

VILLA LINURON 500 SC

MATERIAL SAFETY DATA SHEET

1. PRODUCT & COMPANY IDENTIFICATION

Product Name: LINURON 500 SC
 Herbicide

UN No.: 3082

Supplier: Villa Crop Protection (Pty) Ltd.
 PO Box 10431
 Aston Manor, 1630, South Africa

Telephone: (011) 396 2233

Fax: (011) 396 4666

Website: www.villacrop.co.za

Emergency telephone: +27 11 396 2233
 (08:00 – 16:30)

24 Hr Emergency Numbers:

Bateleur: +27 83 1233 911 or
 (Client: Villa Crop Protection) +27 860 333 911

In case of Poisoning:

Western Cape Poisons Tel. Service +27 861 555 777
 Griffon Poison Information Centre +27 82 446 8946
 Tygerberg Hospital +27 21 931 6129

2. COMPOSITION/INFORMATION ON INGREDIENTS

Common Name: Linuron

Chemical Name: 3-(3,4-dichlorophenyl)-1-methoxy-1-methylurea
 (IUPAC)

Chemical Abstracts name: *N*-(3,4-dichlorophenyl)-*N*-methoxy-*N*-methylurea
 [330-55-2]

CAS No.:

Chemical Family: urea

Chemical Formula: C₉H₁₀Cl₂N₂O₂

Formulation: Linuron 500 g/l
 Suspension concentrate

Use / Mode of Action: Selective systemic herbicide, absorbed principally by the roots but also by the foliage, with translocation primarily acropetally in the xylem.

Hazardous Ingredient:

Inert:	Concern:	% Present
Linuron	slightly hazardous	50 %
Mono Propylene Glycol	irritating substance	5 %
other inerts	of no concern	11 %

SYMBOLS: Xn, N, Xi

RISK-PHRASE (S): R 23/24/25, 36/37/38

3. HAZARD IDENTIFICATION

Toxicity class:

WHO III (a.i.)
 Slightly hazardous.
Likely routes of exposure:
 Skin contact, ingestion, and inhalation.
Ingestion:
 Harmful when swallowed
Inhalation:
 Harmful by inhalation. May cause irritation to respiratory tract.
Eye and Skin contact:
 May cause irritation to the skin and eyes. Skin (allergic) reaction may occur. Not a skin sensitizer.

4. FIRST AID MEASURES AND PRECAUTIONS

Irritant effects on skin and mucous membrane are the most common reactions. Large ingestions can cause nausea, vomiting, abdominal distress and diarrhoea.

Inhalation:
 Immediately remove source of contamination or move victim to fresh air. If breathing has stopped, perform artificial respiration and administer oxygen. Keep person warm and at rest. Treat symptomatically and supportively as and when required. **Seek medical advice immediately.**

Skin contact:
 Remove contaminated clothing, shoes and leather goods immediately. Gently wipe off excess chemical. Wash skin gently and thoroughly with non-abrasive soap or mild detergent and large amounts of water until no evidence of chemical remains (approximately 15 to 20 minutes). Seek medical advice if necessary.

Eye contact:
 Flush eyes immediately with large amounts of gently flowing cold water or normal saline solution, occasionally lifting upper and lower lids, until no evidence of chemical remains (approximately 15 to 20 minutes). If irritation persists, get medical attention.

Ingestion:
Seek medical advice immediately. Remove by gastric lavage and catharsis. Maintain blood pressure and airway. Give oxygen if respiration is depressed. Do not perform gastric lavage if victim is unconscious. Get medical attention immediately. Qualified medical personnel should perform administration of gastric lavage or oxygen.

Antidote:
 No specific antidote. Treat symptomatically and supportively.

Advice to physician:
 Keep patient under observation and treat symptomatically as indicated by his/her condition.
 Ingestion of less than 10 mg per kg b.w, are probably treated best by administering 30 to 60 g activated charcoal

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in 150 to 300 ml water. If diarrhoea has not already developed, follow the charcoal administration in 4 hours with sodium sulphate catharsis.

5. FIRE FIGHTING MEASURES

Fire/Explosion hazard:

Flammable properties:

Flammable: Flash point: Not significant.

Combustible: Inhalation of material could be harmful.

Extinguishing agents:

Extinguish fires with carbon dioxide, dry powder, or alcohol-resistant foam. Water spray can be used for cooling of unaffected stock, but avoid water coming in contact with the product. Use as little water as possible. Use spray or fog. Solid stream may cause spreading. Contain water used for fire fighting for later disposal. Avoid the accumulation of polluted run-off from the site.

Fire fighting:

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.

Dyke fire control water for later disposal. Do not scatter the material. Avoid pollution of waterways.

Do not use high volume water jet, due to contamination risk. Contain water used for fire fighting for later disposal.

Avoid the accumulation of polluted run-off from the site.

Special Hazards:

This product will emit toxic fumes when burned, including carbon monoxide. May produce irritating or poisonous mists or other products of combustion.

Personal protective equipment:

Fire may produce irritating or poisonous vapours or gases (oxides of chlorine and sulphur) or other products of combustion. Fire fighters and others that may be exposed should wear full protective clothing and self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES (SPILLAGE)

Personal precautions:

Avoid contact with skin and eyes. Do not breathe in fumes. For personal protection see Section 8.

Environmental precautions:

Linuron is slightly toxic to fish. Is an environmentally hazardous substance.

Do not allow entering drains or watercourses. Spillage or uncontrolled discharges into water courses (or public

waters) to be reported immediately to the Police and to the Department of Water/Environmental Affairs.

Occupational spill:

Do not touch-spilled material; stop leak if you can do it without risk. Keep out unprotected persons and animals.

For spills: Soak up with absorptive material such as lime, damp earth or sand or other suitable non-combustible absorbent material. Place the material into a clean, dry container and cover for subsequent disposal. In situations where product comes in contact with water, contain contaminated water for later disposal. Prevent material from spreading by damming in with absorptive material. Do not flush spilled material into drains. Keep spectators away and upwind.

To decontaminate spill area, tools and equipment, wash with a suitable solution (i.e. organic solvent, detergent bleach or caustic). Add the solution to the drums already collected. Label drums with its content and dispose it in accordance with local regulations.

Open burning or dumping of this material is prohibited.

Do not get water inside containers.

7. HANDLING AND STORAGE REQUIREMENTS

Handling:

Harmful if swallowed. Avoid inhalation and contact with eyes and skin. Use with adequate ventilation. Do not handle broken packages without protective equipment. Wash hands before eating, drinking, chewing gum, smoking, or using the toilet. Remove clothing immediately if the product gets inside. Then wash skin thoroughly using a non-abrasive soap and put on clean clothing. Seek medical advice.

Do not apply directly to areas where surface water is present, or to intertidal areas below the mean high water mark. Water used to clean equipment must be disposed of correctly to avoid contamination.

Worker should shower at the end of each work day. Launder all clothing before it is re-used again.

Storage:

Keep under lock and key and out of reach of unauthorised persons, children and animals. Store in its original container in dry, cool, well-ventilated area. Avoid excess heat. Not to be stored next to foodstuffs and water supplies.

Keep out of reach of children, uninformed persons and animals. Do not contaminate other pesticides and fertilizers.

Storage stability:

Stable for a period of 2 years under normal warehouse conditions.

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8. EXPOSURE CONTROL/PERSONAL PROTECTION

It is essential to provide adequate ventilation. The measures appropriate for a particular worksite depend on how this material is used and on the extent of exposure. Ensure that control systems are properly designed and maintained. Comply with occupational safety, environmental, fire, and other applicable regulations.

PERSONAL PROTECTIVE EQUIPMENT:

It is essential to provide adequate ventilation. Ensure that control systems are properly designed and maintained. Only spark-resistant equipment should be used. Comply with occupational safety, environmental, fire and other applicable regulations.

Respirator:

An approved full-face respirator suitable for protection from spray or mists of pesticides is required. Limitations of respirator use specified by the approved agency and the manufacturer must be observed.

Clothing:

Employee must wear appropriate protective (impervious) clothing; boots, hat and equipment to prevent repeated or prolonged skin contact with this substance. Do not wear leather clothing.

Gloves:

Employee must wear appropriate chemical resistant protective gloves (PVC or neoprene gloves) to prevent contact with this substance.

Eye protection:

The use of chemical resistant goggles or face shield.

Emergency eyewash: 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 AND CHEMICAL PROPERTIES

Appearance:

White liquid.

Odour:

Slight odour.

Relative density:

1.097 grams/ml

Solubility in water:

Mollifiable in water. Miscible.

Flash point:

Not significant.

Flammability:

Not flammable.

pH:

Not available.

Specific gravity:

10. STABILITY AND REACTIVITY

Stability:

Stable for up to 2 years under normal warehouse conditions.

11. TOXICOLOGICAL INFORMATION

Formulation (calculated):

Acute oral LD₅₀:

Technical: 1200 to 1500 mg/kg

Formulated: 1200 to 1500 mg/kg

Acute dermal LD₅₀:

Technical: >5000 mg/kg in rats.

Formulated: >5000 mg/kg in rats.

Acute inhalation LC₅₀:

Technical: LC₅₀ (4 h) for rats 6.15 mg/l air

Acute skin irritation:

May cause irritation to the skin. Skin (allergic) reaction may occur. Irritant.

Sensitization:

Skin (allergic) reaction may occur. Not a skin sensitizer.

Acute eye irritation:

May cause irritation to the eyes.

ADI:

0.008 mg/kg b.w.

Carcinogenicity:

It seems unlikely that **Linuron** is carcinogenic in humans.

Teratogenicity / Reproductive hazard:

Teratogenic and developmental effects in humans are unlikely at expected levels of exposure. **Linuron** is not likely to have an effect on reproduction in humans under normal circumstances.

Mutagenicity:

A number of studies evaluating the mutagenic potential of **Linuron** have all shown the compound to be non-mutagenic or slightly mutagenic.

12. ECOLOGICAL INFORMATION

Linuron is a tumour promoter in rats. In both plants and animals, the major metabolites arise from demethylation and demethoxylation. Microbial degradation is the primary factor in disappearance from soil.

Half-life in soil is DT₅₀ is 38 - 67 days (field).

ECOTOXICOLOGY: (Technical material)

Birds: Slightly toxic to birds.

LD₅₀: Bobwhite quail: 940 mg/kg

Mallard ducks: > 5000 mg/kg

Fish: Mildly toxic to fish and aquatic invertebrate species.

LC₅₀ (96 hours): Sheepshead minnow: 0.89 mg/l

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Rainbow trout: 3.15mg/ℓ
Daphnia: Mildly toxic to Daphnia.
Daphnia magna: 48-hour LC₅₀: 0.75 mg/ℓ
Bees:
 Non-toxic to bees.
 LD₅₀ (oral & contact): > 1600 µg/bee
Earthworms:
 LC₅₀ (14 days): > 1000 mg/kg soil
Algae: Linuron is harmless to all other beneficial arthropods.

Shipping name: Environmentally hazardous substance, liquid, N.O.S.
 (Linuron 500 g/ℓ)

Maritime Transport IMDG/IMO:

Class: 9
 Packing group: III
 Shipping name: Environmentally hazardous substance, liquid, N.O.S.
 (Linuron 500 g/ℓ)

MARINE POLLUTANT

13. DISPOSAL CONSIDERATION

Pesticide disposal:

Open dumping or burning of this pesticide is prohibited. Waste resulting from the use of this product cannot be reused or reprocessed. Never pour untreated waste or surplus products into public sewers or where there is any danger of run-off or seepage into water systems. Do not contaminate rivers, dams or any other water sources with the product or used containers.

Comply with local legislation applying to waste disposal.

Container disposal: Emptied containers retain vapour and product residues. Observe all labelled safeguards until container is destroyed.

TRIPLE RINSE empty containers in the following manner: Invert the empty container over the spray or mixing tank and allow draining for at least 30 seconds after the flow has slowed down to a drip. Thereafter rinse the container three times with a volume of water equal to a minimum of a third of that of the container. Add the rinsing to the contents of the spray tank before destroying the container in the prescribed manner.

Do not re-use the empty container for any other purpose but destroy it by perforation and flattening and bury in an approved dumpsite. Prevent contamination of food, feedstuffs, drinking water and eating utensils.

Comply with local legislation applying to waste disposal.

14. TRANSPORT INFORMATION

UN No.: 3082
Road Transport ADR/IRD:
 Class: 9
 Packing group: III
 Exempt quantity: 1000 kg Factor F: 1
 Shipping name: Environmentally hazardous substance, liquid, N.O.S.
 (Linuron 500 g/ℓ)

Air Transport ICAO/IATA:

Class: 9
 Packing group: III

15. REGULATORY INFORMATION

Symbol: Xn, N, Xi.
Indication of danger: Environmentally dangerous substance.

Risk phrases:

R 23/24/25 Toxic by inhalation, in contact with skin and if swallowed.
R0 36/37/38 Irritating to eyes, respiratory system and skin.

Safety phrases:

S 1/2 Keep under lock and key and out of reach of children.
S 23 Do not breathe fumes/vapour/spray.
S 24/25 Avoid contact with skin and eyes.
S 28 After contact with skin, wash immediately with plenty of water.
S 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
S 61 Avoid release to the environment. Refer to special instructions / Safety data sheets.
S 62 If swallowed do not induce vomiting: seek medical advice immediately and show this container or label.

16. OTHER INFORMATION

Packing and Labelling

Packed in 1, 5, 10, 20, 25 & 50 litres fluorinated plastic containers and labelled according to the South African regulations and guidelines.

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 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.

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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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Compiled: August 2005

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