

# SAFETY DATA SHEET



Revision date: 08-Jun-2022

Revision Number 1

## 1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

### Product identifier

**Product Name** TRIETHYLENETETRAMINE SOLUTION

**Product Code(s)** 000000054258

### Other means of identification

**UN number** 2259

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

**Recommended use** Mining chemical.

**Uses advised against** No information available.

### Supplier

Ixom Operations Pty Ltd  
ABN: 51 600 546 512  
Level 8, 1 Nicholson Street  
Melbourne 3000  
Australia

Telephone Number: +61 3 9906 3000

### Emergency telephone number

Emergency telephone number **1 800 033 111 (ALL HOURS)**

Please ensure you refer to the limitations of this Safety Data Sheet as set out in the "Other Information" section at the end of this Data Sheet.

## 2. HAZARDS IDENTIFICATION

### GHS Classification

Classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG).

Classified as a hazardous chemical in accordance with the criteria of Safe Work Australia - Globally Harmonized System (GHS).

<b>Acute toxicity - Dermal</b>	Category 4
<b>Skin corrosion/irritation</b>	Category 1 Sub-category A
<b>Serious eye damage/eye irritation</b>	Category 1
<b>Skin sensitization</b>	Category 1
<b>Reproductive toxicity</b>	Category 1B
<b>Specific target organ toxicity (single exposure)</b>	Category 3

### **SIGNAL WORD**

Danger

**Label elements**

Corrosion  
Health hazard  
Exclamation mark

**Hazard statements**

H312 - Harmful in contact with skin  
H314 - Causes severe skin burns and eye damage  
H317 - May cause an allergic skin reaction  
H335 - May cause respiratory irritation  
H360 - May damage fertility or the unborn child

The following health/environmental hazard categories fall outside the scope of the Workplace Health and Safety Regulations:  
H412 - Harmful to aquatic life with long lasting effects

**Precautionary Statements - Prevention**

Obtain special instructions before use  
Do not handle until all safety precautions have been read and understood  
Do not breathe fume, gas, mist, vapours, spray  
Wash face, hands and any exposed skin thoroughly after handling  
Wear protective gloves / protective clothing / eye protection / face protection  
Use personal protective equipment as required  
Avoid release to the environment

**Precautionary Statements - Response**

If exposed or concerned: Get medical advice/attention  
Specific treatment (see First aid on this SDS)  
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/physician  
IF ON SKIN: Wash with plenty of soap and water  
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower  
If skin irritation or rash occurs: Get medical advice/attention  
Wash contaminated clothing before reuse  
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing  
Call a POISON CENTER or doctor/physician if you feel unwell  
IF SWALLOWED: Rinse mouth. DO NOT induce vomiting  
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell

**Precautionary Statements - Storage**

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

**Precautionary Statements - Disposal**

Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

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

Harmful to aquatic life with long lasting effects

**Poisons Schedule (SUSMP)**

None allocated

**3. COMPOSITION/INFORMATION ON INGREDIENTS****Mixture**

Chemical name	CAS No.	Weight-%
Triethylenetetramine	112-24-3	30-60

Non hazardous component(s)	-	to 100
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#### 4. FIRST AID MEASURES

##### Description of first aid measures

<b>General advice</b>	For advice, contact a Poisons Information Centre (e.g. phone Australia 13 11 26; New Zealand 0800 764 766) or a doctor.
<b>Inhalation</b>	Remove to fresh air. If breathing is difficult, (trained personnel should) give oxygen. If breathing has stopped, give artificial respiration. Get medical attention immediately.
<b>Eye contact</b>	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.
<b>Skin contact</b>	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a POISON CENTER or doctor/physician.
<b>Ingestion</b>	Rinse mouth thoroughly with water. Do NOT induce vomiting. Drink 1 or 2 glasses of water. Get immediate medical advice/attention.

##### Most important symptoms and effects, both acute and delayed

<b>Symptoms</b>	Irritation/Corrosion. May cause redness and tearing of the eyes. May cause allergic skin reaction. Redness. Rashes. Hives.
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##### Indication of any immediate medical attention and special treatment needed

<b>Note to physicians</b>	Treat symptomatically. Can cause corneal burns. May cause sensitization by skin contact.
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#### 5. FIRE FIGHTING MEASURES

##### Suitable Extinguishing Media

<b>Suitable Extinguishing Media</b>	Dry chemical, CO2, water spray or regular foam.
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<b>Unsuitable extinguishing media</b>	No information available.
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##### Specific hazards arising from the chemical

<b>Specific hazards arising from the chemical</b>	Corrosive hazard. Wear protective gloves/clothing and eye/face protection. Environmentally hazardous.
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##### Special protective actions for fire-fighters

<b>Special protective equipment for fire-fighters</b>	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.
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<b>Hazchem code</b>	2X
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#### 6. ACCIDENTAL RELEASE MEASURES

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

<b>Personal precautions</b>	Avoid contact with skin, eyes, and clothing. Do not breathe vapor or mist. Ensure adequate ventilation. Evacuate personnel to safe areas. Stop leak if you can do it without risk. Use
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personal protective equipment as required. Wash thoroughly after handling.

**For emergency responders** Use personal protection recommended in Section 8.

#### **Environmental precautions**

**Environmental precautions** Local authorities should be advised if significant spillages cannot be contained.

#### **Methods and material for containment and cleaning up**

**Methods for containment** Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up** Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal.

## **7. HANDLING AND STORAGE**

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

**Advice on safe handling** Avoid contact with skin, eyes, and clothing. Do not breathe vapor or mist. Do not eat, drink or smoke when using this product. Use personal protection equipment. Wash thoroughly after handling. Not to be used by pregnant workers and workers who have recently given birth or who are breastfeeding.

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

**Storage Conditions** Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from direct sunlight. Keep container closed when not in use.

**Packaging materials** Do not store in copper or copper alloy containers.

**Incompatible materials** Acids. Copper.

**Poisons Schedule (SUSMP)** None allocated

## **8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

#### **Control parameters**

**Exposure Limits** No value assigned for this specific material by Safe Work Australia.

#### **Appropriate engineering controls**

**Engineering controls** Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas.

#### **Individual protection measures, such as personal protective equipment**

The selection of PPE is dependent on a detailed risk assessment. The risk assessment should consider the work situation, the physical form of the chemical, the handling methods, and environmental factors.

OVERALLS, CHEMICAL GOGGLES, FACE SHIELD, GLOVES (Long), APRON, RUBBER BOOTS.



<b>Eye/face protection</b>	Tight sealing safety goggles. If splashes are likely to occur: Face protection shield.
<b>Skin and body protection</b>	Rubber boots. Apron. Overalls.
<b>Hand protection</b>	Impervious gloves.
<b>Respiratory protection</b>	If determined by a risk assessment an inhalation risk exists, wear a suitable mist respirator meeting the requirements of AS/NZS 1715 and AS/NZS 1716.
<b>Environmental exposure controls</b>	No information available.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

<b>Physical state</b>	Liquid
<b>Appearance</b>	Clear
<b>Color</b>	Pale Yellow
<b>Odor</b>	Characteristic
<b>Odor threshold</b>	No information available.

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
<b>pH</b>	No data available	None known
<b>pH (as aqueous solution)</b>	No data available	None known
<b>Melting point / freezing point</b>	No data available	None known
<b>Boiling point / boiling range</b>	No data available	None known
<b>Flash point</b>	No data available	None known
<b>Evaporation rate</b>	No data available	None known
<b>Flammability (solid, gas)</b>	No data available	None known
<b>Flammability Limit in Air</b>		None known
<b>Upper flammability or explosive limits</b>	No data available	
<b>Lower flammability or explosive limits</b>	No data available	
<b>Vapor pressure</b>	No data available	None known
<b>Vapor density</b>	No data available	None known
<b>Relative density</b>	No data available	None known
<b>Water solubility</b>	Miscible in water	None known
<b>Solubility(ies)</b>	No data available	None known
<b>Partition coefficient</b>	No data available	None known
<b>Autoignition temperature</b>	No data available	None known
<b>Decomposition temperature</b>	No data available	None known
<b>Kinematic viscosity</b>	No data available	None known
<b>Dynamic viscosity</b>	No data available	None known

### Other information

## 10. STABILITY AND REACTIVITY

### Reactivity

**Reactivity** No information available.

**Chemical stability**

**Stability** Stable under normal conditions.

**Explosion data**

**Sensitivity to mechanical impact** None.

**Sensitivity to static discharge** None.

**Possibility of hazardous reactions**

**Possibility of hazardous reactions** None under normal processing.

**Conditions to avoid**

**Conditions to avoid** Direct sunlight.

**Incompatible materials**

**Incompatible materials** Acids. Copper.

**Hazardous decomposition products**

**Hazardous decomposition products** Carbon oxides. Nitrogen oxides.

## 11. TOXICOLOGICAL INFORMATION

**Acute toxicity**

**Information on likely routes of exposure**

**Product Information** No adverse health effects expected if the chemical is handled in accordance with this Safety Data Sheet and the chemical label. Symptoms or effects that may arise if the chemical is mishandled and overexposure occurs are:

**Inhalation** May cause irritation of respiratory tract.

**Eye contact** Causes serious eye damage. May cause irreversible damage to eyes.

**Skin contact** Contact causes severe skin irritation and possible burns. May cause sensitization by skin contact.

**Ingestion** Can burn mouth, throat, and stomach.

**Symptoms** Irritation/Corrosion. May cause redness and tearing of the eyes. May cause allergic skin reaction. Redness. Rashes. Hives.

**Numerical measures of toxicity - Product Information**

No information available.

**Component Information**

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Triethylenetetramine	= 1716 mg/kg ( Rat )	-	-

See section 16 for terms and abbreviations

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

<b>Skin corrosion/irritation</b>	Causes burns. Classification is based on mixture calculation methods based on component data.
<b>Serious eye damage/eye irritation</b>	Causes serious eye damage. Classification is based on mixture calculation methods based on component data.
<b>Respiratory or skin sensitization</b>	A skin sensitizer. (guinea pig). Classification is based on mixture calculation methods based on component data.
<b>Germ cell mutagenicity</b>	No information available.
<b>Carcinogenicity</b>	No information available.
<b>Reproductive toxicity</b>	May damage fertility or the unborn child. Classification is based on mixture calculation methods based on component data.
<b>STOT - single exposure</b>	May cause respiratory irritation. Classification is based on mixture calculation methods based on component data.
<b>STOT - repeated exposure</b>	No information available.
<b>Aspiration hazard</b>	No information available.

**12. ECOLOGICAL INFORMATION****Ecotoxicity**

**Ecotoxicity** Keep out of waterways. Harmful to aquatic life with long lasting effects.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Triethylenetetramine	EC50: =2.5mg/L (72h, Desmodesmus subspicatus) EC50: =20mg/L (72h, Pseudokirchneriella subcapitata) EC50: =3.7mg/L (96h, Pseudokirchneriella subcapitata)	LC50: =570mg/L (96h, Poecilia reticulata) LC50: =495mg/L (96h, Pimephales promelas)	-	EC50: =31.1mg/L (48h, Daphnia magna)

**Persistence and degradability**

**Persistence and degradability** No information available.

**Bioaccumulative potential**

**Bioaccumulation** No information available.

**Component Information**

Chemical name	Partition coefficient
Triethylenetetramine	-1.4

**Mobility**

**Mobility in soil** No information available.

**Other adverse effects****Endocrine Disruptor Information**

Chemical name	EU - Endocrine Disruptors Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Endocrine disrupting potential
Triethylenetetramine	Group III Chemical	-	-

**13. DISPOSAL CONSIDERATIONS****Waste treatment methods**

**Waste from residues/unused products** Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

**Contaminated packaging** Empty containers should be taken to an approved waste handling site for recycling or disposal.

**14. TRANSPORT INFORMATION****ADG**

Classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for Transport by Road and Rail; DANGEROUS GOODS.

**UN number** 2259  
**Proper shipping name** TRIETHYLENETETRAMINE SOLUTION  
**Hazard class** 8  
**Packing group** II  
**Hazchem code** 2X

**IATA**

Classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air; DANGEROUS GOODS.

**UN number** 2259  
**UN proper shipping name** TRIETHYLENETETRAMINE SOLUTION  
**Transport hazard class(es)** 8  
**Packing group** II

**IMDG**

Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea; DANGEROUS GOODS.

**UN number** 2259  
**UN proper shipping name** TRIETHYLENETETRAMINE SOLUTION  
**Transport hazard class(es)** 8  
**Packing group** II  
**Marine pollutant** No

**15. REGULATORY INFORMATION****Safety, health and environmental regulations/legislation specific for the substance or mixture****National regulations****Australia**

Classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail



(ADG).

Classified as a hazardous chemical in accordance with the criteria of Safe Work Australia - Globally Harmonized System (GHS).

See section 8 for national exposure control parameters

**Poisons Schedule (SUSMP)** None allocated

#### International Inventories

**AIIC** All the constituents of this material are listed on the Australian Inventory of Industrial Chemicals.

#### **Legend:**

**AIIC - Australian Inventory of Industrial Chemicals**

#### International Regulations

**The Montreal Protocol on Substances that Deplete the Ozone Layer** Not applicable

**The Stockholm Convention on Persistent Organic Pollutants** Not applicable

**The Rotterdam Convention** Not applicable

## **16. OTHER INFORMATION**

Ixom Operations Pty Ltd Safety Data Sheet 07/ 2021

**Reason(s) For Issue:** First Issue Primary SDS

**Issuing Date:** 08-Jun-2022

This Safety Data Sheet has been prepared by Ixom Operations Pty Ltd (Toxicology and SDS Services).

#### **Revision Note:**

The symbol (\*) in the margin of this SDS indicates that this line has been revised.

#### **Key or legend to abbreviations and acronyms used in the safety data sheet**

##### Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
C	Carcinogen		

#### **Key literature references and sources for data used to compile the SDS**

EPA (Environmental Protection Agency)  
 Acute Exposure Guideline Level(s) (AEGL(s))  
 U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act  
 U.S. Environmental Protection Agency High Production Volume Chemicals  
 Food Research Journal  
 Hazardous Substance Database  
 International Uniform Chemical Information Database (IUCLID)  
 Japan GHS Classification  
 Australian Industrial Chemicals Introduction Scheme (AICIS)  
 NIOSH (National Institute for Occupational Safety and Health)

National Library of Medicine's ChemID Plus (NLM CIP)  
National Library of Medicine's PubMed database (NLM PUBMED)  
National Toxicology Program (NTP)  
New Zealand's Chemical Classification and Information Database (CCID)  
Organization for Economic Co-operation and Development Environment, Health, and Safety Publications  
Organization for Economic Co-operation and Development High Production Volume Chemicals Program  
Organization for Economic Co-operation and Development Screening Information Data Set  
RTECS (Registry of Toxic Effects of Chemical Substances)  
World Health Organization

**Disclaimer**

**The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text This SDS summarises to our best knowledge at the date of issue, the chemical health and safety hazards of the material and general guidance on how to safely handle the material in the workplace. Since Ixom Operations Pty Ltd cannot anticipate or control the conditions under which the product may be used, each user must, prior to usage, assess and control the risks arising from its use of the material.**

If clarification or further information is needed, the user should contact their Ixom representative or Ixom Operations Pty Ltd at the contact details on page 1.

Ixom Operations Pty Ltd's responsibility for the material as sold is subject to the terms and conditions of sale, a copy of which is available upon request.

**End of Safety Data Sheet**