

SAFETY DATA SHEET



Revision date: 13-May-2022

Revision Number 1

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product identifier

Product Name DIETHYL THIOUREA

Product Code(s) 000000054239

Other means of identification

CAS No. 105-55-5

Synonyms 1,3-Diethyl-2-thiourea; Thiourea, N,N'-diethyl-; Diethylthiourea; DETU.

Recommended use of the chemical and restrictions on use

Recommended use Corrosion inhibitor.

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

Not 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).

Acute toxicity - Oral	Category 4
Acute toxicity - Dermal	Category 4
Serious eye damage/eye irritation	Category 1
Skin sensitization	Category 1
Specific target organ toxicity (repeated exposure)	Category 1

SIGNAL WORD

Danger

Label elements

Health hazard
Corrosion
Exclamation mark

**Hazard statements**

H302 - Harmful if swallowed
H312 - Harmful in contact with skin
H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage
H372 - Causes damage to organs through prolonged or repeated exposure

Precautionary Statements - Prevention

Do not breathe dusts or mists
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Contaminated work clothing should not be allowed out of the workplace
Wear protective gloves / protective clothing / eye protection / face protection
Avoid release to the environment

Precautionary Statements - Response

Specific treatment (see First aid on this SDS)
Get medical advice/attention if you feel unwell
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 skin irritation or rash occurs: Get medical advice/attention
Wash contaminated clothing before reuse
Call a POISON CENTER or doctor/physician if you feel unwell
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: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth

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) 6

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

Chemical name	CAS No.	Weight-%
1,3-Diethyl-2-thiourea	105-55-5	98-100

4. FIRST AID MEASURES

Description of first aid measures

General advice	For advice, contact a Poisons Information Centre (e.g. phone Australia 13 11 26; New Zealand 0800 764 766) or a doctor. Show this safety data sheet to the doctor in attendance.
Inhalation	Remove to fresh air. If breathing is difficult, (trained personnel should) give oxygen. Get medical attention immediately if symptoms occur.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Remove contact lenses, if present and easy to do. Continue rinsing. Do not rub affected area. Immediate medical attention is required.
Skin contact	Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.
Ingestion	Clean mouth with water and drink afterwards plenty of water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get immediate medical advice/attention.
Self-protection of the first aider	Do not breathe dust. Avoid contact with skin, eyes, and clothing. Use personal protective equipment as required.

Most important symptoms and effects, both acute and delayed

Symptoms	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

Note to physicians	Treat symptomatically. Can cause corneal burns. May cause sensitization by skin contact.
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5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media

Suitable Extinguishing Media	Water spray. Foam. Dry powder.
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Unsuitable extinguishing media	All other extinguishing agents.
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Specific hazards arising from the chemical

Specific hazards arising from the chemical	Non-combustible.
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Special protective actions for fire-fighters

Special protective equipment for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.
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6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions	Avoid contact with skin, eyes, and clothing. Do not breathe dust. Ensure adequate ventilation. Use personal protective equipment as required.
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Other information	Refer to protective measures listed in Sections 7 and 8.
For emergency responders	Use personal protection recommended in Section 8.
<u>Environmental precautions</u>	
Environmental precautions	Prevent further leakage or spillage if safe to do so.
<u>Methods and material for containment and cleaning up</u>	
Methods for containment	Prevent further leakage or spillage if safe to do so.
Methods for cleaning up	Use appropriate personal protective equipment (PPE). Carefully shovel or sweep up spilled material and place in suitable container. Avoid generating dust.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling	Handle in accordance with good industrial hygiene and safety practice. Do not breathe dust. Avoid contact with skin, eyes, and clothing. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. Use personal protection equipment. Wash thoroughly after handling.
General hygiene considerations	Wear suitable gloves and eye/face protection. Avoid contact with skin, eyes, and clothing. Do not breathe dust. Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product.

Conditions for safe storage, including any incompatibilities

Storage Conditions	Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from light. Protect from moisture. Store away from foodstuffs. Keep container closed when not in use. This material is a Scheduled Poison and must be stored, maintained and used in accordance with the relevant regulations.
Incompatible materials	Strong acids. Oxidizing agents.
Poisons Schedule (SUSMP)	6

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Limits	No value assigned for this specific material by Safe Work Australia. However, Workplace Exposure Standard(s) for particulates:
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Dusts not otherwise classified: 8hr TWA = 10 mg/m³

As published by Safe Work Australia Workplace Exposure Standards for Airborne Contaminants.

TWA - The time-weighted average airborne concentration of a particular substance when calculated over an eight-hour working day, for a five-day working week.

These Workplace Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric

contamination should be kept to as low a level as is workable. These workplace exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.

Appropriate engineering controls

Engineering controls

Eyewash stations. Apply technical measures to comply with the occupational exposure limits.

If in the handling and application of this material, safe exposure levels could be exceeded, the use of engineering controls such as local exhaust ventilation must be considered and the results documented. If achieving safe exposure levels does not require engineering controls, then a detailed and documented risk assessment using the relevant Personal Protective Equipment (PPE) (refer to PPE section below) as a basis must be carried out to determine the minimum PPE requirements.

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, SAFETY SHOES, CHEMICAL GOGGLES, GLOVES, DUST MASK.



Eye/face protection

Tight sealing safety goggles.

Skin and body protection

Wear suitable protective clothing. Boots. Overalls.

Hand protection

Impervious gloves.

Respiratory protection

If determined by a risk assessment an inhalation risk exists, wear a dust mask/respirator meeting the requirements of AS/NZS 1715 and AS/NZS 1716.

Environmental exposure controls

No information available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Solid
Appearance	Crystalline
Color	White
Odor	Faint
Odor threshold	No information available.

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	No data available	None known
pH (as aqueous solution)	No data available	None known
Melting point / freezing point	76-80°C	None known
Boiling point / boiling range	215°C	None known
Flash point	Not applicable	None known
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		None known
Upper flammability or explosive	No data available	

limits		
Lower flammability or explosive limits	No data available	
Vapor pressure	0.65 kPa @25°C	None known
Vapor density	No data available	None known
Relative density	1.1	
Water solubility	42 g/L @ 25 °C	None known
Solubility(ies)	No data available	None known
Partition coefficient	log Kow = 0.57 @20°C	None known
Autoignition temperature	No data available	None known
Decomposition temperature	ca. 243°C	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	

Other information**10. STABILITY AND REACTIVITY**Reactivity

Reactivity No information available.

Chemical stability

Stability Stable under normal conditions. Unstable on exposure to moisture.

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 Heat. Moisture.

Incompatible materials

Incompatible materials Strong acids. Oxidizing agents.

Hazardous decomposition products

Hazardous decomposition products Carbon oxides. Nitrogen oxides. Oxides of sulfur.

11. TOXICOLOGICAL INFORMATIONAcute toxicityInformation 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.

Eye contact	Causes serious eye damage.
Skin contact	May cause irritation. May cause sensitization by skin contact.
Ingestion	Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.
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**Numerical measures of toxicity - Component Information**

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
1,3-Diethyl-2-thiourea	= 316 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

Skin corrosion/irritation	Not classified.
Serious eye damage/eye irritation	Causes serious eye damage.
Respiratory or skin sensitization	A skin sensitizer.
Germ cell mutagenicity	Not classified.
Carcinogenicity	Refer to 'Chronic effects' section below. (IARC - International Agency for Research on Cancer).
Reproductive toxicity	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	Causes damage to organs through prolonged or repeated exposure.
Aspiration hazard	Not applicable.
Chronic effects:	1,3-Diethyl-2-thiourea is an IARC Group 3 carcinogen (not classifiable as to human carcinogenicity).

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
1,3-Diethyl-2-thiourea	-	LC50: =910mg/L (96h, Danio rerio)	-	EC50: =56mg/L (48h, Daphnia magna)

Persistence and degradability

Persistence and degradability Not readily biodegradable.

Bioaccumulative potential

Bioaccumulation No information available.

Mobility

Mobility in soil No information available.

Other adverse effects**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 Dispose of contents/containers in accordance with local regulations.

14. TRANSPORT INFORMATION**ADG**

Not classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for transport by Road and Rail; NON-DANGEROUS GOODS.

IATA

Not classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air; NON-DANGEROUS GOODS.

IMDG

Not classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea; NON-DANGEROUS GOODS.

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

Not 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

Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP)

Classified as a scheduled poison according to the Standard for Uniform Scheduling of Medicines and Poisons (SUSMP)

Poisons Schedule (SUSMP) 6

International Inventories**AIIC**

This material is 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**

Supplier Safety Data Sheet 11/ 2019

Reason(s) For Issue: First Issue Primary SDS**Issuing Date:** 13-May-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

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