

## DIFLUDE 500 SC

## SAFETY DATA SHEET

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product name:** DIFLUDE 500 SC  
**Other identifier:** Diflufenican 500 SC  
**Recommended use:** Herbicide  
**Restrictions on use:** Agriculture

**Supplier:** Villa Crop Protection (Pty) Ltd.  
**Co. Reg. No.:** 1992/002474/07  
PO Box 10413  
Aston Manor, 1630, South Africa  
**Telephone:** (011) 3962233  
**Fax:** (011) 3964666  
**Website:** [www.villacrop.co.za](http://www.villacrop.co.za)

**Emergency telephone numbers:**  
**24 Hr Transport / Spill emergency no:**  
(Hazcall24) +27 86 044 4411  
(Client: Villa Crop Protection)  
Griffon Poison Information Centre +27 82 446 8946  
(Client: Villa Crop Protection)  
**Poisoning Emergency telephone numbers:**  
Griffon Poison Information Centre +27 82 446 8946  
Poisons Information Centre +27 861 555 777

### 2. HAZARDS IDENTIFICATION

UN GHS, Regulation EC 1272/2008 [EU-GHS/CLP] EU & SANS 10234:2008		
Hazard classes	Hazard categories	H-statements
<b>Health</b>		
Dermal	Skin Irrit. 3	H316
Eye	Eye Dam. 1	H318
Inhalation	Acute Tox. 4	H332
Carcinogenicity	Carc. 2	H351
<b>Environment</b>		
Aquatic acute	Aquatic acute 1	H400
Aquatic chronic	Aquatic chronic 1	H410

#### The most important adverse effects:

#### Physiochemical effects:

None known.

#### Human health effects:

Causes mild skin irritation. (Skin irrit. 3)  
Causes serious eye damage. (Eye Dam. 1)  
Harmful if inhaled. (Acute Tox. 4)  
Suspected of causing cancer. (Canc. 2)

#### Label elements:



**Signal word:** Danger.

#### Hazard statements:

H316: Causes mild skin irritation.  
H318: Causes serious eye damage.  
H332: Harmful if inhaled.  
H351: Suspected of causing cancer.  
H400: Very toxic to aquatic life.  
H410: Very toxic to aquatic life with long lasting effects.

#### Precautionary statements:

P203: Obtain, read and follow all safety instructions before use.  
P261: Avoid breathing dust, fume, gas, mists, vapours or spray.  
P264+P265: Wash hands and face thoroughly after handling. Do not touch eyes.  
P271: Use only outdoors or in a well-ventilated area.  
P273: Avoid release into the environment.  
P280: Wear impervious rubber gloves and boots, protective clothing and chemical safety goggles.  
P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P305+P354+P338: IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P318: IF exposed or concerned, get medical advice.  
P332+P317: If skin irritation occurs: get medical help.  
P391: Collect spillage.  
P405: Store locked up.  
P501: Dispose of contents/container in accordance with local regulations.

#### Other hazards:

None known.

#### Toxicity:

Classification according to GHS: Category 5

## DIFLUDE 500 SC

## SAFETY DATA SHEET

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

Substance / Mixture: Mixture

Composition:

Chemical name	CAS	Conc. (m/m %)	Classification EC 1272/2008
Diflufenican	83164-33-4	50 %	Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)
Polyoxyethylene lauryl ether	9002-92-0	< 10%	Acute Tox. 4 (H302) Eye Irrit. 2 (H319) Aquatic Chronic 3 (H412)
Sodium dodecyl Benzene sulfonate	25155-30-0	< 5%	Acute Toxicity 4 (H302) Skin Irrit. 2 (H315) Eye Dam. 1 (H318)
Tributyl phosphate	126-73-8	< 5%	Acute Tox. 4 (H302) Skin Irrit. 2 (H315) Carc. 2 (H351)
HCl	7647-01-0	< 5 %	Skin Corr. 1B (H314) STOT SE 3 (H335)

### 4. FIRST AID MEASURES

Remove the victim from the area of exposure. Wash off remaining material with plenty of water. In the event of any complaints or symptoms, avoid further exposure.

**Inhalation:** Remove person from contaminated area to fresh air and assist breathing as needed. Seek medical attention if irritation occurs. If breathing is shallow or has stopped ensure airway is clear and apply resuscitation.

**Skin:** Remove contaminated clothing and shoes. Gently wipe off excess chemical. Wash skin gently and thoroughly with water and non-abrasive soap. Obtain medical attention if irritation persists.

**Eyes:** Flush eyes with clean water for at least 15 – 20 minutes. Lift eyelids to facilitate irrigation. If present, remove contact lenses after 5 minutes and continue rinsing. **Seek medical attention immediately.**

**Ingestion:** Do not induce vomiting due to inert. If vomiting occurs keep head lower than hips to prevent aspiration. If the person is alert, rinse mouth thoroughly with water. Give a slurry of activated charcoal in water to drink. Never give anything by mouth to an

unconscious person. Obtain medical attention immediately.

#### Anticipated acute effects:

Causes mild skin irritation.

Causes serious eye damage.

Harmful if inhaled.

**Anticipated delayed effects:** Suspected of causing cancer.

**Most important symptoms / effects:** None known.

**Advice to physician:** Treat symptomatically. If swallowed, administer 200 ml liquid paraffin. Administer gastric lavage with at least 4 litres of water, followed by animal charcoal and sodium sulphate. Pulmonary aspiration must be avoided. Derivatives or adrenaline is contra-indicated. Product contains aromatic solvent. Symptomatic treatment and supportive therapy as necessary.

### 5. FIRE-FIGHTING MEASURES

**Suitable Extinguishing Media:** Use carbon dioxide or dry chemical for small fires and water fog or foam for large fires.

**Unsuitable Extinguishing Media:** High volume water jet. Use a water jet only to cool heated containers.

**Specific hazards:** Hazards or hazard products arising from combustion.

**Special fire-fighting procedures:** Remove spectators from surrounding area. Isolate the fire area and evacuate all personnel downwind of the fire. Fight fire from maximum distance and use unmanned hose holder or monitor nozzles. Remain upwind of fire. Avoid inhaling hazardous vapours and fumes from burning materials. Remove container from fire area if possible and without risk. Do not use high volume water jet, due to contamination risk. Do not scatter the burning material. Water can be used to cool unaffected containers but must be contained for later disposal. Contain fire control agents for later disposal. Avoid pollution of waterways by run-off from the site.

**Personal protective equipment:** Wear NIOSH / MSHA approved self-contained breathing apparatus and full protective gear.

### 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions:** Avoid contact with skin and eyes. Do not breathe in spray mist or dust / fumes / vapours. Ventilate area of spill or leak, especially in contained areas.

## DIFLUDE 500 SC

## SAFETY DATA SHEET

**Protective equipment:** Refer to Section 8 for personal protective equipment to be worn during containment and clean-up of a spill involving this product.

**Emergency procedures:** Alert firefighting personnel, evacuate unprotected personnel and animals.

**Environmental Precautions:** Prevent spilled product from entering sewers, waterways or ground water. This product is classified as toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment. Any spillages or uncontrolled discharges into watercourses should be reported immediately to the police and the Department of Water / Environmental Affairs.

**Methods and Materials for Containment:** Contain spilled product by diking area with sand or earth.

**Methods and Materials for Clean-up:** Cover contained spill with an inert absorbent material such as sand, vermiculite, earth or other appropriate material. Vacuum, scoop, or sweep up material and place the material into a clean, dry, sealable container. Label containers with the contents and dispose of according to local regulations. Do not place spilled material back in original container. Do not re-use spilled material. Collect washings and add to the drums already collected. Do not flush spilled material or washings into drains or waterways. To decontaminate the spill area, tools and equipment, wash with water and suitable detergent. See section 13 for disposal considerations.

### 7. HANDLING AND STORAGE

#### Handling:

**Precautions for safe handling:** Avoid contact with skin and eyes. Ensure adequate ventilation during handling and use. Do not handle broken packages without protective equipment. Immediately clean up spills that occur during handling. Keep containers closed when not in use. In the case of contact with the product refer to First Aid Measures – Section 4.

**General occupational hygiene:** Practice good hygiene when using this material. Wash hands before eating, drinking, chewing gum, smoking, using the toilet or applying cosmetics. Worker should shower at the end of each workday. Launder all clothing before it is re-used.

#### Storage:

**Conditions for safe storage:** Keep under lock and key and out of reach of unauthorised persons, children and animals. Store in its original, labelled container, tightly closed in an isolated, dry, cool and well-ventilated area. Avoid excess heat. Not to be stored next to foodstuffs,

feed and water supplies. Avoid cross contamination with other pesticides and fertilisers.

**Incompatible substances and mixtures:** Refer to product label.

**Packaging material:** Plastic containers.

### 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

#### Permissible concentration

Components	Exposure limits	Type of exposure limit	Source
Tributyl phosphate	0.2 ppm	8-hour TWA	<a href="http://www.osha.gov">www.osha.gov</a>
Hydrogen Chloride	0.3 ppm	8-hour TWA	<a href="http://www.osha.gov">www.osha.gov</a>

#### Engineering Controls:

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. Local Exhaust: Provide general or local exhaust ventilation systems to maintain airborne concentrations below OELs or other specified exposure limits. Local exhaust ventilation is preferred. Ensure that control systems are properly designed and maintained. Comply with occupational safety, environmental, fire and other applicable regulations.

#### Personal Protective Equipment:

**Respiratory Protection:** Use a NIOSH approved, air-purifying respirator with cartridges / canisters approved for specific use.

**Hand Protection:** The use of chemically protective impervious gloves is recommended to prevent against skin contact.

**Eye Protection:** Chemical safety goggles should be used to prevent eye contact. Contact lenses are not protective eye devices.

**Skin and Body Protection:** Employees must wear appropriate protective impervious clothing, rubber boots, hat and equipment to prevent repeated or prolonged skin contact with this substance.

**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 to ashen suspension concentrate.

## DIFLUDE 500 SC

## SAFETY DATA SHEET

**Odour:** Odourless.  
**Odour threshold:** Not available.  
**pH (1% aqueous dilution):** 4.0 to 7.0  
**Melting point:** Not available.  
**Freezing Point:** Not available.  
**Boiling Point:** Not available.  
**Flash Point:** Not available.  
**Flammability:** Not flammable.  
**Upper / lower explosion limits:** Not available.  
**Vapour Pressure (mm Hg):** Not available.  
**Relative Vapour Density:** Not available.  
**Density / Relative density:** 1.23 g/cm<sup>3</sup>  
**Solubility:** Soluble in water.  
**n-octanol / water partition coefficient:** Not available.  
**Auto-ignition temperature:** Not available.  
**Decomposition temperature:** Not available.  
**Viscosity:** Not available.

### 10. STABILITY AND REACTIVITY

**Chemical stability:** The product is stable for two years at ambient temperature and pressure, under normal storage and handling conditions. Avoid storage under extreme temperatures and conditions. Store below 50 °C, preferably below 30 °C, and not for prolonged periods in direct sunlight.  
**Reactivity:** None known.  
**Possibility of hazardous reactions:** Unlikely to occur.  
**Conditions to avoid:** Extreme heat or exposure to flames.  
**Incompatible materials:** Strong oxidizers, strong bases, strong reducing agents.  
**Hazardous decomposition products:** Fire may produce irritating or poisonous vapours oxides of carbon and nitrogen, hydrogen fluoride may be release in case of fire.

### 11. TOXICOLOGICAL INFORMATION

#### ACUTE TOXICITY

**Calculated according to GHS:**

**Oral LD<sub>50</sub>** > 5000 mg/kg

**Dermal LD<sub>50</sub>** > 5000 mg/kg

**Inhalation LC<sub>50</sub> (4h)** 3.74 mg/l

**Skin Irritation / Corrosion:** Causes mild skin irritation.

**Eye Damage / Irritation:** Causes serious eye damage.

**Skin Sensitization:** Product is not a skin sensitizer.

**Respiratory Sensitization:** Not classified.

**Reproductive cell mutagenicity:** Not classified.

**Carcinogenicity:** Suspected of causing cancer.

**Reproductive toxicity:** Not classified.

**Specific target organ toxicity – single exposure:** Not classified.

**Specific target organ toxicity – repeated exposure:** Not classified.

**Aspiration hazard:** Not classified.

**Chronic Effects:** Not available.

#### POTENTIAL ADVERSE EFFECTS:

**Inhalation:** Harmful if inhaled.

**Ingestion:** Not classified.

### 12. ECOLOGICAL INFORMATION

This product is considered a marine pollutant.

#### ECOTOXICITY DATA: Active ingredient

##### Diflufenican

##### Fish:

LC <sub>50</sub> (96 h)	Rainbow trout	> 109 mg/l
	Fathead minnows	> 0.0398 mg/l

##### Daphnia:

LC <sub>50</sub> (48 h)		0.24 mg/l
-------------------------	--	-----------

##### Algae:

ErC <sub>50</sub> (72 h)	<i>Scenedesmus subspicatus</i>	0.00036 mg/l
--------------------------	--------------------------------	--------------

##### Birds:

Acute oral LD <sub>50</sub>	Mallard ducks	>4000 mg/kg
Dietary LD <sub>50</sub> (5d)	Bobwhite quail	5902 mg/kg diet

##### Bees:

LD <sub>50</sub> (contact)		>100 µg/bee
LD <sub>50</sub> (oral)		>112.3 µg/bee

### ENVIRONMENTAL EFFECTS

#### Based on information for the active ingredient:

##### Diflufenican

**Plants:** Very low uptake of parent diflufenican, resulting in residue levels below the limit of quantification. Following pre-emergence application in autumn, no residues are detectable in the grain and straw after c. 200–250 days.

**Persistence and degradability:** In soil, degradation proceeds via the metabolites 2-(3-trifluoromethylphenoxy) nicotinamide and 2-(3-trifluoromethylphenoxy) nicotinic acid to bound residues and CO<sub>2</sub>. Field DT<sub>50</sub> 103.4 - 282 d (normalised according to the standard FOCUS procedure).

**Bio-accumulative potential:** Not determined.

**Mobility in soil:** Half-life time (t<sub>1/2</sub>): 105-210 days. Low mobility.

**Other adverse effects:** Not determined.



## DIFLUDE 500 SC

## SAFETY DATA SHEET

### 13. DISPOSAL CONSIDERATIONS

**Waste:** Open dumping or burning of this pesticide is prohibited. Waste resulting from the use of this product cannot be reused or re-processed. Never pour untreated waste or surplus product 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. The product may be taken to a registered waste disposal site or incineration plant.

**Container:** Emptied containers retain vapour and product residues. Do not re-use the empty container for any other purpose. **TRIPLE RINSE THE EMPTY CONTAINER AS FOLLOWS:** Invert the empty container over the spray or mixing tank and drain for at least 30 seconds after the flow has slowed down to dripping. Thereafter rinse the empty container three times in succession with one quarter of the container volume fresh water and decant the rinsate into the spray or mixing tank.

Puncture the triple rinsed container and dispose of via an approved collector or recycler ([www.croplife.co.za](http://www.croplife.co.za)). Do not bury, burn, or donate the container to any other parties that may use it as a container for food or beverages. Observe all labelled safeguards until container is destroyed.

### 14. TRANSPORT INFORMATION

**UN Number:** 3082  
**Road Transport ADR / ORD:**  
Class: 9  
Packaging group: III  
UN Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Diflufenican 500 g/l)

**Maritime Transport IMDG / IMO:**  
Class: 9  
Packaging group: III  
UN Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Diflufenican 500 g/l)

**Marine pollutant (Y/N): Yes.**

**Air Transport IATA / ICAO:**  
Class: 9  
Packaging group: III  
UN Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S. (Diflufenican 500 g/l)

**Special / Environmental Precautions:** Wedge drums tightly to avoid movement.

**Transport in bulk:** Refer to MARPOL 73/78, Annex II and the IBC code.

### 15. REGULATORY INFORMATION

**Safety, health and environmental regulations / legislation for the mixture:**

OHSA 1993 Regulations for Hazardous Chemical Substances.

**Relevant information regarding restrictions:** None.

**EU regulation:** Regulation EC1272/2008 (EU-GHS/CLP)

**Other national regulations:** None.

**Chemical Safety Assessment carried out?** No

### 16. OTHER INFORMATION

**Packaging:** Packed in 1, 2, 5, 10, 20, 25 and 50 litres plastic containers, labelled according to South African regulations and guidelines.

**Other hazard statements, abbreviations and explanations:**

**H302:** Harmful if swallowed.

**H314:** Causes severe skin burns and eye damage.

**H319:** Causes serious eye irritation.

**H335:** May cause respiratory irritation.

**H412:** Harmful to aquatic life with long-lasting effects.

**IATA:** International Air Transport Association.

**IBC:** International Bulk Chemical.

**ICAO:** International Civil Aviation Organization.

**IMDG:** International Maritime Dangerous Goods

**IMO:** International Maritime Organization.

**LD<sub>50</sub> value:** The median lethal dose or the amount of a toxic agent that is sufficient to kill 50 percent of a population within a certain period of time.

**OEL/RL:** Occupational exposure limit-recommended limit.

**TWA:** Time-weighted average – The average exposure over a specified period, usually a nominal eight hours.

**ST/STEL:** Short-term exposure limits.

**Disclaimer:** The information on this sheet is not a specification; it does not guarantee specific properties. The information is intended to provide general guidance

## DIFLUDE 500 SC

## SAFETY DATA SHEET

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.

---

### **END OF DOCUMENT**

**Compiled:** February 2019  
**Reviewed:** July 2022  
**Revision no.:** (2)  
**Next revision:** July 2022

For detailed information on revisions, contact the Registration holder.