C<sub>8</sub>H<sub>23</sub>N<sub>5</sub>

### 4. FIRST AID MEASURES

**Inhalation:** Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.  
**Skin contact:** Remove/Take off immediately all contaminated clothing. Gently wash with plenty of soap and water. Immediately call a POISON CENTER or doctor/physician.  
**Eye contact:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.  
**Ingestion:** Immediately call a POISON CENTER or doctor/physician. Rinse mouth. Do NOT induce vomiting.  
**Protection of first-aiders:** A rescuer should wear personal protective equipment, such as rubber gloves and air-tight goggles.

### 5. FIRE-FIGHTING MEASURES

**Suitable extinguishing media:** Dry chemical, foam, water in large amounts, carbon dioxide.  
**Specific hazards arising from the chemical:** Take care as it may decompose upon combustion or in high temperatures to generate poisonous fume.  
**Precautions for firefighters:** Fire-extinguishing work is done from the windward and the suitable fire-extinguishing method according to the surrounding situation is used. Uninvolved persons should evacuate to a safe place. In case of fire in the surroundings: Remove movable containers if safe to do so.  
**Special protective equipment for firefighters:** When extinguishing fire, be sure to wear personal protective equipment

### 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures:** Use personal 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:** Be careful not to let it flow into rivers, etc., since adverse effects on the environment are concerned.  
**Methods and materials for containment and cleaning up:** Absorb spilled material in a suitable absorbent (e.g. rag, dry sand, earth, saw-dust). In case of large amount of spillage, contain a spill by bunding. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

## 7. HANDLING AND STORAGE

### Precautions for safe handling

- Technical measures:** Handling is performed in a well ventilated place. Wear suitable protective equipment. Prevent generation of vapour or mist. Wash hands and face thoroughly after handling.  
Use a closed system if possible. Use a ventilation, local exhaust if vapour or aerosol will be generated.
- Advice on safe handling:** Avoid contact with skin, eyes and clothing.

### Conditions for safe storage, including any incompatibilities

- Storage conditions:** Keep container tightly closed. Store in a cool and dark place.  
Store under inert gas.  
Protect from moisture.  
Store locked up.  
Store away from incompatible materials such as oxidizing agents.  
Hygroscopic, Air-sensitive
- Packaging material:** Comply with laws.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

- Engineering controls:** Install a closed system or local exhaust. Also install safety shower and eye bath.
- Personal protective equipment**
- Respiratory protection:** Half or full facepiece respirator, self-contained breathing apparatus(SCBA), supplied air respirator, etc. Use respirators approved under appropriate government standards and follow local and national regulations.
- Hand protection:** Impervious gloves.
- Eye protection:** Safety goggles. A face-shield, if the situation requires.
- Skin and body protection:** Impervious protective clothing. Protective boots, if the situation requires.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

- Physical state (20°C):** Liquid
- Form:** Clear
- Colour:** Very pale yellow - Yellow
- Odour:** Ammoniacal
- pH:** No data available
- Melting point/freezing point:** -40°C
- Boiling point/range:** 375°C
- Flash point:** 163°C
- Flammability or explosive limits:**
- Lower:** 0.1%
- Upper:** 15%
- Vapour pressure:** 1.3Pa/20°C
- Vapour density:** 6.5
- Relative density:** 0.99
- Solubility(ies):**
- [Water]** Miscible
- [Other solvents]**
- Miscible:** Many organic solvents
- Log Pow:** -3.16
- Autoignition temperature:** 321°C

## 10. STABILITY AND REACTIVITY

- Chemical stability:** Stable under proper conditions.
- Possibility of hazardous reactions:** No special reactivity has been reported.
- Incompatible materials:** Oxidizing agents, Acids, Chlorinated hydrocarbons
- Hazardous decomposition products:** Carbon dioxide, Carbon monoxide, Nitrogen oxides (NOx)

## 11. TOXICOLOGICAL INFORMATION

<b>Acute Toxicity:</b>	ipr-rat LD50:205 mg/kg ivn-mus LD50:320 mg/kg orl-rat LD50:3990 mg/kg skn-rbt LD50:660 uL/kg
<b>Skin corrosion/irritation:</b>	skn-rbt 5 mg/24H SEV
<b>Serious eye damage/irritation:</b>	eye-rbt 100 mg/24H MOD
<b>Germ cell mutagenicity:</b>	dns-rat-lvr 10 ug/L mmo-sat 333 ug/plate (+/-S9)
<b>Carcinogenicity:</b>	
<b>IARC =</b>	No data available
<b>NTP =</b>	No data available
<b>Reproductive toxicity:</b>	No data available
<b>RTECS Number:</b>	KH8585000

## 12. ECOLOGICAL INFORMATION

<b>Ecotoxicity:</b>	
<b>Fish:</b>	96h LC50:>70 mg/L (Oryzias latipes)
<b>Crustacea:</b>	48h EC50:13 mg/L (Daphnia magna)
<b>Algae:</b>	72h EC50:0.043 mg/L (Selenastrum capricornutum)
<b>Persistence / degradability:</b>	No data available
<b>Bioaccumulative potential(BCF):</b>	4.2
<b>Mobility in soil</b>	
<b>Log Pow:</b>	-3.16
<b>Soil adsorption (Koc):</b>	3.6
<b>Henry's Law (PaM<sup>3</sup>/mol):</b>	3 x 10 <sup>-15</sup>

## 13. DISPOSAL CONSIDERATIONS

Recycle to process, if possible. Consult your local regional authorities. You may be able to burn in a chemical incinerator equipped with an afterburner and scrubber system. Observe all federal, state and local regulations when disposing of the substance.

## 14. TRANSPORT INFORMATION

<b>Hazards Class:</b>	8: Corrosive.
<b>UN-No:</b>	2320
<b>Proper shipping name:</b>	Tetraethylenepentamine
<b>Packing group:</b>	III
<b>Marine pollutant</b>	Y

## 15. REGULATORY INFORMATION

**Regulations on the Control over Safety of Dangerous Chemicals (State Council announces on January 26, 2002 and revised on February 16,2011):** Safe use and production, the storage of a dangerous chemical, transport, loading and unloading were prescribed.

**This product is included in the list of dangerous chemicals(2015)/Serial No.:** 2086

## 16. Other Information

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