

1,3-DICHLOROPROPENE

A liquid soil fumigant for the control of
plant parasitic nematodes in tobacco

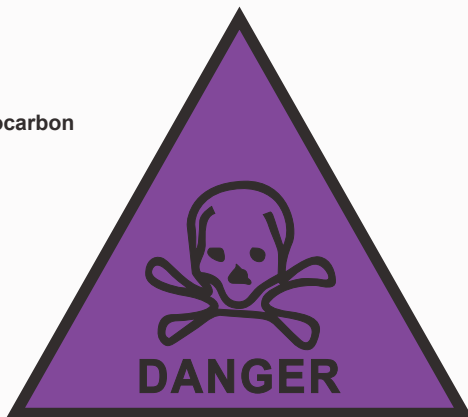
Reg. No.

<u>Composition:</u>	<u>mass/volume</u>
1,3 Dichloropropene	1 110g/L
Inert ingredients	to 1 Litre

Chemical Group: Halogenated hydrocarbon

58 Litres Net

Supplied by Maguires
A member of



VERY DANGEROUS POISON

HARMFUL BY SKIN ABSORPTION
HARMFUL VAPOUR

**TO CAUSE A HAZARD IN THE USE, STORAGE OR
DISPOSAL OF THIS SUBSTANCE IS AN OFFENCE.**

KEEP OUT OF REACH OF CHILDREN



1. Triple rinse clean container after use
2. Punctures holes in bottom
3. Return to Maguires Recycling Facilitator / Return to nearest recycling facility

Registration held by:

MAGCHEM (PVT) LIMITED
2274 TILBURY ROAD,
WORKINGTON, HARARE,
ZIMBABWE

SAFETY PRECAUTIONS:

1. Avoid inhalation of vapour and direct contact with skin or clothing.
2. Wear full protective clothing while handling the product: plastic overall, plastic covered boots, thick plastic gloves and face shield or appropriate cartridge respirator for protection against organic vapours.
3. Do not eat, drink or smoke while applying this product.
4. Do not eat, pour, spill or store near heat or an open flame.
5. Application should only be carried out with approved applicators in sound condition.
6. Apply under supervision.
7. Stand upwind of the applicator when decanting or pouring the product.
8. Ensure that containers are securely sealed before, during and after handling the product.
9. Containers should be tightly closed and stored under lock and key in a well-ventilated area away from dwellings and foodstuffs.
10. Keep out of reach of children, unformed persons, and animals.
11. Destroy empty containers in a responsible manner and DO NOT use for any other purpose.

SYMPTOMS OF POISONING:

The symptoms may include nausea, dizziness, headache, unusual fatigue, blurred vision, slurred speech, staggering walk, irritation of eyes and mucous membranes, irritation or blistering of the skin, vomiting, rapid pulse, convulsions, and coma.

FIRST AID:

IMMEDIATELY obtain medical advice / treatment if any of the above symptoms occur. Immediately remove contaminated clothing and shoes in case of contact. Flush eyes with flowing water for at least 15 minutes if eyes are contaminated. Remove the patient to fresh air, facing downward with head slightly below the level of the lungs. Keep the patient warm and reassured. Give artificial respiration if breathing has stopped. If swallowed, call a doctor immediately. Induce vomiting by giving an emetic such as 2 tablespoons of table salt in a glass of warm water.

NOTE TO PHYSICIAN:

Perform cautious gastric lavage if the liquid has been ingested. DO NOT ADMINISTER fats or oils. Give a demulcent like Alumina gel. Mepiridine and Atropine are indicated for control of pain and gastrointestinal spasm. In severe cases continuous suction by nasogastric tube should be considered. The possibility of glottic edema should be kept in mind. The administration of Corticosteroids or ACTH as an aid in the prevention of oesophageal stricture is recommended. Treat symptomatically and supportive according to clinical signs. In case of inhalation, removal from source of poisoning usually suffices. 1% Epinephrine or 0.25 % Isoproterenol may be useful in the case of over exposure.

Date of Manufacture:**Batch No.:****DIRECTIONS FOR USE IN TOBACCO LANDS:**

It is extremely important to prepare the soil properly before treatment. For best results, soil should be damp and in a good tilth condition, free from undecayed vegetable matter. Lands should be fumigated 14 days before planting. It may be necessary to wait 3-4 weeks on heavy or wet soils. The recommended depth of application is 350 mm below the top of the ridge.

USE UNDILUTED

APPLICATION METHOD	DOSAGE RATE
INJECTOR	Lands: 60 lt/ ha. Inject 4 ml / planting station. Seal holes after application.
MECHANICAL	Mechanical: 50 lt/ ha. Apply 600 ml per 100 m ridge at 1.2 m spacing at ridging.

WARNING:

- When not used according to label instructions, the product may kill certain plants and therefore should not be applied in the vicinity of roots of growing plants or trees.
- Ensure that components of application equipment made from Rubber or PVC are replaced with Nylon, Polypropylene or Polyethylene as Rubber and PVC are readily destroyed by 1,3 Dichloropropene.
- Do not use containers or equipment containing aluminium, magnesium or their alloys.

-IMPORTANT: Fumigation may temporarily raise the level of ammonium nitrogen and soluble salts in the soil. This most likely occur when heavy rates of fertilizer and fumigants are applied to soils that are either cold, wet, acid or high in organic matter. To avoid injury to plant roots, fertilize as indicated by soil tests made after fumigation. To avoid ammonia injury or nitrate starvation, or both, to crops on high organic soils, do not use fertilizers containing ammonium salts and use only fertilizers containing nitrates, until after the crop is well established and the soil temperature is above 18 °C (65 °F).

WARRANTY:

The excellent results which this chemical should normally yield are not however warranted or guaranteed, as effectiveness can be greatly influenced by factors outside the control of either the manufacturers or the suppliers. No warranty whatsoever is therefore, express or implied, is therefore given concerning the performance or effectiveness of this chemical and responsibility is specifically excluded for any damage, injury or loss of any kind during or resulting from its handling, use or storage.

SHELF LIFE: A minimum of 2 years under cool, constant conditions.

Supplied by:
Avima (Pty) Ltd 18 Aschenberg
Street, Chamdor,
Krugersdorp, South Africa
Tel: +27 11 769 1300

1,3 DICHLOROPROPENE 1170G/L

MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT

Common Name: 1,3-Dichloropropene

Chemical Name: 1,3-dichloro-1-propene

CAS No.: 542-75-6

2. COMPOSITION/INFORMATION ON INGREDIENTS

Composition	CAS No.	Content w/v
1,3-Dichloropropene	542-75-6	97.0.
Other ingredients	-----	3.0

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Light to straw-amber colored liquid with a pungent odor.

May cause severe eye irritation with corneal injury. May cause skin irritation, even a burn.

Toxic to aquatic organisms. Regulated under PMN 88-608.

4. FIRST AID MEASURES

EYE: Wash immediately and continuously with flowing water for at least 30 minutes. Remove contact lenses after the first 5 minutes and continue washing. Obtain prompt medical consultation, preferably from an ophthalmologist.

SKIN: Take off contaminated clothing. Wash skin with soap and plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice. Wash clothing before reuse. Shoes and other leather items which cannot be decontaminated should be disposed of properly.

INGESTION: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Never give anything by mouth to an unconscious person.

INHALATION: Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, and then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask, etc.). If breathing is difficult, oxygen should be administered by qualified personnel.

NOTE TO PHYSICIAN: Because rapid absorption may occur through the lungs if aspirated and cause systemic effects, the decision of whether to induce vomiting or not should be made by a physician. If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. Maintain adequate ventilation and oxygenation of the patient. Excessive exposure may aggravate pre-existing lung, liver, and kidney disease. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Have the MSDS, and if available, the product container or label with you when calling a poison control center or doctor, or going for treatment.

5. FIRE FIGHTING MEASURES

FLASH POINT: 83°F (28°C)

METHOD USED: TCC

FLAMMABLE LIMITS: LFL: 5.3% @ 80°C

UFL: 14.5% @ 80°C

EXTINGUISHING MEDIA: Water spray, foam, alcohol foam, CO₂, dry chemical. **FIRE AND EXPLOSION HAZARDS:** Toxic, irritating vapors may occur under fire conditions. Keep vapors away from possible ignition sources.

FIRE-FIGHTING EQUIPMENT: Use positive-pressure, self-contained breathing apparatus and special protective clothing, including heavy neoprene or rubber boots and neoprene gloves.

6. ACCIDENTAL RELEASE MEASURES

ACTION TO TAKE FOR SPILLS/LEAKS: If possible, put the container into an overpack. Cover or confine the leakage with an absorbent such as diatomaceous earth, clay, sand, or other non-combustible absorbent material. Collect the spent absorbent material in a disposal drum. If the spill is on the ground, dig up enough of the soil to eliminate the contamination and place the soil in a disposal drum.

7. HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

HANDLING: Keep out of reach of children. The use of this product may be hazardous to your health. This product contains 1,3-dichloropropene, which has been determined to cause tumors in laboratory animals. Risks can be reduced by exactly following directions for use, precautionary statements, and by wearing the personal protective equipment specified on the label.

STORAGE: Store in tightly closed original container in a cool place away from dwellings. Do not allow contamination of seeds, plants, fertilizers or other pesticide chemicals. Do not contaminate food, feedstuffs, drugs, or domestic water supplies.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

These precautions are suggested for conditions where a potential for exposure exists.

Emergency conditions may require additional precautions.

EXPOSURE GUIDELINES:

1,3-Dichloropropene: ACGIH TLV is 1 ppm, Skin, A3. A 'skin' notation following the exposure guideline refers to the potential for dermal absorption of the material including mucous membranes and the eyes either by contact with vapors or by direct skin contact. It is intended to alert the reader that inhalation may not be the only route of exposure and that measures to minimize dermal exposures should be considered.

ENGINEERING CONTROLS: Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines. Lethal concentrations may exist in areas with poor ventilation.

RECOMMENDATIONS FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS:

EYE/FACE PROTECTION: Use chemical goggles. Eye wash fountain should be located in the immediate work area. If exposure causes eye discomfort, use a NIOSH approved full-face respirator.

SKIN PROTECTION: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, gloves, boots, apron, or full body suit will depend on operation. Safety shower should be located in the immediate work area. Remove contaminated clothing immediately,

wash skin area with soap and water, and launder clothing before reuse. Items, which cannot be decontaminated, such as shoes, belts, and watchbands, should be removed and disposed of properly. **RESPIRATORY PROTECTION:** Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required use a NIOSH approved self-contained breathing apparatus or positive pressure airline with auxiliary self-contained air supply. For emergency and conditions where the exposure guideline may be exceeded, use a NIOSH approved positive-pressure self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply. In confined or poorly ventilated areas, use a NIOSH approved self-contained breathing apparatus or positive pressure airline with auxiliary self- contained air supply.

APPLICATORS AND ALL OTHER HANDLERS: Refer to the product label for personal protective clothing and equipment.

9. PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT: Approximately 220°F, 104°C

SOLUBILITY IN WATER: Approximately 0.1%

SPECIFIC GRAVITY: 1.20 @ 25°C, 77°F

VAPOR PRESSURE: 28 mm/Hg @ 20°C, 68°F

APPEARANCE: Light to straw-amber colored liquid

ODOR: Pungent, sweet penetrating odor.

10. STABILITY AND REACTIVITY

STABILITY (CONDITIONS TO AVOID): May form explosive mixtures with air when confined.

INCOMPATIBILITY (SPECIFIC MATERIALS TO AVOID):

Corrosive to some metals. Do not use containers or equipment containing aluminum, magnesium, zinc, cadmium, or their alloys. Avoid strong bases. HAZARDOUS DECOMPOSITION

PRODUCTS: Hydrogen chloride and other toxic, irritating gases may be formed if product is involved in fire.

HAZARDOUS POLYMERIZATION: Not known to occur.

11. TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS: This section includes possible adverse effects, which could occur if this material is not handled in the recommended manner. **EYE:** May cause severe eye irritation with corneal injury, which may result in permanent impairment of vision, even blindness. Chemical burns may occur. Vapor may cause lacrimation (tears). Vapor may cause eye irritation experienced as mild discomfort and redness.

SKIN: Brief contact may cause skin irritation with local redness. Prolonged or repeated exposure may cause skin irritation, even a burn. Prolonged or widespread skin contact may

result in absorption of harmful amounts. The LD50 for skin absorption in rabbits for similar material is 333 mg/kg. Animal data indicate that 1,3-Dichloropropene is a potential skin sensitizer.

INGESTION: Moderate toxicity if swallowed. Based on information for a similar material, the oral LD50 for rats is expected to be >224 mg/kg. Small amounts swallowed incidental to normal handling operations is not likely to cause injury; however, swallowing larger amounts may cause serious injury, even death. Aspiration into the lungs may occur during ingestion or vomiting, resulting in rapid absorption and injury to other body systems.

INHALATION: Easily attainable vapor concentrations may cause serious adverse effects, even death. Excessive exposure may cause headache, dizziness, anesthesia, drowsiness, unconsciousness, and other central nervous system effects, including death. Excessive exposure may cause irritation to upper respiratory tract (nose and throat) and lungs.

SYSTEMIC (OTHER TARGET ORGAN) EFFECTS: Effects have been reported on the following organs: bladder, blood, kidney, liver, respiratory tract and stomach.

CANCER INFORMATION: 1,3-Dichloropropene is listed as a potential carcinogen for hazard communication purposes under OSHA Standard 29 CFR 1910.1200. 1,3- Dichloropropene has been shown to cause cancer in laboratory animals by the oral route. Inhalation exposure resulted in an increase in the normal occurrence of benign lung tumors in male mice.

TERATOLOGY (BIRTH DEFECTS): 1,3-Dichloropropene did not cause birth defects or any other fetal effects in laboratory animals.

REPRODUCTIVE EFFECTS: 1,3-Dichloropropene did not interfere with reproduction in animal studies.

MUTAGENICITY (EFFECTS ON GENETIC MATERIAL):

For the active ingredient, 1,3-Dichloropropene, in-vitro genetic toxicity studies were negative in some cases and positive in other cases. Animal genetic toxicity studies were negative.

12. ECOLOGICAL AND ECOTOXICOLOGICAL INFORMATION

ENVIRONMENTAL FATE: MOVEMENT & PARTITIONING:

Based largely or completely on data for major component(s).

Potential for mobility in soil is very high (Koc is between 0 and 50). Bioconcentration potential is low (BCF <100 or Log Pow <3).

DEGRADATION & PERSISTENCE:

Based largely or completely on data for a similar material. Degradation is expected in the atmospheric environment within days to weeks.

ECOTOXICOLOGY:

Based largely or completely on data for a similar material. Material is highly toxic to aquatic organisms on an acute basis (LC50 or EC50 is between 0.1 and 1 mg/L in the most sensitive species tested).

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national and local laws and regulations.

14. TRANSPORT INFORMATION

Proper Shipping Name: PESTICIDES, LIQUID, TOXIC,FLAMMABLE, N.O.S. Technical Name: 1,3-DICHLOROPROPENE

Hazard Class: 3 ID Number: UN 2047

Packing Group: PG II

DOT Bulk

Proper Shipping Name: PESTICIDES, LIQUID, TOXIC,FLAMMABLE, N.O.S. Technical Name: 1,3-DICHLOROPROPENE

Hazard Class: 3 ID Number: UN2047

Packing Group: PG II

IMDG

Proper Shipping Name: PESTICIDES, LIQUID, TOXIC,FLAMMABLE, N.O.S. Technical Name: 1,3-DICHLOROPROPENE

Hazard Class: 3

ID Number: UN2047

Packing Group: PG II

EMS Number: F-E, S-D

Marine Pollutant: No

ICAO/IATA

Proper Shipping Name: PESTICIDES, LIQUID, TOXIC, FLAMMABLE, N.O.S. Technical Name: 1,3-DICHLOROPROPENE

Hazard Class: 3 ID Number: UN 2047

Packing Group: PG II

Cargo Packing Instruction: 611

Passenger Packing Instruction: 609

Additional Information: Reportable Quantity – 1,3-DICHLOROPROPENE

15. REGULATORY INFORMATION

U.S. REGULATIONS

SARA 313 INFORMATION: This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372: CHEMICAL NAME CAS NUMBER CONCENTRATION

1,3-Dichloropropene 542-75-6 93.6% TRANS-1,3-D 10061-02-6 ~43.0%

SARA HAZARD CATEGORY: This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

An immediate health hazard

A delayed health hazard

A fire hazard

CALIFORNIA PROPOSITION 65: The following statement is made in order to comply with the California Safe Drinking Water and Toxic Enforcement Act of 1986: This product contains a chemical(s) known to the State of California to cause cancer. The chemical is 1,3-Dichloropropene (CAS # 542-75-6) CONSENT ORDER FOR PMN (UNITED STATES)

In the United States, a component of this material, cis-1,3- dichloro-propene (DR-0019-3180), was reviewed by the Environmental Protection Agency under PMN 88-608. There was no resulting consent order. However, EPA is concerned that, based on an analogous chemical structure, this PMN material may cause oncogenicity, mutagenicity, neurotoxicity, and developmental toxicity and may result in unreasonable risk to unprotected workers. The EPA strongly recommends that, to mitigate inhalation exposure, workers should wear a NIOSH approved respirator and to mitigate dermal exposure, should wear adequate protective clothing which covers any exposed parts of the body, impervious gloves, and chemical safety goggles or equivalent.

TOXIC SUBSTANCES CONTROL ACT (TSCA): All ingredients are on the TSCA inventory or are not required to be listed on the TSCA inventory.

STATE RIGHT-TO-KNOW: The following product components are cited on certain state lists as mentioned. Non-listed components may be shown in the composition section of the MSDS.

CHEMICAL NAME CAS NUMBER LIST

1,3-Dichloropropylene 542-75-6 PA1 PA2 PA3

PA1=Pennsylvania Hazardous Substance (present at greater than or equal to 1.0%).

PA2=Pennsylvania Special Hazardous Substance (present at greater than or equal to 0.01%).

PA3=Pennsylvania Environmental Hazardous Substance (present at greater than or equal to 1.0%).

OSHA HAZARD COMMUNICATION STANDARD: This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) RATINGS:

Health 3

Flammability 3

Reactivity 0

COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY ACT (CERCLA, or SUPERFUND): This product contains the following substance(s) listed as "Hazardous Substances" under

CERCLA, which may require reporting of releases:

Chemical Name	CAS#	RQ %	in Product
1,3-Dichloropropene	542-75-6	100 lb.	1170g/L

16. OTHER INFORMATION

This MSDS summarizes 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 should read this MSDS and consider the information in the context of how the product will be handled and used in the workplace including in conjunction with other products. If clarification or further information is needed to ensure that an appropriate risk assessment can be made, the user should contact this company. 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.