



1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name: Thiraflo Flowable Fungicide
Other Names: Thiram
Product Codes: None allocated
Recommended Use: Seed treatment to control various fungal diseases of chickpeas and lupins.
Chemical Family:
Supplier: Chemtura Australia Pty Ltd
ABN: 005 225 507
Street Address: Level 7, 435 King William Street
Adelaide South Australia 5000
Telephone Number: 61 8 8112 0900
Facsimile Number: 61 8 8112 0999
Emergency Telephone: 1800 033 111 (24-hour service)

2. HAZARDS IDENTIFICATION

Hazard Classification: **HAZARDOUS SUBSTANCE, DANGEROUS GOOD**
Classified according to the criteria of the National Occupational Health and Safety Commission (NOHSC).

Risk Phrases: **Harmful (Xn):**
R 20/22 Harmful by inhalation and if swallowed.
R 36/37 Irritating to eyes and respiratory system.
R 43 May cause sensitisation by skin contact.
R 68 Possible risk of irreversible effects

Safety Phrases:
S (2) Keep out of reach of children.
S 36/37 Wear suitable protective clothing and gloves.

Poisons Schedule: S6
Dangerous Goods Class: Class 9. Miscellaneous Dangerous Goods (AS/NZS 4681)

3. COMPOSITION AND INFORMATION ON INGREDIENTS

Chemical Identity	Common Name(s) and Synonym(s)	CAS Number	Proportion by Weight
Tetramethylthiuram disulphide	Thiram	137-26-8	600g/L

Note: Australian and US Patents apply.

4. FIRST AID MEASURES

Ingestion: If patient is fully conscious, thoroughly rinse mouth with water. Avoid giving alcohol to drink. Seek urgent medical attention.

Inhalation: Remove to fresh air - avoid becoming a casualty. If breathing difficulties occur, give oxygen. Apply artificial respiration if not breathing. Seek urgent medical advice.

Eye Contact: Hold eye(s) open and flush with water for 15 minutes. Seek medical advice.

Skin Contact: Remove contaminated clothing and wash skin thoroughly with soap and water. Launder clothing before reuse.

Advice to Doctor: If poisoning occurs, contact a doctor or Poisons Information Centre. Phone Australia 13 1126; New Zealand 03 4747 000.

If a large quantity has been swallowed and effective vomiting has not yet occurred, the stomach has to be emptied by intubation, aspiration and lavage. This should be followed by instillation of activated charcoal and cathartic. If only a small quantity has been ingested and/or treatment has been delayed, oral administration of activated charcoal probably represents optimal management. In severe poisoning, intravenous glucose solution infusion protects and supports the mechanisms of detoxification and excretion.

First Aid Facilities: Eye wash station.

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media: Water spray or dry chemical. Fight fire with extinguishing material appropriate to burning material(s). Contain runoff.

Hazards from Combustion Products: Will decompose however when heated to emit toxic and noxious gases of NO₂ and SO₂.

Precautions for Fire fighters and Special Protective Equipment: In the event of fire in an area where the product is stored, fight fire upwind; if downwind, in a confined space or in smoke or fumes, wear self contained breathing apparatus (SCBA). Advise Fire Brigade of nature of hazard. Contain runoff.

HazChem Code: 2 X E

Additional Information: This product is water based and therefore is not flammable.

6. ACCIDENTAL RELEASE MEASURES

Emergency Procedures: If there is contamination of crops or waterways, advise emergency services or State Department.

Methods and Materials for Containment and Clean-Up Procedures: Keep bystanders away from scene of accident. Using sand or soil, form a dam around the spill to prevent entry to sewers or watercourses. Adsorb with sand or soil and sweep up. Douse spill area with sodium hypochlorite (bleach) solutions and absorb with soil or sand. Sweep up and hose spill area with copious quantities of water. Do not allow to contaminate watercourses or drains.

7. HANDLING AND STORAGE

Conditions for Safe Storage: Store in original container, away from fertilizers, animal and human feedstuffs. Keep cool, dry and out of direct sunlight. This material is a Scheduled Poison (S6) and must be stored, maintained and used in accordance with the relevant regulations.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

National Exposure Standards: No value assigned for this specific material by the National Occupational Health and Safety Commission (NOHSC). However, for Thiram, TWA = 1 mg/m³
The exposure limit is expressed as a time weighted average (TWA) concentration over an 8 hour working shift for a 5 day working week, and is the exposure standard recommended by Worksafe Australia.

Engineering Controls: Use only in well ventilated areas. Ensure ventilation is adequate to maintain air concentrations below exposure standards listed above. Keep containers closed when not in use.

Personal Protective Equipment (PPE): Avoid all personal contact. When using, do not eat, drink or smoke. Wear cotton overalls buttoned to the neck and wrist, elbow-length PVC gloves and face shield or goggles. In the absence of adequate ventilation, use a respirator fitted with an agricultural chemical cartridge(s). If product on skin, immediately wash area with soap and water. If product in eyes, wash it out immediately with water. After use and before eating, drinking, smoking or using the toilet, wash hands, arms and face thoroughly with soap and water. Launder clothing before storing or reusing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Pale blue liquid suspension

Odour: No odour

pH: Not available

Melting Point: Not available

Boiling Point: Not available

Solubility in water: Miscible

Specific Gravity (Water = 1):	1.19
Flammability Limits (%):	Not available.
Decomposition Temp:	Not available.
Flashpoint:	> 94°C

10. STABILITY AND REACTIVITY

Chemical Stability:	Light stable at ambient temperatures and pressures. Will thicken irreversibly with heat.
Conditions to Avoid:	Unstable in acidic conditions
Incompatible Materials:	Strong acids oxidizers, copper
Hazardous Decomposition Products:	None recorded
Hazardous Reactions:	None recorded
Polymerisation:	Not relevant

11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure:

Acute Health Effects:	<p>Ingestion: Moderate to low toxicity by ingestion. Ingestion can result in nausea, vomiting, diarrhea, abdominal pain and convulsions.</p> <p>Acute oral LD₅₀ (rat) > 560 mg/kg thiram tech</p> <p>Eye contact: Contact with eyes may cause slight irritation</p> <p>Skin contact: Contact with skin may cause irritation. Thiram is a possible skin sensitizer and may cause an allergic skin rash. Acute dermal LD₅₀ (rabbit) - > 1,000 mg/kg thiram tech</p> <p>Inhalation: Inhalation of the mist will result in irritations of the mucous membranes and respiratory tract, coughing and sneezing.</p>
Chronic Health Effects:	<p>Studies in animals have shown that thiram may cause CNS, liver, kidney, fetotoxic and testicular damage, following repeated or prolonged overexposure. The material may be weakly mutagenic but no evidence of carcinogenic effects has been observed in several animal test species.</p> <p>Acute oral LD₅₀ (rat) - 560 mg/kg (thiram technical)</p> <p>Acute dermal LD₅₀ (rat) - > 1000 mg/kg (thiram technical)</p> <p>Acute inhalation LC₅₀ (rat) - > 0.3-1.0 mg/L/4H (thiram technical)</p>
Other information:	<p>Thiram is toxic and short-term exposure by all routes is considered harmful. Intolerance to alcohol has been observed in some workers, as thiram is very similar to 'Antabuse' (disulfiram) in its action, causing an accumulation of acetaldehyde. Symptoms include flushing, sweating, nausea, vomiting, dizziness, palpitations, headaches, rapid pulse, breathing difficulties and a lowering of blood pressure. This is a rare occurrence.</p>

12. ECOLOGICAL INFORMATION

Ecotoxicity:	<p>Do not feed or otherwise expose treated seed to wild animals and birds.</p> <p>Highly toxic to fish due to presence of thiram. LC₅₀ Salmo (trout) 0.13 mg/L (Thiram technical)</p> <p>Do not contaminate streams, rivers or waterways and drains with this product or used containers.</p> <p>Not toxic to bees. Not toxic to birds. Acute oral LD₅₀ Redwing Blackbird > 100 mg/kg (Thiram technical)</p>
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13. DISPOSAL CONSIDERATIONS

Disposal Method(s):	<p>For disposal after intended use: Store in the closed, original container in a well-ventilated area, as cool as possible. Do not store for prolonged periods in direct sunlight. Triple or (preferably) pressure rinse containers before disposal. Add rinsings to spray tank. Do not dispose of undiluted chemicals on-site. If recycling, replace cap and return clean containers to recycler or designated collection point. If not recycling, break, crush or puncture and bury empty containers in a local authority landfill. If no landfill is available, bury the containers below 500 mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots. Empty containers and product should not be burnt.</p> <p>For disposal after accident or spill: Dispose of sealed containers at an approved local waste disposal site.</p>
Precautions for Landfill or Incineration:	Empty containers and product should not be burnt.

14. TRANSPORT INFORMATION

UN Number: 3082
UN Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCES LIQUID NOS (Contains Thiram) Marine Pollutant
DG Class & Subsidiary Risk: Class 9. Miscellaneous Dangerous Goods.
Packing Group: III
EPG/GTEPG: Guide 47
HazChem Code: 2XE
Other Information: Classified as miscellaneous dangerous goods for the purpose of transport. Refer to relevant regulations for storage and transport requirements.
Do not load with dangerous goods class 1, foodstuff or foodstuffs empties
TRANSPORT BY AIR: Refer to IATA regulations for UN No 3082
TRANSPORT BY SEA: Refer to IATA regulations for UN No 3082
Store in original container, away from fertilizers, animal and human feedstuffs. Keep cool, dry and out of direct sunlight. This material is a Scheduled Poison (S6) and must be stored, maintained and used in accordance with the relevant regulations.

15. REGULATORY INFORMATION

Poisons Schedule: S6
Additional Information: APVMA Product No. 58072

16. OTHER INFORMATION

Date of Preparation: April, 2006
Revision Date: May, 2008
Revision Number: 1
Revision Summary: Rev 1 - Update of Chemtura contact details.

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