



Section 1 - Identification of the Material and Supplier

Trade Name: THIRAM LIQUID FUNGICIDE
APVMA Code: 54659
Product Use: Agricultural fungicide for use as described on the product label.
Supplier: Barmac (a division of Amgrow Pty Ltd)
Unit B2a, 3/29 Birnie Ave, Lidcombe NSW 2141
Phone: 02 9395 1200 (office hours), Fax: 02 9395 1241
www.amgrow.com.au
This version issued: December 2016 and is valid for 5 years from this date.

Poisons Information Centre: Phone 13 1126 from anywhere in Australia

Section 2 - Hazards Identification

Statement of Hazardous Nature

THIS PRODUCT IS CLASSIFIED AS: HAZARDOUS ACCORDING TO THE CRITERIA OF SWA. (XN, HARMFUL) NOT A DANGEROUS GOOD ACCORDING TO AUSTRALIAN DANGEROUS GOODS (ADG) CODE, IATA OR IMDG/IMSBC CRITERIA.

Risk Phrases: R20/22 Harmful by inhalation and if swallowed, R48/22 Harmful: danger of serious damage to health by prolonged exposure if swallowed, R36/38 Irritating to eyes and skin, R43 May cause sensitisation by skin contact.

Safety Phrases: S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice, S36/37 Wear suitable protective clothing and gloves, S60 The material and its container must be disposed of as hazardous waste, S61 Avoid release to the environment.

SUSMP Classification: S6

ADG Classification: None allocated. Not a Dangerous Good according to Australian Dangerous Goods (ADG) Code, IATA or IMDG/IMSBC criteria.

UN Number: None allocated



GHS Signal word: WARNING

Acute Toxicity Category 4
Eye irritation Category 2
Skin Irritation Category 2
Skin Sensitisation Category 1
Specific Target organ toxicity (repeated exposure) Category 2
Hazardous to aquatic environment Short term/Acute Category 1

HAZARD STATEMENT:

H332: Harmful if inhaled
H302: Harmful if swallowed
H373: May cause damage to organs through prolonged or repeated exposure
H319: Causes serious eye irritation
H315: Causes skin irritation
H317: May cause an allergic skin reaction.
H410: Very toxic to aquatic life with long lasting effects

PREVENTION

P102: Keep out of reach of children.
P202: Do not handle until all safety precautions have been read and understood.
P260: Do not breathe mists or vapours.
P262: Do not get in eyes, on skin, or on clothing.
P264: Wash hands and face thoroughly after handling
P270: Do not eat, drink or smoke when using this product

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- P271: Use only outdoors or in a well ventilated area
P272: Contaminated work clothing should not be allowed out of the workplace.
P273: Avoid release to the environment.
P280: Wear protective gloves, protective clothing and eye or face protection.

RESPONSE

- P362+P364: Take off contaminated clothing and wash it before reuse.
P301+P312+P330: IF SWALLOWED: Call a POISON CENTRE or doctor if you feel unwell. Rinse mouth
P304+P340: IF INHALED: Remove persons to fresh air and keep comfortable for breathing
P302+P352: IF ON SKIN: Wash with plenty of soap and water.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove Contact lenses, if present and easy to do. Continue rinsing
P337+P313: If eye irritation persists: get medical attention/advice
P308+P313: If exposed or concerned: Get medical advice.
P333+P313: If skin irritation or rash occurs: Get medical advice.
P391: Collect spillage

STORAGE

- P410: Protect from sunlight.
P402+P404: Store in a dry place. Store in a closed container.

DISPOSAL

- P501: Dispose of contents and containers as specified on the registered label.

Emergency Overview

Physical Description & Colour: Yellow coloured thick liquid

Odour: Moderate odour

Major Health Hazards: Harmful if swallowed, inhaled or on skin

Section 3 - Composition/Information on Ingredients

Ingredients	CAS No	Conc. %
Tetramethylthiuram disulphide (Thiram)	137-26-8	60
Other non hazardous ingredients	secret	to 100

This is a commercial product whose exact ratio of components may vary slightly. Minor quantities of other non hazardous ingredients are also possible.

Section 4 - First Aid Measures

General Information: You should call The Poisons Information Centre if you feel that you may have been poisoned, burned or irritated by this product. The number is 13 1126 from anywhere in Australia (0800 764 766 in New Zealand) and is available at all times. Have this SDS with you when you call.

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, seek immediate medical attention.

Skin Contact: Remove contaminated clothing and wash affected areas with soap and water. Seek medical attention if irritation develops. Launder clothing before reuse.

Eye Contact: In case of eye contact, check for and remove any contact lenses. Immediately irrigate eyes with plenty of running water for at least 15 minutes, keeping eyelids open. Seek immediate medical attention.

Ingestion: If product is swallowed or gets in mouth, do NOT induce vomiting; wash mouth with water and give some water to drink. Contact a Poisons Information Centre or a doctor.

Section 5 - Fire Fighting Measures

Fire and Explosion Hazards: The major hazard in fires is usually inhalation of heated and toxic or oxygen deficient (or both), fire gases. There is no risk of an explosion from this product under normal circumstances if it is involved in a fire.

Fire decomposition products from this product may be toxic if inhaled. Take appropriate protective measures.

Extinguishing Media: In case of fire, use carbon dioxide, dry chemical, foam, water fog.

Fire Fighting: If a significant quantity of this product is involved in a fire, call the fire brigade.

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Flash point: Not flammable
Upper Flammability Limit: No data.
Lower Flammability Limit: No data.
Auto ignition temperature: Not relevant
Flammability Class: No data.

Section 6 - Accidental Release Measures

Accidental release: Stop leak if safe to do so, and contain spill. Absorb onto sand, vermiculite or other suitable absorbent material. If spill is too large or if absorbent material is not available, try to create a dike to stop material spreading or going into drains or waterways. Sweep up and shovel or collect recoverable product into labelled containers for recycling or salvage, and dispose of promptly. Recycle containers wherever possible after careful cleaning. After spills, wash area preventing runoff from entering drains. If a significant quantity of material enters drains, advise emergency services. This material may be suitable for approved landfill. Ensure legality of disposal by consulting regulations prior to disposal. Thoroughly launder protective clothing before storage or re-use. Advise laundry of nature of contamination when sending contaminated clothing to laundry.

Section 7 - Handling and Storage

Handling: Keep exposure to this product to a minimum, and minimise the quantities kept in work areas. Check Section 8 of this SDS for details of personal protective measures, and make sure that those measures are followed. The measures detailed below under "Storage" should be followed during handling in order to minimise risks to persons using the product in the workplace. Also, avoid contact or contamination of product with incompatible materials listed in Section 10.

Storage: This product is a Scheduled Poison. Observe all relevant regulations regarding sale, transport and storage of this schedule of poison. Protect this product from light. Store in the closed original container in a dry, cool, well-ventilated area out of direct sunlight. Make sure that the product does not come into contact with substances listed under "Incompatibilities" in Section 10. Check packaging - there may be further storage instructions on the label.

Section 8 - Exposure Controls and Personal Protection

SWA Exposure Limits	TWA (mg/m ³)	STEL (mg/m ³)	ADI (mg/m ³)	NOEL(mg/m ³)
Thiram	1	not set	0.004	0.4

Exposure limits have not been set by SWA for other ingredients in product. The TWA exposure value is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. There is a blanket limit of 10mg/m³ for dusts or mists when limits have not otherwise been established. The STEL (Short Term Exposure Limit) is an exposure value that should not be exceeded for more than 15 minutes and should not be repeated for more than 4 times per day. There should be at least 60 minutes between successive exposures at the STEL. The term "peak" is used when the TWA limit, because of the rapid action of the substance, should never be exceeded, even briefly. ADI means Acceptable Daily Intake and NOEL means No-observable-effect-level. Values taken from Australian ADI List, 31st March 2012

Personal Protection

The following Australian Standards will provide general advice regarding safety clothing and equipment:

Respiratory equipment: **AS/NZS 1715**, Protective Gloves: **AS 2161**, Occupational Protective Clothing: AS/NZS 4501 set 2008, Industrial Eye Protection: **AS1336** and **AS/NZS 1337**, Occupational Protective Footwear: **AS/NZS2210**.

No special equipment is usually needed when occasionally handling small quantities. The following instructions are for bulk handling or where regular exposure in an occupational setting occurs without proper containment systems.

Ventilation: This product should only be used in a well ventilated area. If natural ventilation is inadequate, use of a fan is suggested.

Eye Protection: Eye protection such as protective glasses or goggles should be worn when this product is being used.

Skin Protection: You should prevent skin contact by wearing impervious gloves, clothes and, preferably, apron. Make sure that all skin areas are covered. See below for suitable material types.

Protective Material Types: We suggest that protective clothing be made from the following materials: cotton, rubber, PVC.

Respirator: If there is a significant chance that vapours are likely to build up in the area where this product is being used, use a suitable dust mask.

Safety deluge showers should, if practical, be provided near to where this product is being handled commercially.

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Section 9 - Physical and Chemical Properties:

Physical Description & colour:	Viscous yellow liquid
Odour:	Moderate odour
Boiling Point:	>100°C
Freezing/Melting Point:	Decomposes 192-204°C before melting.
Volatiles:	Nil at 100°C.
Vapour Pressure:	Nil at normal ambient temperatures.
Vapour Density:	Not applicable.
Specific Gravity:	1.2
Water Solubility:	0.03g/L water
pH:	No data.
Volatility:	No data
Odour Threshold:	No data.
Evaporation Rate:	Not applicable.
Coeff Oil/water Distribution:	No data
Viscosity:	No data

Section 10 - Stability and Reactivity

Reactivity: This product is unlikely to react or decompose under normal storage conditions. However, if you have any doubts, contact the supplier for advice on shelf life properties.

Conditions to Avoid: Protect this product from light. Store in the closed original container in a dry, cool, well-ventilated area out of direct sunlight.

Incompatibilities: strong acids, strong bases, strong oxidising agents.

Fire Decomposition: This product is likely to decompose only after heating to dryness, followed by further strong heating. Carbon dioxide, and if combustion is incomplete, carbon monoxide and smoke. Nitrogen and its compounds, and under some circumstances, oxides of nitrogen. Occasionally hydrogen cyanide gas in reducing atmospheres. Oxides of sulfur (sulfur dioxide is a respiratory hazard) and other sulfur compounds. Most will have a foul odour.

Polymerisation: This product will not undergo polymerisation reactions.

Section 11 - Toxicological Information

Acute Toxicological Information Tetramethylthiuram disulphide is harmful by ingestion and inhalation and by dermal absorption. Acute exposure in humans may cause headaches, dizziness, fatigue, nausea, diarrhoea, and other gastrointestinal complaints.

Tetramethylthiuram disulphide is irritating to the eyes, skin, and respiratory tract. It is a skin sensitizer. Symptoms of acute inhalation exposure to Tetramethylthiuram disulphide include itching, scratchy throat, hoarseness, sneezing, coughing, inflammation of the nose or throat, bronchitis, dizziness, headache, fatigue, nausea, diarrhoea, and other gastrointestinal complaints. Ingestion of Thiram and alcohol together may cause stomach pains, nausea, vomiting, headache, slight fever, and possible dermatitis.

The 4-hour inhalation LC50 for Tetramethylthiuram disulphide is greater than 500 mg/L in rats. Reported oral LD50 values for Tetramethylthiuram disulphide are 620 to over 1900 mg/kg in rats; 1500 to 2000 mg/kg in mice; and 210 mg/kg in rabbits. The dermal LD50 is greater than 1000 mg/kg in rabbits and in rats

Chronic Toxicological Information: Symptoms of chronic exposure to Tetramethylthiuram disulphide in humans include drowsiness, confusion, loss of sex drive, incoordination, slurred speech, and weakness, in addition to those due to acute exposure. Repeated or prolonged exposure to Tetramethylthiuram disulphide can also cause allergic reactions such as dermatitis, watery eyes, sensitivity to light, and conjunctivitis

Classification of Hazardous Ingredients

Ingredient

Thiram

Risk Phrases

R20/22 , R48/22, R36/38, R43

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Potential Health Effects

Inhalation: Available data indicates that this product is harmful if inhaled

Skin Contact: May cause sensitisation and irritation to skin. Classified as a potential sensitiser by skin contact. Exposure to a skin sensitiser, once sensitisation has occurred, may manifest itself as skin rash or inflammation, and in some individuals this reaction can be severe. In addition product may be irritating

Eye Contact: This product is irritating to eyes

Ingestion: Harmful if swallowed

Carcinogen Status:

SWA: No significant ingredient is classified as carcinogenic by SWA.

NTP: No significant ingredient is classified as carcinogenic by NTP.

IARC: No significant ingredient is classified as carcinogenic by IARC.

Section 12 - Ecological Information

Ecotoxicity:

Very toxic to aquatic organisms, may cause long-term adverse effects to the aquatic environment. This product is biodegradable. It will not accumulate in the soil or water or cause long term problems

Effects On Birds: Thiram is practically nontoxic to birds. The reported dietary LC50 of Thiram in Japanese quail is greater than 5000 ppm. Reported dietary LC50 values in pheasants and mallard ducks are 2800 ppm and 673 ppm, respectively. The LD50 for the compound in red-winged blackbirds is greater than 100 mg/kg.

Effects On Aquatic Organisms: Thiram is highly toxic to fish. The LC50 for the compound is 0.23 mg/L in bluegill sunfish, 0.13 mg/L in trout, and 4 mg/L in carp. Thiram is not expected to bioconcentrate in aquatic organisms.

Effects On Other Organisms: Thiram is nontoxic to bees.

Environmental Fate:

Soil And Groundwater: Thiram is of low to moderate persistence. It is nearly immobile in clay soils or in soils high in organic matter. Because it is only slightly soluble in water (30 mg/L) and has a strong tendency to adsorb to soil particles, Thiram is not expected to contaminate groundwater.. The major metabolites of Thiram in the soil are copper dimethyldithiocarbamate, dithiocarbamate, dimethylamine, and carbon disulfide. In soil, Thiram will be degraded by microbial action or by hydrolysis under acidic conditions. Thiram will not volatilize from wet or dry soil surfaces.

Breakdown In Water: In water, Thiram is rapidly broken down by hydrolysis and photo degradation, especially under acidic conditions. Thiram may adsorb to suspended particles or to sediment.

Breakdown In Vegetation: No data currently available.

Section 13 - Disposal Considerations

Disposal: Special help is available for the disposal of Agricultural Chemicals. The product label will give general advice regarding disposal of small quantities, and how to cleanse containers. However, for help with the collection of unwanted rural chemicals, contact ChemClear 1800 008 182 <http://www.chemclear.com.au/> and for help with the disposal of empty drums, contact DrumMuster <http://www.drummuster.com.au/> where you will find contact details for your area.

Section 14 - Transport Information

UN Number: This product is not classified as a Dangerous Good by ADG, IATA or IMDG/IMSBC criteria. No special transport conditions are necessary unless required by other regulations.

Section 15 - Regulatory Information

AICS: All of the significant ingredients in this formulation are compliant with NICNAS regulations. The following ingredient: Thiram is mentioned in the SUSMP.

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**Section 16 - Other Information**

This SDS contains only safety-related information. For other data see product literature.

Acronyms:

ADG Code	Australian Code for the Transport of Dangerous Goods by Road and Rail	IMDG	International Maritime Dangerous Good
AICS	Australian Inventory of Chemical Substances	IMSBC	International Maritime Solid Bulk Code
CAS number	Chemical Abstracts Service Registry Number	NTP	National Toxicology Program (USA)
Hazchem Number	Emergency action code of numbers and letters that provide information to emergency services especially fire-fighters	SUSMP	Standard for the Uniform Scheduling of Medicines & Poisons
IARC	International Agency for Research on Cancer	SWA	Safe Work Australia (formerly ASCC and NOHSC)
IATA	International Air Transport Authority	UN Number	United Nations Number

THIS SDS SUMMARISES OUR BEST KNOWLEDGE OF THE HEALTH AND SAFETY HAZARD INFORMATION OF THE PRODUCT AND HOW TO SAFELY HANDLE AND USE THE PRODUCT IN THE WORKPLACE. EACH USER MUST REVIEW THIS SDS IN THE CONTEXT OF HOW THE PRODUCT WILL BE HANDLED AND USED IN THE WORKPLACE.

IF CLARIFICATION OR FURTHER INFORMATION IS NEEDED TO ENSURE THAT AN APPROPRIATE RISK ASSESSMENT CAN BE MADE, THE USER SHOULD CONTACT THIS COMPANY SO WE CAN ATTEMPT TO OBTAIN ADDITIONAL INFORMATION FROM OUR SUPPLIERS. OUR RESPONSIBILITY FOR PRODUCTS SOLD IS SUBJECT TO OUR STANDARD TERMS AND CONDITIONS, A COPY OF WHICH IS SENT TO OUR CUSTOMERS AND IS ALSO AVAILABLE ON REQUEST.

Please read all labels carefully before using product.

This SDS is prepared in accord with the SWA document "Preparation of Safety Data Sheets for Hazardous Chemicals - Code of Practice" (December 2011)
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