


Safety Data Sheet

RAM 75WP L10951 (Act 36 of 1947)

1) PRODUCT AND COMPANY IDENTIFICATION	
Product name:	THIRAM 750 WP
Other means of identification:	NA
Chemical Name:	Thiram (IUPAC): bis(dimethylthiocarbamoyl) disulfide, tetramethylthiuram disulfide
Recommended use:	Fungicide
Restrictions on use:	Agriculture
UN No:	3077
Distributed by:	MERIDIAN AGRITECH P O BOX 436 MODDERFONTEIN TEL 011 8228509 FAX 0866901386 MOBILE: 0834006056 www.agritech.co.za
Emergency Number:	POISON CENTRE (UNITAS HOSPITAL) 012 664 1100 TYGERBERG: 021 931 6129 RED CROSS 021 689 5227 RAPID SPILL RESPONSE 0800 775 3305 GRIFFON POISON CENTRE: 082 446 8946
2) HAZARDS IDENTIFICATION:	
Classification of the substance/mixture:	Acute Toxicity (Oral) Category 4 Acute Toxicity (Inhalation) Category 4 Skin Irritation Category 2 Eye Irritation Category 2 Skin Sensitization Category 1 STOT RE Category 2 Aquatic Acute Category 1 Aquatic Chronic Category 1
Label Elements: Globally Harmonized System, EU (GHS):	<p>Pictogram:</p>  <p>Signal word: Warning</p> <p>Hazard Statements: H302: Harmful if swallowed. H315: Causes skin irritation. H317: May cause an allergic skin reaction. H319: Causes serious eye irritation. H332: Harmful if inhaled. H373: May cause damage to organs through prolonged or repeated exposure. H400: Very toxic to aquatic life. H410: Very toxic to aquatic life with long-lasting effects.</p> <p>Precautionary Statements: P201: Obtain special instructions before use. P202: Do not handle until all safety precautions have been read and understood. P260: Do not breathe dust/mist.</p>

<p>According to Directive 67/548/EEC No. 1272/2008 [CLP]</p>	<p>P262: Do not get in eyes, on skin, or on clothing. P264: Wash face and hands thoroughly after handling. P270: Do not eat, drink or smoke when using this product. P271: Use only outdoors or in a well-ventilated area. P273: Avoid release to the environment. P280: Wear protective gloves/protective clothing/eye protection/face protection. P284: In case of inadequate ventilation wear respiratory protection. P403+233: Store in a well-ventilated place. Keep container tightly closed.</p> <p>Hazard symbols: N: Dangerous for the environment Xn: Harmful Xi: Irritant</p> <p>R-phrases(s): R20/22: Harmful by inhalation and if swallowed. R36/37/38: Irritating to eyes, respiratory system and skin. R40: Limited evidence of a carcinogenic effect. R43: May cause sensitization by skin contact. R48: Danger of serious damage to health by prolonged exposure. R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.</p> <p>S-phrases(s): S1/2: Keep locked up and out of reach of children. S3: Keep in a cool place. S7: Keep container tightly closed. S13: Keep away from food, drink and animal feeding stuffs. S20/21: When using, do not eat, drink or smoke. S23: Do not breathe dust/mist. S24/25: Avoid contact with the skin and eyes. S28: After contact with skin, wash immediately with plenty of water. S35: This material and its container must be disposed of in a safe way. S36/37/39: Wear suitable protective clothing, gloves and eye/face protection. S57: Use appropriate containment to avoid environmental contamination. S61: Avoid release to the environment. Refer to special instructions/Safety data sheets.</p>										
3) COMPOSITION / INFORMATION ON INGREDIENTS:											
3.1 Substances:											
Not applicable											
3.2 Mixtures:											
<table><tr><th>Chemical name</th><th>Concentration</th><th>CAS No.</th><th>EC No.</th><th>Classification according to Regulation EC 1272/2008 (CLP)</th></tr><tr><td>Thiram</td><td>750 g/kg</td><td>137-26-8</td><td>205-286-2</td><td>Acute Tox. Cat. 4 (H302) Skin Irrit. Cat. 2 (H315) Eye Irrit. Cat. 2 (H319) Skin Sens. Cat. 1 (H317) Acute Tox. Cat. 4 (H332) STOT RE Cat. 2 (H373) Aquatic Acute Cat. 1 (H400) Aquatic Chronic Cat. 1 (H410)</td></tr></table>	Chemical name	Concentration	CAS No.	EC No.	Classification according to Regulation EC 1272/2008 (CLP)	Thiram	750 g/kg	137-26-8	205-286-2	Acute Tox. Cat. 4 (H302) Skin Irrit. Cat. 2 (H315) Eye Irrit. Cat. 2 (H319) Skin Sens. Cat. 1 (H317) Acute Tox. Cat. 4 (H332) STOT RE Cat. 2 (H373) Aquatic Acute Cat. 1 (H400) Aquatic Chronic Cat. 1 (H410)	
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4) FIRST AID MEASURES:											
<p>Description of First-Aid Measures:</p> <p>Inhalation:</p>	<p>Remove patient to fresh air. Loosen clothing around neck. Lie down and keep warm and rested. If breathing is shallow or has stopped, ensure airway is clear and apply resuscitation. If breathing is laboured oxygen should be supplied by qualified</p>										

<p>Skin contact:</p> <p>Eye contact:</p> <p>Ingestion:</p> <p>Most important symptoms and effects, both acute and delayed:</p> <p>Indication of any immediate medical attention and special treatment needed:</p>	<p>personnel only. Seek medical assistance if necessary.</p> <p>Immediately flush body and clothes with large amounts of water. Remove contaminated clothing and footwear. Wash skin gently but thoroughly with plenty of water and non-abrasive soap for 15 to 20 minutes. Do not rub skin. Persons providing first aid must wear gloves to avoid self-contamination. Seek medical assistance if irritation persists. Persons who become sensitized may require specialized medical management with anti-inflammatory agents or cortisone-containing emulsions.</p> <p>Immediately flush eyes with a stream of gently flowing lukewarm water or saline solution for 20 minutes, holding eyelids open. Seek medical assistance if necessary.</p> <p>If patient is fully conscious, give two glasses of water to drink. Do not induce vomiting unless told to do so by the poison control centre or doctor. Do not give milk, oily products, fat or alcohol. Do not give anything to an unconscious person. Seek medical assistance immediately.</p> <p>Itching, scratchy throat, sneezing and coughing. Accidental ingestion has caused nausea, vomiting, diarrhoea, headache, ataxia, confusion and fatigue.</p> <p>No specific antidote known. Treat symptomatically. If swallowed, induce vomiting with SYRUP OF IPECAC or INTUBATE the stomach. If reaction with alcohol occurs, treat as disulfiram-alcohol reaction. Thiram is not a member of the ethylene(bis)dithiocarbamate (EBDC) chemical family, and thus should not generate ethylene thiourea (ETU).</p>
5) FIRE-FIGHTING MEASURES:	
<p>Extinguishing Media:</p> <p>Unsuitable Extinguishing Media:</p> <p>Specific Hazards arising from the substance/mixture:</p> <p>Fire Fighting:</p> <p>Protective clothing:</p>	<p>Carbon dioxide, dry chemical powder, or alcohol-resistant foam. Water spray can be used for cooling of unaffected stock, but avoid water coming in contact with the product.</p> <p>High volume water jet due to contamination risk.</p> <p>Fire may produce irritating or poisonous gasses or vapors, such as oxides of carbon and oxides of nitrogen.</p> <p>Remove spectators from surrounding area. Isolate the fire area and evacuate downwind. Use a recommended extinguishing agent for the type of surrounding fire. Fight fire from maximum distance and use unmanned hose holder or monitor nozzles. Contain fire control agents for later disposal. Avoid inhaling hazardous vapours and fumes from burning materials. Keep upwind. Remove container from fire area if possible and without risk. Water can be used to cool unaffected containers but must be contained for later disposal. Do not scatter the burning material. Avoid pollution of waterways by run-off from the site.</p> <p>Full protective clothing and self-contained breathing apparatus.</p>
6) ACCIDENTAL RELEASE MEASURES:	
<p>Personal precautions, protective equipment and emergency procedures:</p> <p>Environmental precautions:</p>	<p>Avoid contact with spilled product or contaminated surfaces. Avoid contact with skin and eyes. Do not swallow. Do not breathe in dust or fumes. Clear the area and shut off the source of the leak only under safe conditions. Extinguish any sources of ignition nearby and downwind. Ensure adequate ventilation. For personal protection see Section 8.</p> <p>Prevent further leakage or spillage if safe to do so. Do not flush into surface water or sanitary sewer system. Do not allow to enter drains or watercourses. If contamination of water</p>

Gloves:	pesticides is required. Limitations of the respirator specified by the approving agency and the manufacturer must be observed.
Eye protection:	Employee must wear appropriate chemical-resistant gloves to prevent prolonged, direct contact with this substance.
Emergency eye wash:	Wear a face shield when handling the concentrate or when applying the product. The use of safety goggles with side shields is recommended if a face shield is not available.
	Where there is any possibility that an employee's eyes may be exposed to this substance, the employer should provide an eye wash fountain or appropriate alternative within the immediate work area for emergency use.
9) PHYSICAL & CHEMICAL PROPERTIES:	
Appearance:	Cream white powder
Odour:	Characteristic odour
Solubility:	Suspends in water
pH:	6.5 – 8.5
Odour threshold:	Not available
Melting point / Freezing point	144 - 146 °C (Thiram TC)
Initial boiling point and boiling range	Not available
Flash point:	Not flammable
Evaporation rate:	Not available
Flammability (solid, gas)	Not flammable
Upper/ lower flammability or explosive limits:	Not explosive
Vapour pressure:	Not available
Vapour density:	Not available
Relative density:	1.00
Partition coefficient: n-octanol/water	K _{ow} 1.84 (Thiram TC)
Auto-ignition temperature:	Not available
Decomposition Temperature:	Not available
Viscosity:	Not available
10) STABILITY & REACTIVITY:	
Reactivity:	No hazardous reactions if stored and handled as indicated.
Chemical Stability:	When stored appropriately this product should show no significant degradation for 2 years from the date of manufacture.
Possibility of hazardous reactions:	Polymerization will not occur.
Conditions to avoid:	Avoid prolonged exposure to heat, air or moisture.
Incompatible materials:	Avoid oxidizing and nitrating materials, strong acids and strong alkaline materials.
Hazardous decomposition product(s):	Formation of toxic oxides of carbon and nitrogen and fumes that cause irritation.
11) TOXICOLOGICAL INFORMATION:	
Acute Toxicity:	
Oral:	LD ₅₀ >5 000 mg/kg
Dermal:	LD ₅₀ >5 000 mg/kg
Inhalation:	LC ₅₀ 3.46 mg/L (female), >5.04 (male) (4h)
Skin Corrosion/Irritation:	Moderately irritating
Serious Eye Damage/Irritation:	Moderately irritating
Respiratory or Skin Sensitization:	Mild dermal sensitization
Germ Cell Mutagenicity:	Thiram has been found to be mutagenic in some test organisms but not in others. The evidence is thus inconclusive.
Carcinogenicity:	Data indicate that thiram is not carcinogenic.
Reproductive Toxicity:	Data suggest that reproductive effects occur at high doses but is not likely to be experienced by humans.
STOT-SE:	No data available
STOT-RE:	May cause damage to organs through prolonged or repeated exposure. Studies have shown evidence of damage to the

	liver in the form of decreased liver enzyme activity and increase liver weight. Thiram may also cause damage to the nervous system, blood and kidneys.
Aspiration Hazard:	No data available
12) ECOLOGICAL INFORMATION:	
Ecotoxicity:	
Birds:	Acute oral LD ₅₀ for bobwhite quail 930, male ring-necked pheasants 673, mallard ducks >2800, starlings >100, redwing blackbirds >100 mg/kg. Dietary LC ₅₀ (5 d) for ring-necked pheasants >5000, mallard ducks >5000, bobwhite quail >3950, Japanese quail >5000 mg/kg diet.
Fish:	LC ₅₀ (96 h) for bluegill sunfish 0.13, channel catfish 0.233, rainbow trout 0.171, sheepshead minnows 0.54. fathead minnows 0.188, guppies 0.216 mg/l.
Daphnia:	EC ₅₀ (48 h) 0.139 mg/l.
Algae:	E ₅₀ (72 h) for <i>Pseudokirchneriella subcapitata</i> >0.141 mg/l.
Worms:	LC ₅₀ (14 d) for earthworms 540 mg/kg soil.
Bees:	>107 (oral), >100 (contact) µg/bee.
Persistence and Degradability:	Low to moderate persistence. DT ₅₀ (aerobic) 4.8 days (20 °C, mean 4 soils). Thiram degrades more rapidly in acidic soils and in soils high in organic matter.
Bio-accumulative Potential:	No data available.
Mobility in Soil:	Nearly immobile in clay soils or soils that is high in organic matter. It only slightly soluble in water and has a strong tendency to absorb to soil particles. Thiram is not expected to contaminate groundwater.
13) DISPOSAL CONSIDERATIONS:	
Waste Disposal:	In accordance with local and national regulations. Must be incinerated in a suitable incineration plant holding a permit delivered by the competent authorities. Do not contaminate water, food or feed by disposal. Wastes resulting from the use of this product cannot be reused and may be disposed of on site or at an approved chemicals waste disposal facility. Open burning or burning of this pesticide is prohibited.
Container Disposal:	Refer to the product label for instructions. Empty the container of excess product by emptying it over or into mixing tank. Destroy the empty container by perforation and flattening and dispose of it in a safe manner according to local regulations. DO NOT REUSE THE CONTAINER FOR ANY OTHER PURPOSE. Do not burn the empty container. Do not transport if this container is damaged or leaking.
14) TRANSPORTATION INFORMATION:	
Road Transport ADR / IRD:	UN NUMBER: 3077 UN Proper Shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Thiram 75%) Transport Hazard Class: 9 Miscellaneous Dangerous Goods Packaging group: III Labelling no: 9 Environmental Hazards: Not applicable Special Precautions for User: Read safety instructions, SDS and emergency procedures before handling.
Maritime Transport IMDG / IMO:	UN NUMBER: 3077 UN Proper Shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Thiram 75%) Transport Hazard Class: 9 Miscellaneous Dangerous Goods Packaging group: III Labelling no: 9 Environmental Hazards: Marine Pollutant Special Precautions for User: Read safety instructions, SDS and emergency procedures before handling.
Air Transport ICAO / IATA:	UN NUMBER: 3077 UN Proper Shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Thiram 75%) Transport Hazard Class: 9 Miscellaneous Dangerous Goods Packaging group: III Labelling no: 9

	Environmental Hazards: Not applicable Special Precautions for User: Read safety instructions, SDS and emergency procedures before handling.
Transport in Bulk (according to Annex II of MARPOL 73/78 and the IBC Code):	Not applicable
15) REGULATORY INFORMATION:	
Safety, health and environmental regulations/legislation specific for the substance/mixture:	For the user of this plant-protective product applies: 'To avoid risks to man and the environment, comply with the instructions for use.' (Directive 1999/45/EC, Article 10, No. 1.2)
Chemical Safety Assessment:	Advice on product handling can be found in sections 7 and 8 of this safety data sheet.
16) OTHER INFORMATION:	
<p>All information and instructions provided in this Safety Data Sheet (SDS) are based on the current state of scientific and technical knowledge at the date indicated on the present SDS and are presented in good faith and believed to be correct. This information applies to the product as such. In case of new formulations or mixes, it is necessary to ascertain that a new danger will not appear.</p> <p>It is the responsibility of persons in receipt of this SDS to ensure that the information contained herein is properly read and understood by all people who may use, handle, dispose or in any way come in contact with this product. If the recipient subsequently produces formulation(s) containing this product, it is the recipient's sole responsibility to ensure the transfer of all relevant information from this SDS to their own SDS. The information contained herein is provided in good faith but makes no representation as to its comprehensiveness or accuracy. A properly trained person using this product intends this document only as a guide to the appropriate handling of the material. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose.</p> <p>MERIDIAN AGRITECH MAKES NO REPRESENTATION OR WARRANTIES, EITHER EXPRESSES OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OF MERCHANT ABILITY, FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE INFORMATION SET FORTH HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS. ACCORDINGLY, MERIDIAN AGRITECH (PTY) LTD WILL NOT BE RESPONSIBLE FOR DAMAGES RESULTING FROM USE OF OR RELIANCE UPON THIS INFORMATION.</p> <p>Date of issue: 23/03/2018</p> <p>Abbreviations and acronyms:</p> <ol style="list-style-type: none"> 1. CAS number: Chemical Abstracts Service number. 2. CLP: Classification, Labelling, Packaging. 3. LD₅₀: Lethal Dose for 50% of the test population. 4. LC₅₀: Lethal Concentration for 50% of the test population. 5. DT₅₀: Half-life. 6. GHS: Globally Harmonised System (of Classification and Labelling of Chemicals). 7. STOT-RE: Specific Target Organ Toxicity-Repeated Exposure 8. STOT-SE: Specific Target Organ Toxicity-Single Exposure <p>Literature References:</p> <ul style="list-style-type: none"> • GHS: www.ccohs.ca/oshanswers/chemicals/ghs.html • ECHA: https://echa.europa.eu/search-chemicals 	