

# SAFETY DATA SHEETS

According to Globally Harmonized System of Classification and Labelling of Chemicals (GHS) - Sixth revised edition

Version: 1.0

Creation Date: Aug 12, 2017

Revision Date: Aug 12, 2017

## 1. Identification

### 1.1 GHS Product identifier

Product name	Triethylenetetramine
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### 1.2 Other means of identification

Product number	–
Other names	2, 2, 2-tetramine

### 1.3 Recommended use of the chemical and restrictions on use

Identified uses	For industry use only.
Uses advised against	no data available

## 2. Hazard identification

### 2.1 Classification of the substance or mixture

Acute toxicity - Dermal, Category 4

Skin corrosion, Category 1B

Skin sensitization, Category 1

Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 3

### 2.2 GHS label elements, including precautionary statements

Pictogram(s)	
Signal word	Danger

<b>Hazard statement(s)</b>	<p>H312 Harmful in contact with skin</p> <p>H314 Causes severe skin burns and eye damage</p> <p>H317 May cause an allergic skin reaction</p> <p>H412 Harmful to aquatic life with long lasting effects</p>
<b>Precautionary statement(s)</b>	
<b>Prevention</b>	<p>P280 Wear protective gloves/protective clothing/eye protection/face protection.</p> <p>P260 Do not breathe dust/fume/gas/mist/vapours/spray.</p> <p>P264 Wash ... thoroughly after handling.</p> <p>P261 Avoid breathing dust/fume/gas/mist/vapours/spray.</p> <p>P272 Contaminated work clothing should not be allowed out of the workplace.</p> <p>P273 Avoid release to the environment.</p>
<b>Response</b>	<p>P302+P352 IF ON SKIN: Wash with plenty of water/...</p> <p>P312 Call a POISON CENTER/doctor/...if you feel unwell.</p> <p>P321 Specific treatment (see ... on this label).</p> <p>P362+P364 Take off contaminated clothing and wash it before reuse.</p> <p>P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.</p> <p>P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].</p> <p>P363 Wash contaminated clothing before reuse.</p> <p>P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.</p> <p>P310 Immediately call a POISON CENTER/doctor/...</p> <p>P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p> <p>P333+P313 If skin irritation or rash occurs: Get medical advice/attention.</p>
<b>Storage</b>	<p>P405 Store locked up.</p>
<b>Disposal</b>	<p>P501 Dispose of contents/container to ...</p>

### 2.3 Other hazards which do not result in classification

none

### 3.Composition/information on ingredients

#### 3.1Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
2, 2, 2-tetramine	2, 2, 2-tetramine	112-24-3	none	100%

### 4.First-aid measures

#### 4.1Description of necessary first-aid measures

##### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

##### If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

##### In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

##### In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

##### If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

#### 4.2Most important symptoms/effects, acute and delayed

no data available

#### 4.3Indication of immediate medical attention and special treatment needed, if necessary

no data available

### 5.Fire-fighting measures

#### 5.1Extinguishing media

##### Suitable extinguishing media

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

#### 5.2Specific hazards arising from the chemical

no data available

#### 5.3Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

### 6.Accidental release measures

#### 6.1Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

## **6.2Environmental precautions**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

## **6.3Methods and materials for containment and cleaning up**

Pick up and arrange disposal. Sweep up and shovel. Keep in suitable, closed containers for disposal.

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## **7.Handling and storage**

### **7.1Precautions for safe handling**

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Avoid exposure - obtain special instructions before use. Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.

### **7.2Conditions for safe storage, including any incompatibilities**

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

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## **8.Exposure controls/personal protection**

### **8.1Control parameters**

#### **Occupational Exposure limit values**

no data available

#### **Biological limit values**

no data available

### **8.2Appropriate engineering controls**

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

### **8.3Individual protection measures, such as personal protective equipment (PPE)**

#### **Eye/face protection**

Safety glasses with side-shields conforming to EN166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

#### **Skin protection**

Wear impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique(without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. 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**

Wear dust mask when handling large quantities.

#### **Thermal hazards**

no data available

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## **9.Physical and chemical properties**

Physical state	colourless to light yellow or amber viscous liquid
Colour	no data available
Odour	no data available
Melting point/ freezing point	12°C
Boiling point or initial boiling point and boiling range	266–267° C(lit.)
Flammability	no data available
Lower and upper explosion limit / flammability limit	no data available
Flash point	129° C
Auto-ignition temperature	no data available
Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	no data available
Solubility	In water:SOLUBLE
Partition coefficient n-octanol/water (log value)	no data available
Vapour pressure	<0.01 mm Hg ( 20 ° C)

Density and/or relative density	0.982g/mL at 25° C (lit.)
Relative vapour density	~5 (vs air)
Particle characteristics	no data available

## 10. Stability and reactivity

### 10.1 Reactivity

no data available

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

no data available

### 10.4 Conditions to avoid

no data available

### 10.5 Incompatible materials

no data available

### 10.6 Hazardous decomposition products

no data available

## 11. Toxicological information

### Acute toxicity

- Oral: no data available
- Inhalation: no data available
- Dermal: no data available

### 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

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## **12.Ecological information**

### **12.1Toxicity**

- Toxicity to fish: no data available
- Toxicity to daphnia and other aquatic invertebrates: no data available
- Toxicity to algae: no data available
- Toxicity to microorganisms: no data available

### **12.2Persistence and degradability**

no data available

### **12.3Bioaccumulative potential**

no data available

### **12.4Mobility in soil**

no data available

### **12.5Other adverse effects**

no data available

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## **13.Disposal considerations**

### **13.1Disposal 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.

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## **14.Transport information**

### **14.1UN Number**

ADR/RID: UN2259	IMDG: UN2259	IATA: UN2259
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**14.2UN Proper Shipping Name**

ADR/RID: TRIETHYLENETETRAMINE
IMDG: TRIETHYLENETETRAMINE
IATA: TRIETHYLENETETRAMINE

**14.3Transport hazard class(es)**

ADR/RID: 8	IMDG: 8	IATA: 8
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**14.4Packing group, if applicable**

ADR/RID: II	IMDG: II	IATA: II
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**14.5Environmental hazards**

ADR/RID: no	IMDG: no	IATA: no
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**14.6Special precautions for user**

no data available

**14.7Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

no data available

**15.Regulatory information**

**15.1Safety, health and environmental regulations specific for the product in question**

Chemical name	Common names and synonyms	CAS number	EC number
2, 2, 2-tetramine	2, 2, 2-tetramine	112-24-3	none
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	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.

## 16. Other information

### Information on revision

Creation Date	Aug 12, 2017
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### Abbreviations and acronyms

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

### References

- IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>
- HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>
- IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>
- eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: [http://www.echemportal.org/echemportal/index?pageID=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en)
- CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>
- ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>
- ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>
- Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>

- ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

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*Disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. We as supplier shall not be held liable for any damage resulting from handling or from contact with the above product.*