Dilone AL

SAFETY DATA SHEET

1. PRODUCT & COMPANY IDENTIFICATION

Product Name: Dilone AL

Pesticide Classification: Insecticide (Fumigant)

UN No.: 2047

Supplier	**Registration Holder**
Enviro Bio-Chem (Pty) Ltd	Erintrade CC t/a RT Chemicals
Co. Reg. No.: 2013/194774/07	Co. Reg. No.: CK2001/036403/23
44 Kerk Street, Lichtenburg	44 Kerk Street, Lichtenburg
North West, South Africa 2740	North West, South Africa 2740

Telephone: +27 87 231 7261

Fax: 086 541 7948

Website: www.envirobiochem.co.za

24 Hr Emergency Number: Bateleur: +27 83 123 3911

In case of Poisoning:

Poison Information Centre: +27 82 446 8946

Tygerberg Hospital: (+27 21) 931 6129

Poison Emergency Enquiries: (+27 21) 689 5227

Common Name: 1,3-dichloropropene 1 100 g/ℓ AL

Chemical Name: 1,3-dichloropropene [a ratio of (Z) and (E) isomers]

Empirical Formula: $C_3H_4C\ell_2$

CAS No.: 542-75-6

RSA Reg. No.: L8936 Act 36 of 1947

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2. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient Name	Concentration
1,3-Dichloropropene	1 100 g/ℓ min.

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3. HAZARD IDENTIFICATION

Hazard Class: WHO Class Ib -Highly hazardous.

Main Hazard: Hazardous product for human health and the aquatic environment.

Flammability: Flammable

Chemical Hazard: Releases dangerous vapours.

Biological Hazard: Hazardous product for the aquatic environment.

4. FIRST AID MEASURES AND PRECAUTIONS

If poisoning is suspected, do not wait for symptoms to develop. Contact a physician, the nearest hospital or the nearest Poison Control Centre.

Symptoms of Human Poisoning: Symptoms in case of eye contact include severe redness, watering, corneal burn or severe eye irritation. Risk of lesions.

This product can be absorbed through the skin resulting in redness of the skin, swelling of the skin and moderate irritation. There is a risk of skin burn. Symptoms for repeated skin contact are dry and chapped skin, as well as risk of chronic and allergic dermatitis.

Symptoms for inhalation include nose and throat irritation. Symptoms for exposure to high concentrations may be delayed and can include coughing, breathing difficulties, feelings of intoxication, restlessness, dizziness, nausea, vomiting and drowsiness. There is also a risk of chemical pneumonitis and pulmonary oedema. Repeated or prolonged exposure may lead to headaches, fatigue and also the risk of liver and renal effects.

Symptoms for ingestion include severe irritation to mouth, throat, oesophagus and stomach. Further symptoms include nausea, vomiting, abdominal cramps, diarrhea, feelings of intoxication, restlessness, dizziness and drowsiness. The patient's breath may also smell of chloroform and there is a risk of convulsions, loss of consciousness as well as liver and kidney alterations.

First Aid Measures:

Skin Contact: Remove contaminated clothing and flush skin with clean water for at least 15 minutes. If no water is present the excess product should be removed with absorbent material and then proceed immediately to where water is available and flush for at least 15 minutes. Wash the contaminated clothing after use and before re-use. Get medical attention if irritation persists.

Eye Contact: Flush eyes with clean water for at least 15 minutes. Remove contact lenses after 2 to 3 minutes rinsing. Get medical attention (ophthalmologist) immediately after flushing.

Ingestion: Rinse mouth with clean water. Do not give anything to the patient to drink. Do not induce vomiting. Get the patient to a medical facility immediately. If the patient exhibits nervous, respiratory or cardiovascular disorders administer oxygen.

Inhalation: Remove the patient from the contaminated area to fresh air. Keep the head higher than the body. Give artificial respiration (mouth to mouth) or cardiopulmonary resuscitation if the patient is not breathing. Give oxygen if breathing is difficult. Keep the patient warm and get medical attention immediately.

Advice to Physician: Treat symptomatically as for chlorinated hydrocarbon toxicity. Do not give adrenergic drugs.

Antidote: There is no specific antidote for poisoning with this product.

5. FIRE FIGHTING MEASURES

Flammability: Flammable

Extinguishing Agents: Powder, water spray, foam or CO_2.

Firefighting: Evacuate all non-essential personnel. Firefighters must wear fire resistant personal protective equipment. Wear self-contained breathing apparatus when in close proximity or in confined spaces. Protect intervention team with water spray when approaching the fire. Intervention only by capable personnel who are trained and aware of the hazards of the product. If safe to do so, remove the exposed containers or cool containers with large quantities of water. Disperse gas/vapours with water spray. Flood the product with water. Avoid propagating the fire when directing the extinguishing means in a jet on the surface of the burning liquid.

Special Hazards: Gas/vapours are heavier than air and so may travel along the ground. Remote ignition is possible. Formation of dangerous gas/vapours in case of decomposition.

6. ACCIDENTAL RELEASE MEASURES (SPILLAGE)

Personal Precautions: If safe to do so, without over exposing any personnel, stop any leak. Eliminate all sources of ignition and do not generate flames or sparks. Wear self-contained breathing apparatus in confined spaces or in the case of significant emissions. Ventilate the premises.

Environmental Precautions: Prevent spilled material from entering drains or watercourses. Contain spill and absorb with earth, sand, clay or another absorbent material.

Spills: Remove the product with an inert absorbent (sand, kieselguhr, vermiculite, sawdust). If possible, dam large quantities of liquid with sand or earth. Place all contaminated material into a closed, labelled container compatible with the product. To prevent further contamination, the collected material should be isolated in a secure place. For disposal methods, refer to section 13.

7. HANDLING AND STORAGE REQUIREMENTS

Handling: Carry out all operations in closed piping circuits and equipment. Do not use compressed air for transferring or handling the product. Preferably transfer by pump or gravity. Purge piping circuits and equipment with nitrogen. Do not permit open flames or sparks and enforce no smoking near this product. Ensure that electrical equipment is safe for hazardous locations. Ensure that electrical equipment is grounded. Warn people about the dangers of the product.

Storage: Store in a well ventilated, cool dry area. Protect from direct sunlight. Keep away from reactive products. Keep away from ignition and heat sources. Install containment bund around storage containers and transfer installations.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

Exposure Limits: TWA = 1 ppm. TWA = 4,5 mg/m^3

Engineering Controls: Ensure good premises ventilation. Provide local ventilation suitable for the emission risk. Maintain employee exposures to levels below the applicable exposure limits.

Personal Protective Equipment:

Clothing: Long-sleeved shirt, long pants, shoes plus socks, protective waterproof (impermeable) gloves. Employee must wear appropriate protective clothing and equipment to prevent prolonged skin contact with this product. Wear an overall, an apron and boots of neoprene if there is a risk of splashing.

Gloves: Recommended materials for protective gloves are polyvinyl alcohol and viton.

Eye Protection: Wear eye protection. During mixing or pouring operations or other activities in which eye contact with undiluted product is likely to occur, splash goggles should be worn. 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.

Respiratory: In the case of application and emissions use a face mask with type A cartridge. Use a self-contained breathing apparatus in confined areas, in case of insufficient oxygen, in case of large uncontrolled emissions or in all circumstances when the mask and cartridge do not give adequate protection.

Other Protection: Do not eat, drink or smoke while handling this product. Prevent contamination of food, feeds, drinking water and eating utensils. After using this product wash hands and face before eating. Take extreme care to avoid drift. Wash accurately (preferably a shower) after work shift. Wash hands during breaks and at the end of the work with soap and water.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Slight yellow liquid.

Odour: Chloroform

Freezing Point: -60 ˚C

Boiling Point/range (1013 mbars): 103~110˚C

Flash Point: 25-28 ˚C (closed cup).

Flammability: Upper limit: 14,5 %(V); Lower limit: 5,3 %(V),

Vapour Pressure: 32 mbar (at 20 ˚C).

Specific Gravity: 1.225

Vapour Density (air=1): 3.8 (Pure vapour).

Solubility in Water: 2.8 g/l (at 20 °C).

Solubility in Organic Solvents: Greases

pH: Neutral (aqueous extract).

Partition Coefficient P (n-octanol/water): log P_{ow} 1,41(Cis) ; log P_{ow} 1,63(Trans) ; log P_{ow} 1,98.

Viscosity: 0,78 mPa.s

Decomposition Temperature: > 108 °C [≤ 500 °C]

Danger of Explosion: Explosion possible with gas/vapour and air mixtures.

Oxidizing Properties: Negligible

10. STABILITY AND REACTIVITY

Stability: Stable under certain conditions (see below). Decomposition produces dangerous gases upon contact with flames or hot metallic surfaces.

Conditions to Avoid: Direct sunlight and naked flames and sparks must be avoided.

Incompatible Materials: Incompatible with oxidizing agents, light metals, salts of metals and metallic alloys. Plastic materials may deteriorate on contact with the product.

Decomposition Products: Carbon monoxide, hydrochloric acid and phosgene may form.

11. TOXICOLOGICAL INFORMATION

Acute toxicity based on the active ingredient toxicity.

Acute Oral LD_{50} (rat): 127 mg/kg. Toxic effect by oral route.

Acute Dermal LD_{50} (rabbit): 504 mg/kg. Harmful effect by dermal route.

Acute Inhalation LC_{50} (rat, 4 hr): 2.7 - 3.3 mg/ℓ air. Harmful effect by inhalation.

Skin and Eye Irritation (rabbit): Corrosive to skin and eyes. Causes irritation.

Skin Sensitization (guinea pig): The product is a skin sensitizer.

Chronic Dietary Study: Target organ (various species) are liver, kidney and central nervous system. Risk of effect on the kidney, the liver and the mucous membranes and the hematological system. Risk of the central nervous system effect.

Carcinogenicity: Can have a carcinogenic effect (oral exposure)**.** The carcinogenic effect found in animals is not demonstrated in the human.

Mutagenicity: Can have a mutagenic effect (in vitro).

Reproductive Hazard: No effect on reproduction.

12. ECOLOGICAL INFORMATION

Ecotoxicity is based on the active ingredient toxicity.

Aquatic Toxicity Fish LC_{50} (96 hr): 3.5 mg/ℓ (*salmo gairdneri) in* fresh water; 1.08 mg/ℓ (*stizostedion vitreum) in* fresh water; 1.8 mg/ℓ (*cyprinodon variegates) in* salt water. Toxic for aquatic organisms.

Aquatic Toxicity Daphnia LC_{50} (48 hr): 6.2 mg/ℓ (*daphnia magna)* in fresh water. Very toxic to daphnia.

Aquatic Toxicity Algae EC_{50} (5 days): 4,95 mg/ℓ (*selenastrum capricornutum*) in fresh water; 1 mg/ℓ (*skeletonema costatum)* salt water. Toxic for aquatic organisms.

Avian Toxicity LD_{50} (5 days): >10 000 mg/kg (mallard duck).

Bee Toxicity LD_{50} (9 hr): >6.6 µg/bee.

Biodegradability: Weak persistence (global half-life of ca. 2 months).

Bio-accumulation: BCF 0,86 (calculated value). log P_{ow} from 1,41 - 1,98. Low bioaccumulation potential.

Mobility: Soil/sediments, log K_{OC} from 1,3 - 1,6; significant evaporation and percolation.

13. DISPOSAL CONSIDERATION

Pesticide Waste Disposal: Waste resulting from the use of this product that cannot be re-used or reprocessed should be disposed of in a landfill approved for pesticide disposal or in accordance with applicable local procedures. Comply with any local legislation applying to waste disposal. Do not contaminate water, food or feed by storage or disposal. Dispose in small quantities.

Package Product Wastes: Emptied containers retain product residues. Do not re-use product containers. Observe all labelled safeguards until container is cleaned, reconditioned or destroyed. Dispose of waste containers as hazardous waste via a licensed disposal contractor to an approved landfill.

14. TRANSPORT INFORMATION

UN. No.: 2047

Class: 3

Packaging Group: II

Proper Shipping Name: Dichloropropene

15. REGULATORY INFORMATION

Phrases **R 10-** Flammable.

R 20/21- Harmful by inhalation and in contact with skin.

R 25- Toxic if swallowed.

R 36/37/38- Irritating to eyes, respiratory system and skin.

R 43- May cause sensitization by skin contact.

R 50/53- Very toxic to aquatic organisms, may cause long term adverse effects in the aquatic environment.

Phrases **S 36/37-** Wear suitable protective clothing and gloves.

S 45- In case of accidental exposure or if you feel unwell, seek medical advice immediately (show the label where possible).

S 60- This material and its container must be disposed of as hazardous waste.

S 61- Avoid release into the environment. Refer to special instructions/Safety data sheets.

National Legislation: This product is registered under Act 36 of 1947 of the Republic of South Africa. It is a violation of South African law to use this product in any manner inconsistent with its approved labelling. Read and follow all label directions.

16. OTHER INFORMATION

Note: Read and understand all the information on the product label before using the product.

Disclaimer: The information on this sheet is not a specification; it does not guarantee specific properties. The information is intended to provide general guidance as to health and safety based upon our knowledge of the handling, storage and use of the product. It is not applicable to unusual or non-standard uses of the product, nor where instructions or recommendations are not followed.

All information is given in good faith but without guarantee in respect of accuracy, and no responsibility is accepted for errors and omissions or the consequence thereof.

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