

DIETHYL THIOUREA ALPHA CHEMICALS PTY LTD

Chemwatch Hazard Alert Code: 2

Chemwatch: 35127

Version No: 5.1 Safety Data Sheet according to WHS Regulations (Hazardous Chemicals) Amendment 2020 and ADG requirements lssue Date: 20/06/2022 Print Date: 07/11/2022 S.GHS.AUS.EN

SECTION 1 Identification of the substance / mixture and of the company / undertaking

Product Identifier		
Product name	DIETHYL THIOUREA	
Chemical Name	1,3-diethylthiourea	
Synonyms	C2H5NHCSNHC2H5; C5-H12-N2-S; urea, 1,3-diethyl-2-thio-; diethyl thiourea; diethylthiourea; thiourea, N,N-diethyl; N,N-diethylthiocarbamide; N,N-diethylthiourea; 1,3-diethyl-2-thiourea; Pennzone E; Thiate H; DETU	
Chemical formula	C5-H12-N2-S	
Other means of identification	Not Available	
CAS number	105-55-5	

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses Inhibitor of corrosion in metal pickling solutions, accelerator, activator in elastomers.

Details of the manufacturer or supplier of the safety data sheet

Registered company name	ALPHA CHEMICALS PTY LTD
Address	4 ALLEN PLACE WETHERILL PARK NSW 2164 Australia
Telephone	61 (0)2 9982 4622
Fax	Not Available
Website	~
Email	shane@alphachem.com.au

Emergency telephone number

Association / Organisation	ALPHA CHEMICALS PTY LTD	CHEMWATCH EMERGENCY RESPONSE
Emergency telephone numbers	61 (0)418 237 771	+61 1800 951 288
Other emergency telephone numbers	Not Available	+61 3 9573 3188

Once connected and if the message is not in your preferred language then please dial 01

SECTION 2 Hazards identification

Classification of the substance or mixture

HAZARDOUS CHEMICAL. NON-DANGEROUS GOODS. According to the WHS Regulations and the ADG Code.

Chemwatch Hazard Ratings

	Min	Max	
Flammability	1	1	
Toxicity	2	1	0 = Minimum
Body Contact	1 📕	1	1 = Low
Reactivity	1	1	2 = Moderate
Chronic	2	1	3 = High 4 = Extreme

Poisons Schedule	S6
Classification [1]	Acute Toxicity (Oral) Category 4, Sensitisation (Skin) Category 1, Carcinogenicity Category 2
Legend:	1. Classified by Chernwatch; 2. Classification drawn from HCIS; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI

Hazard pictogram(s)	

Warning

Signal word

Hazard statement(s)

H302	Harmful if swallowed.
H317	May cause an allergic skin reaction.
H351	Suspected of causing cancer.

Precautionary statement(s) Prevention

•	• • •	
	P201	Obtain special instructions before use.
	P280	Wear protective gloves and protective clothing.
	P261	Avoid breathing dust/fumes.
	P264	Wash all exposed external body areas thoroughly after handling.
	P270	Do not eat, drink or smoke when using this product.
	P272	Contaminated work clothing should not be allowed out of the workplace.

Precautionary statement(s) Response

P308+P313	IF exposed or concerned: Get medical advice/ attention.
P302+P352	IF ON SKIN: Wash with plenty of water.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.
P301+P312	IF SWALLOWED: Call a POISON CENTER/doctor/physician/first aider if you feel unwell.
P330	Rinse mouth.

Precautionary statement(s) Storage

P405	Store locked up.

Precautionary statement(s) Disposal

P501 Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.

SECTION 3 Composition / information on ingredients

Substances

CAS No		%[weight]	Name
105-55-5		>99	Diethyl Thiourea
Legend:	1. Classified by Chem * EU IOELVs available	watch; 2. Classification drawn from HCIS; 3. Classification drav	vn from Regulation (EU) No 1272/2008 - Annex VI; 4. Classification drawn from C&L

Mixtures

See section above for composition of Substances

SECTION 4 First aid measures

Description of first aid measures		
Eye Contact	 If this product comes in contact with the eyes: Wash out immediately with fresh running water. Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. Seek medical attention without delay; if pain persists or recurs seek medical attention. Removal of contact lenses after an eye injury should only be undertaken by skilled personnel. 	
Skin Contact	 If skin contact occurs: Immediately remove all contaminated clothing, including footwear. Flush skin and hair with running water (and soap if available). Seek medical attention in event of irritation. 	
Inhalation	 If fumes, aerosols or combustion products are inhaled remove from contaminated area. Other measures are usually unnecessary. 	
Ingestion	 IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY. For advice, contact a Poisons Information Centre or a doctor. Urgent hospital treatment is likely to be needed. In the mean time, qualified first-aid personnel should treat the patient following observation and employing supportive measures as indicated by the patient's condition. If the services of a medical officer or medical doctor are readily available, the patient should be placed in his/her care and a copy of the SDS should be provided. Further action will be the responsibility of the medical specialist. If medical attention is not available on the worksite or surroundings send the patient to a hospital together with a copy of the SDS. 	

Where medical attention is not immediately available or where the patient is more than 15 minutes from a hospital or unless instructed otherwise:
 INDUCE vomiting with fingers down the back of the throat, ONLY IF CONSCIOUS. Lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
 NOTE: Wear a protective glove when inducing vomiting by mechanical means.

Indication of any immediate medical attention and special treatment needed

As in all cases of suspected poisoning, follow the ABCDEs of emergency medicine (airway, breathing, circulation, disability, exposure), then the ABCDEs of toxicology (antidotes, basics, change absorption, change distribution, change elimination).

For poisons (where specific treatment regime is absent):

BASIC TREATMENT

- Establish a patent airway with suction where necessary.
- Watch for signs of respiratory insufficiency and assist ventilation as necessary.
- Administer oxygen by non-rebreather mask at 10 to 15 L/min.
- Monitor and treat, where necessary, for pulmonary oedema.
- Monitor and treat, where necessary, for shock.
- Anticipate seizures.
- DO NOT use emetics. Where ingestion is suspected rinse mouth and give up to 200 ml water (5 ml/kg recommended) for dilution where patient is able to swallow, has a strong gag reflex and does not drool.

ADVANCED TREATMENT

- Consider orotracheal or nasotracheal intubation for airway control in unconscious patient or where respiratory arrest has occurred.
- Positive-pressure ventilation using a bag-valve mask might be of use.
- Monitor and treat, where necessary, for arrhythmias.
- Start an IV D5W TKO. If signs of hypovolaemia are present use lactated Ringers solution. Fluid overload might create complications.
- Drug therapy should be considered for pulmonary oedema.
- + Hypotension with signs of hypovolaemia requires the cautious administration of fluids. Fluid overload might create complications.
- Treat seizures with diazepam.
- Proparacaine hydrochloride should be used to assist eye irrigation.
- BRONSTEIN, A.C. and CURRANCE, P.L.

EMERGENCY CARE FOR HAZARDOUS MATERIALS EXPOSURE: 2nd Ed. 1994 Treat symptomatically.

SECTION 5 Firefighting measures

Extinguishing media

- Water spray or fog.
- Foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.

Special hazards arising from the substrate or mixture

Fire Incompatibility	Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result
Advice for firefighters	
Fire Fighting	 Alert Fire Brigade and tell them location and nature of hazard. Wear breathing apparatus plus protective gloves. Prevent, by any means available, spillage from entering drains or water courses. Use water delivered as a fine spray to control fire and cool adjacent area. DO NOT approach containers suspected to be hot. Cool fire exposed containers with water spray from a protected location. If safe to do so, remove containers from path of fire. Equipment should be thoroughly decontaminated after use.
Fire/Explosion Hazard	 Decomposes on heating and produces toxic fumes of ethylamine and ethyl isothiocyanate. Combustible solid which burns but propagates flame with difficulty; it is estimated that most organic dusts are combustible (circa 70%) - according to the circumstances under which the combustion process occurs, such materials may cause fires and / or dust explosions. Organic powders when finely divided over a range of concentrations regardless of particulate size or shape and suspended in air or some other oxidizing medium may form explosive dust-air mixtures and result in a fire or dust explosion (including secondary explosions). Avoid generating dust, particularly clouds of dust in a confined or unventilated space as dusts may form an explosive mixture with air, and any source of ignition, i.e. flame or spark, will cause fire or explosion. Dust clouds generated by the fine grinding of the solid are a particular hazard; accumulations of fine dust (420 micron or less) may burn rapidly and fiercely if ignited - particles exceeding this limit will generally not form flammable dust clouds; once initiated, however, larger particles up to 1400 microns diameter will contribute to the propagation of an explosion. In the same way as gases and vapours, dusts in the form of a cloud are only ignitable over a range of concentrations; in principle, the concepts of lower explosive limit (LEL) and upper explosive limit (UEL) are applicable to dust clouds but only the LEL is often called the "Minimum Explosible Concentration", MEC). When processed with flammable liquids/vapors/mists,ignitable (hybrid) mixtures may be formed with combustible dust. Ignitable mixtures will be lower than the pure dust in air mixture. The Lower Explosive Limit (LEL) of the vapour/dust mixture will be lower than the individual LELs for the vapors/mists or dusts. Combustion products include: carbon monoxide (CO) carbon monoxide (CO) carbon dioxide (CO2) nitrogen oxides (NOX)

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	other pyrolysis products typical of burning organic material. May emit poisonous fumes. May emit corrosive fumes.
HAZCHEM	Not Applicable

SECTION 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

Minor Spills	 Clean up waste regularly and abnormal spills immediately. Avoid breathing dust and contact with skin and eyes. Wear protective clothing, gloves, safety glasses and dust respirator. Use dry clean up procedures and avoid generating dust. Vacuum up or sweep up. NOTE: Vacuum cleaner must be fitted with an exhaust micro filter (HEPA type) (consider explosion-proof machines designed to be grounded during storage and use). Dampen with water to prevent dusting before sweeping. Place in suitable containers for disposal.
Major Spills	 Moderate hazard. CAUTION: Advise personnel in area. Alert Emergency Services and tell them location and nature of hazard. Control personal contact by wearing protective clothing. Prevent, by any means available, spillage from entering drains or water courses. Recover product wherever possible. IF DRY: Use dry clean up procedures and avoid generating dust. Collect residues and place in sealed plastic bags or other containers for disposal.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 Handling and storage

..... ...: _

Precautions for safe handling	
Safe handling	 Avoid all personal contact, including inhalation. Wear protective clothing when risk of exposure occurs. Use in a well-ventilated area. Prevent concentration in hollows and sumps. DO NOT enter confined spaces until atmosphere has been checked. DO NOT allow material to contact humans, exposed food or food utensils. Avoid contact with incompatible materials. When handling, DO NOT eat, drink or smoke. Organic powders when finely divided over a range of concentrations regardless of particulate size or shape and suspended in air or some other oxidizing medium may form explosive dust-air mixtures and result in a fire or dust explosion (including secondary explosions) Minimise airborne dust and eliminate all ignition sources. Keep away from heat, hot surfaces, sparks, and flame. Establish good housekeeping practices. Remove dust accumulations on a regular basis by vacuuming or gentle sweeping to avoid creating dust clouds. Use continuous suction at points of dust generation to capture and minimise the accumulation of dusts. Particular attention should be given to overhead and hidden horizontal surfaces to minimise the probability of a "secondary" explosion. According to NFPA Standard 654, dust layers 1/32 in (0.8 mm) thick can be sufficient to warrant immediate cleaning of the area. Do not use air hoses for cleaning.
Other information	 Store in original containers. Keep containers securely sealed. Store in a cool, dry, well-ventilated area. Store away from incompatible materials and foodstuff containers. Protect containers against physical damage and check regularly for leaks. Observe manufacturer's storage and handling recommendations contained within this SDS.

Conditions for safe storage, including any incompatibilities

J	
Suitable container	 Polyethylene or polypropylene container. Check all containers are clearly labelled and free from leaks.
Storage incompatibility	Avoid reaction with oxidising agents

SECTION 8 Exposure controls / personal protection

Control parameters

Occupational Exposure Limits (O	EL)			
INGREDIENT DATA				
Not Available				
Emergency Limits				
Ingredient	TEEL-1	TEEL-2		TEEL-3
Diethyl Thiourea	0.95 mg/m3	10 mg/m3		63 mg/m3
Ingredient	Original IDLH		Revised IDLH	

Ingredient

Original IDLH

DIETHYL THIOUREA

Revised IDLH

-		
Diethyl Thiourea	Not Available	Not Available
Occupational Exposure Banding		
Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
Diethyl Thiourea	E	≤ 0.01 mg/m³
Notes:	Occupational exposure banding is a process of assigning chemicals into adverse health outcomes associated with exposure. The output of this pro- range of exposure concentrations that are expected to protect worker hea	specific categories or bands based on a chemical's potency and the ocess is an occupational exposure band (OEB), which corresponds to a alth.
Exposure controls		
Appropriate engineering controls	Engineering controls are used to remove a hazard or place a barrier betw be highly effective in protecting workers and will typically be independent. The basic types of engineering controls are: Process controls which involve changing the way a job activity or process Enclosure and/or isolation of emission source which keeps a selected ha: "adds" and "removes" air in the work environment. Ventilation can remove ventilation system must match the particular process and chemical or cor Employers may need to use multiple types of controls to prevent employe Local exhaust ventilation is required where solids are handled as pow proportion will be powdered by mutual friction.	een the worker and the hazard. Well-designed engineering controls can of worker interactions to provide this high level of protection. is is done to reduce the risk. zard "physically" away from the worker and ventilation that strategically e or dilute an air contaminant if designed properly. The design of a traminant in use. se overexposure. vders or crystals; even when particulates are relatively large, a certain
Personal protection		3
Eye and face protection	 Safety glasses with side shields. Chemical goggles. Contact lenses may pose a special hazard; soft contact lenses may a the wearing of lenses or restrictions on use, should be created for ea and adsorption for the class of chemicals in use and an account of in their removal and suitable equipment should be readily available. In t remove contact lens as soon as practicable. Lens should be removec a clean environment only after workers have washed hands thorough 	absorb and concentrate irritants. A written policy document, describing ch workplace or task. This should include a review of lens absorption jury experience. Medical and first-aid personnel should be trained in he event of chemical exposure, begin eye irrigation immediately and d at the first signs of eye redness or irritation - lens should be removed in ily.
Skin protection	See Hand protection below	
Hands/feet protection	 NOTE: The material may produce skin sensitisation in predisposed individual equipment, to avoid all possible skin contact. Contaminated leather items, such as shoes, belts and watch-bands so The selection of suitable gloves does not only depend on the material, but manufacturer. Where the chemical is a preparation of several substances and has therefore to be checked prior to the application. The exact break through time for substances has to be obtained from the making a final choice. Personal hygiene is a key element of effective hand care. Gloves must or washed and dried thoroughly. Application of a non-perfumed moisturiser is Suitability and durability of glove type is dependent on usage. Experience indicates that the following polymers are suitable as glove maparticles are not present. polychloroprene. hitrile rubber. butyl rubber. fluorocaoutchouc. polyvinyl chloride. Gloves should be examined for wear and/ or degradation constantly. 	Is. Care must be taken, when removing gloves and other protective should be removed and destroyed. It also on further marks of quality which vary from manufacturer to s, the resistance of the glove material can not be calculated in advance manufacturer of the protective gloves and has to be observed when hly be worn on clean hands. After using gloves, hands should be is recommended. Atterials for protection against undissolved, dry solids, where abrasive
Body protection	See Other protection below	
Other protection	Overalls. P.V.C apron. Barrier cream. Skin cleansing cream.	

Respiratory protection

Type -P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Eye wash unit.

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	P1 Air-line*	-	PAPR-P1
up to 50 x ES	Air-line**	P2	PAPR-P2
up to 100 x ES	-	P3	-
		Air-line*	-
100+ x ES	-	Air-line**	PAPR-P3

* - Negative pressure demand ** - Continuous flow A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

· Respirators may be necessary when engineering and administrative controls do not adequately prevent exposures.

• The decision to use respiratory protection should be based on professional judgment that takes into account toxicity information, exposure measurement data, and frequency and likelihood of the worker's exposure - ensure users are not subject to high thermal loads which may result in heat stress or distress due to personal protective equipment (powered, positive flow, full face apparatus may be an option).

Published occupational exposure limits, where they exist, will assist in determining the adequacy of the selected respiratory protection. These may be government mandated or vendor recommended.

Certified respirators will be useful for protecting workers from inhalation of particulates when properly selected and fit tested as part of a complete respiratory protection program.
 Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU)

· Use approved positive flow mask if significant quantities of dust becomes airborne.

· Try to avoid creating dust conditions.

SECTION 9 Physical and chemical properties

Information on basic physical and chemical properties

Appearance Odourless white to light tan flakes; slightly soluble in water (4.56 g/L). Soluble in methanol, ether, acetone, benzene and ethyl acetate. Insoluble in petrol.

Physical state	Divided Solid	Relative density (Water = 1)	1.11
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Applicable
pH (as supplied)	Not Applicable	Decomposition temperature (°C)	Not Available
Melting point / freezing point (°C)	68-71	Viscosity (cSt)	Not Applicable
Initial boiling point and boiling range (°C)	Not Available	Molecular weight (g/mol)	132.25
Flash point (°C)	Not Available	Taste	Not Available
Evaporation rate	Not Applicable	Explosive properties	Not Available
Flammability	Not Available	Oxidising properties	Not Available
Upper Explosive Limit (%)	Not Available	Surface Tension (dyn/cm or mN/m)	Not Applicable
Lower Explosive Limit (%)	Not Available	Volatile Component (%vol)	Not Applicable
Vapour pressure (kPa)	Not Applicable	Gas group	Not Available
Solubility in water	Miscible	pH as a solution (1%)	Not Available
Vapour density (Air = 1)	Not Applicable	VOC g/L	Not Available

SECTION 10 Stability and reactivity

Reactivity	See section 7
Chemical stability	 Unstable in the presence of incompatible materials. Product is considered stable. Hazardous polymerisation will not occur.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 Toxicological information

Information on toxicological effects

Inhaled	Inhalation may cause nose and throat irritation, coughing and chest discomfort. The material is not thought to produce either adverse health effects or irritation of the respiratory tract following inhalation (as classified by EC Directives using animal models). Nevertheless, adverse systemic effects have been produced following exposure of animals by at least one other route and good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting. Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled. If prior damage to the circulatory or nervous systems has occurred or if kidney damage has been sustained, proper screenings should be conducted on individuals who may be exposed to further risk if handling and use of the material result in excessive exposures.
Ingestion	Ingestion may cause nausea and vomiting. Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual. The thioureas, which are antithyroid drugs, can cause headache, anxiety, fever, rash and stomach upset.
Skin Contact	The material is not thought to be a skin irritant (as classified by EC Directives using animal models). Abrasive damage however, may result from prolonged exposures. Skin contact with the material may damage the health of the individual; systemic effects may result following absorption. Open cuts, abraded or irritated skin should not be exposed to this material Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected. Skin sensitivity to thiourea derivatives has been demonstrated in several studies. Allergic contact dermatitis and photocontact dermatitis have

	been described.		
Eye	Although the material is not thought to be an irritant (as characterised by tearing or conjunctival redness (as with	classified by EC Directives), direct h windburn). Slight abrasive damag	contact with the eye may cause transient discomfort e may also result.
Chronic	There has been concern that this material can cause ca Skin contact with the material is more likely to cause a s Substance accumulation, in the human body, may occu Long term exposure to high dust concentrations may ca micron penetrating and remaining in the lung. Exposure to thiourea can result in reduced thyroid funct levels of circulating thyroid hormone.	ncer or mutations, but there is not e sensitisation reaction in some perso r and may cause some concern follo use changes in lung function i.e. pr ion. Prolonged exposure to high do	enough data to make an assessment. Ins compared to the general population. owing repeated or long-term occupational exposure. neumoconiosis, caused by particles less than 0.5 ses causes enlargement of the thyroid and reduced
	ΤΟΧΙCΙΤΥ	IRRITATION	
Diethyl Thiourea	dermal (rat) LD50: >1000<2000 mg/kg ^[1]	Eye: adverse ef	fect observed (irritating) ^[1]
	Oral (Rat) LD50; 316 mg/kg ^[2]	Skin: no adverse	e effect observed (not irritating) ^[1]
Legend:	1. Value obtained from Europe ECHA Registered Subsi specified data extracted from RTECS - Register of Toxic	tances - Acute toxicity 2. Value obta c Effect of chemical Substances	ined from manufacturer's SDS. Unless otherwise
DIETHYL THIOUREA	Carcinogenic by RTECS criteria. *CCOHS The following information refers to contact allergens as Contact allergies quickly manifest themselves as contac eczema involves a cell-mediated (T lymphocytes) immu involve antibody-mediated immune reactions. The signi distribution of the substance and the opportunities for co distributed can be a more important allergen than one w clinical point of view, substances are noteworthy if they The substance is classified by IARC as Group 3: NOT classifiable as to its carcinogenicity to humans. Evidence of carcinogenicity may be inadequate or limite	a group and may not be specific to t eczema, more rarely as urticaria o ne reaction of the delayed type. Ott ficance of the contact allergen is no ontact with it are equally important. <i>i</i> th stronger sensitising potential wit produce an allergic test reaction in ed in animal testing.	this product. or Quincke's oedema. The pathogenesis of contact ner allergic skin reactions, e.g. contact urticaria, t simply determined by its sensitisation potential: the A weakly sensitising substance which is widely th which few individuals come into contact. From a more than 1% of the persons tested.
DIETHYL THIOUREA	Carcinogenic by RTECS criteria. *CCOHS The following information refers to contact allergens as Contact allergies quickly manifest themselves as contac eczema involves a cell-mediated (T lymphocytes) immu involve antibody-mediated immune reactions. The signi distribution of the substance and the opportunities for co distributed can be a more important allergen than one w clinical point of view, substances are noteworthy if they The substance is classified by IARC as Group 3: NOT classifiable as to its carcinogenicity to humans. Evidence of carcinogenicity may be inadequate or limite	a group and may not be specific to t eczema, more rarely as urticaria of ne reaction of the delayed type. Oth ficance of the contact allergen is no ontact with it are equally important ith stronger sensitising potential with produce an allergic test reaction in ed in animal testing. Carcinogenicity	this product. or Quincke's oedema. The pathogenesis of contact ner allergic skin reactions, e.g. contact urticaria, t simply determined by its sensitisation potential: the A weakly sensitising substance which is widely th which few individuals come into contact. From a more than 1% of the persons tested.
DIETHYL THIOUREA Acute Toxicity Skin Irritation/Corrosion	Carcinogenic by RTECS criteria. *CCOHS The following information refers to contact allergens as Contact allergies quickly manifest themselves as contac eczema involves a cell-mediated (T lymphocytes) immu involve antibody-mediated immune reactions. The signi distribution of the substance and the opportunities for cr distributed can be a more important allergen than one w clinical point of view, substances are noteworthy if they The substance is classified by IARC as Group 3: NOT classifiable as to its carcinogenicity to humans. Evidence of carcinogenicity may be inadequate or limited X	a group and may not be specific to t eczema, more rarely as urticaria o ne reaction of the delayed type. Oth ficance of the contact allergen is no ontact with it are equally important ith stronger sensitising potential wil produce an allergic test reaction in ed in animal testing. Carcinogenicity Reproductivity	this product. or Quincke's oedema. The pathogenesis of contact ner allergic skin reactions, e.g. contact urticaria, t simply determined by its sensitisation potential: the A weakly sensitising substance which is widely th which few individuals come into contact. From a more than 1% of the persons tested.
DIETHYL THIOUREA DIETHYL THIOUREA Acute Toxicity Skin Irritation/Corrosion Serious Eye Damage/Irritation	Carcinogenic by RTECS criteria. *CCOHS The following information refers to contact allergens as Contact allergies quickly manifest themselves as contac eczema involves a cell-mediated (T lymphocytes) immu involve antibody-mediated immune reactions. The signi distribution of the substance and the opportunities for co distributed can be a more important allergen than one w clinical point of view, substances are noteworthy if they The substance is classified by IARC as Group 3: NOT classifiable as to its carcinogenicity to humans. Evidence of carcinogenicity may be inadequate or limited X	a group and may not be specific to t eczema, more rarely as urticaria o ne reaction of the delayed type. Ott ficance of the contact allergen is no ontact with it are equally important. <i>i</i> th stronger sensitising potential wil produce an allergic test reaction in ad in animal testing. Carcinogenicity Reproductivity STOT - Single Exposure	this product. or Quincke's oedema. The pathogenesis of contact ner allergic skin reactions, e.g. contact urticaria, t simply determined by its sensitisation potential: the A weakly sensitising substance which is widely th which few individuals come into contact. From a more than 1% of the persons tested.
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SECTION 12 Ecological information

Toxicity					
	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	72h	Algae or other aquatic plants	200mg/l	2
Diethyl Thiourea	EC50	48h	Crustacea	56mg/l	2
	EC10(ECx)	504h	Crustacea	1.67mg/l	2
	LC50	96h	Fish	910mg/l	2
Legend:	Extracted from Ecotox databas - Bioconcentrat	1. IUCLID Toxicity Data 2. Europe ECHA Registerec e - Aquatic Toxicity Data 5. ECETOC Aquatic Hazar ion Data 8. Vendor Data	l Substances - Ecotoxicological Information - Aquatic d Assessment Data 6. NITE (Japan) - Bioconcentrati	Toxicity 4. U on Data 7. M	IS EPA, ETI (Japan)

Environmental Fate:

Aquatic Fate: If released to water, 1,3-diethylthiourea will not adsorb to suspended particles and sediment in the water column, and it will not undergo significant volatilization from water surfaces based upon its physico-chemical characteristics. Since thiourea (a structurally similar compound) was found to be stable to hydrolysis and photolysis, then 1,3-diethylthiourea is also expected to be stable to both hydrolysis and photolysis. Study shows that 1,3-diethylthiourea has low potential to accumulate in aquatic organisms. Terrestrial Fate: If released to soil, 1,3-diethylthiourea is expected to be highly mobile in soil based upon its physico-chemical properties thus it may potentially leach into groundwater. Volatilization of the compound from moist and dry soil surfaces is not a significant fate process based upon its physico-chemical properties. Atmospheric Fate: The model of gas/particle partitioning of semivolatile organic compounds in the atmosphere demonstrates that 1,3-diethylthiourea will exist solely as a vapor in the

ambient atmosphere. Vapor-phase 1,3-diethylthiourea will be degraded in the atmosphere by reaction with photochemically produced hydroxyl radicals. Furthermore, since 1,3-diethylthiourea has high water solubility, it is expected to adsorb onto atmospheric particulate matter. **DO NOT** discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
Diethyl Thiourea	LOW	LOW
Bioaccumulative potential		
Ingredient	Bioaccumulation	
Diethyl Thiourea	LOW (LogKOW = 0.57)	
Mobility in soil		
Ingredient	Mobility	

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DIETHYL THIOUREA

Ingredient Mobility Diethyl Thiourea LOW (KOC = 19.94) SECTION 13 Disposal considerations Section and the second se		
Diethyl Thiourea LOW (KOC = 19.94) SECTION 13 Disposal constrainers SECTION 13 Disposal constrainers Waste treatment methods Image: Section of the section	Ingredient	Mobility
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 vmere in doubt contact the responsible authority. 		 where in doubt contract the responsible authority.

- Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.
- Dispose of by: burial in a land-fill specifically licensed to accept chemical and / or pharmaceutical wastes or Incineration in a licensed apparatus (after admixture with suitable combustible material)
- Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.

SECTION 14 Transport information

Marine Pollutant NO HAZCHEM Not Applicable

Land transport (ADG): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

Product name	Group
Diethyl Thiourea	Not Available

Transport in bulk in accordance with the ICG Code

Product name	Ship Type
Diethyl Thiourea	Not Available

SECTION 15 Regulatory information

Safety, health and environmental regulations / legislation specific for the substance or mixture

Diethyl Thiourea is found on the following regulatory lists

Australian Inventory of Industrial Chemicals (AIIC)

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs

National Inventory Status

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	Yes
Canada - DSL	Yes
Canada - NDSL	No (Diethyl Thiourea)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	Yes
Korea - KECI	Yes

National Inventory	Status
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	Yes
Vietnam - NCI	Yes
Russia - FBEPH	Yes
Legend:	Yes = All CAS declared ingredients are on the inventory No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.

SECTION 16 Other information

Revision Date	20/06/2022
Initial Date	17/01/2002

SDS Version Summary

Version	Date of Update	Sections Updated
5.1	20/06/2022	Expiration. Review and Update

Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Definitions and abbreviations

PC-TWA: Permissible Concentration-Time Weighted Average
PC-STEL: Permissible Concentration-Short Term Exposure Limit
IARC: International Agency for Research on Cancer
ACGIH: American Conference of Governmental Industrial Hygienists
STEL: Short Term Exposure Limit
TEEL: Temporary Emergency Exposure Limit。
IDLH: Immediately Dangerous to Life or Health Concentrations
ES: Exposure Standard
OSF: Odour Safety Factor
NOAEL :No Observed Adverse Effect Level
LOAEL: Lowest Observed Adverse Effect Level
TLV: Threshold Limit Value
LOD: Limit Of Detection
OTV: Odour Threshold Value
BCF: BioConcentration Factors
BEI: Biological Exposure Index
AIIC: Australian Inventory of Industrial Chemicals
DSL: Domestic Substances List
NDSL: Non-Domestic Substances List
IECSC: Inventory of Existing Chemical Substance in China
EINECS: European INventory of Existing Commercial chemical Substances
ELINCS: European List of Notified Chemical Substances
NLP: No-Longer Polymers
ENCS: Existing and New Chemical Substances Inventory
KECI: Korea Existing Chemicals Inventory
NZIoC: New Zealand Inventory of Chemicals
PICCS: Philippine Inventory of Chemicals and Chemical Substances
TSCA: Toxic Substances Control Act
TCSI: Taiwan Chemical Substance Inventory
INSQ: Inventario Nacional de Sustancias Químicas
NCI: National Chemical Inventory
FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances
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