

# VILLA DIFLUDE 500 SC

# MATERIAL SAFETY DATA SHEET

## 1. PRODUCT & COMPANY IDENTIFICATION

**Product Name:** DIFLUDE 500 SC  
Herbicide

**UN No.:** 3082

**Supplier:** Villa Crop Protection (Pty) Ltd.  
PO Box 801,  
Kempton Park, 1620, South Africa

**Telephone:** (011) 396 2233  
**Fax:** (011) 396 4777  
**Website:** [www.villacrop.co.za](http://www.villacrop.co.za)

### Emergency telephone numbers:

#### 24 Hr Transport / Spill emergency no:

Envirosure. +27 31 205 4918  
 (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

### Villa Crop Protection Emergency number:

**National Safety, Health and Environmental Manager:**  
+27 63 698 0668

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

**Common name:** Diflufenican  
**Chemical Name:** 2',4'-difluoro-2-( $\alpha,\alpha,\alpha$ -trifluoro-m-tolyloxy)nicotinamide (IUPAC)

**CAS No.:** [83164-33-6]  
**Chemical Family:** Pyridinecarboxamide  
**Chemical Formula:**  $C_{19}H_{11}F_5N_2O_2$   
**Molecular weight:** [Mol. Wt. 394.3]

**Use:** Selective contact and residual herbicide, absorbed principally by the shoots of germinating seedlings, with limited translocation.

**Formulation:** DIFLUFENICAN: 500 g/l  
Suspension Concentrate

### Hazardous ingredients of toxicological concern:

|                              |  |
|------------------------------|--|
| <b>Inert:</b>                | <u>% present:</u>  |
| <b>Diflufenican</b>          | 50.0 %   |
| <b>Inerts</b>                | 10.0 %   |
| <b>Symbol:</b>               | N, Xi, Xn  |
| <b>Indication of danger:</b> | Irritant, Harmful and Environmentally Hazardous substance. |
| <b>Risk-Phrases:</b>         | R20/22, R36, R51   |

## 3. HAZARD IDENTIFICATION

**Likely routes of exposure:** In case of inhalation, skin and eye contact and ingestion.

**Eye:** The product may cause slightly eye irritation.  
Toxic to fish

## 4. FIRST AID MEASURES AND PRECAUTIONS

**Inhalation:** Remove the source of contamination or move person to fresh air. Keep person at rest until recovered if cough or other respiratory symptoms develop, consult medical personnel. If breathing stops, administer artificial respiration and immediately seek medical attention.

**Skin contact:** Remove contaminated clothing, shoes and leather goods and do not re-use until thoroughly cleaned or laundered. Wash skin with non-abrasive soap and plenty of water. Obtain medical attention if irritation persists.

**Eye contact:** Immediately flush eyes with a stream of clean water for at least 20 minutes, holding the eyelid(s) open. Obtain medical attention.

**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.

**Advice on treatment:** Treat symptomatically and give supportive therapy; If ingested perform gastric lavage and administer activated charcoal.

## 5. FIRE FIGHTING MEASURES

**Flash point:** Not applicable

**Flammability:** Not Flammable

**Hazardous products of combustion:** Fire may produce irritating or poisonous vapours oxides of carbon and nitrogen, hydrogen fluoride may be release in case of fire.

**Extinguishing agents:** Extinguish fires with carbon dioxide, foam, dry chemical and water fog. Water spray can be used for cooling of unaffected stock. 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.

**Firefighting:** 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

# VILLA DIFLUDE 500 SC

# MATERIAL SAFETY DATA SHEET

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. Use as little water as possible.

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.

**Personal protective equipment:** Fire may produce irritating or poisonous vapours (carbon monoxide, nitrogen oxides, smoke, part oxidized hydrocarbon fragments), mists or other products of combustion. Fire fighters and others that may be exposed should wear full protective clothing and self-contained breathing apparatus in the positive-pressure mode with a full face mask when there is a possibility of exposure. Decontaminate emergency personnel with soap and water before leaving the fire area.

## 6. ACCIDENTAL RELEASE MEASURES (SPILLAGE)

**Personal precautions:** Avoid contact with skin and eyes. Do not breathe in spray or fumes. For personal protection see Section 8.

**Environmental precautions:** Do not allow entering into 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. Considered as Marine Pollutant.

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

**For spills:** Recover free liquid with explosion proof pumps, absorb residue with absorptive material such as damp earth or sand or other suitable non-combustible absorbent material. Place the material into a clean, dry container and cover for subsequent disposal. If fire potential exists, blanket spill with foam as a precaution. 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.

## 7. HANDLING AND STORAGE REQUIREMENTS

**Handling:** Harmful if inhaled or swallowed. Irritating to eyes and skin. Avoid contact with eyes and skin, and inhalation of spray and vapour. Use with adequate ventilation. Wash hands before eating, drinking, chewing

gum, smoking, or using the toilet. Operators should change and wash clothing daily. Remove clothing immediately if the pesticide gets inside. Then wash skin thoroughly using a non-abrasive soap and put on clean clothing. 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. When transferring more than 5 litres, ground the container before handling to prevent static discharge, which may cause ignition. Do not cut, drill, weld or grind on or near this container.

**Storage:** Keep under lock and key and out of reach of unauthorised persons, children and animals. Store in its original labelled container in isolated, dry, cool and well-ventilated area.

## 8. EXPOSURE CONTROL / PERSONAL PROTECTION

It is essential to provide adequate ventilation. The measures appropriate for a particular work site 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:

If engineering controls and work practices are not effective in controlling exposure to this material, then wear suitable personal protective equipment including approved respiratory protection.

**Respirator:** An approved respirator suitable for protection from mists of pesticides is adequate. Limitations of respirator use specified by the approved agency and the manufacturer must be observed.

**Clothing:** Employee must wear appropriate protective (impervious) clothing and equipment to prevent repeated or prolonged skin contact with this substance.

**Gloves:** Employee must wear appropriate synthetic protective gloves to prevent contact with this substance.

**Eye protection:** The use of safety goggles is recommended.

**Emergency eye wash:** 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 concentrated liquid.

**Odour:** Odourless.

**Flammability:** Non-Flammable.

**Flash point:** Not applicable.

# VILLA DIFLUDE 500 SC

# MATERIAL SAFETY DATA SHEET

**Explosion properties:** Not explosive.  
**Solubility:** Soluble in water.  
**Density:** 1.23 g/cm<sup>3</sup>.  
**pH:** 4.5 to 7.5 (1:10).  
**pH (of aqueous solution dilution):** 4.0 to 7.0.

**Diflufenican Technical:**  
 LC<sub>50</sub> (48 h): 10 mg/ℓ  
**Bees:**  
**Diflufenican Technical:** *Not toxic to bees.*  
**Algae:**  
**Diflufenican Technical:** *No growth inhibition of Algae.*  
 E<sub>r</sub>C<sub>50</sub> (72 h) 10 mg/ℓ  
**Worms:**  
**Diflufenican Technical:** *Not toxic to worms.*

## 10. STABILITY AND REACTIVITY

**Stability:** Stable. Not hydrolysed within 24 h (pH 7, 20 °C). Stable in air up to melting point.  
**Storage stability:** Stable for a period of 2 years under normal warehouse conditions.  
**Conditions and Materials to Avoid:** Avoid heat. Incompatible with strong oxidising 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.  
**Polymerisation:** this product will not undergo polymerisation.

## 13. DISPOSAL CONSIDERATION

**Pesticide disposal:** It is the responsibility of waste generator to determine the toxicity of and physical properties of material generated to determine the proper methods in compliance with applicable regulations. 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 to drain 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 dump site. Prevent contamination of food, feedstuffs, drinking water and eating utensils. Comply with local legislation applying to waste disposal.

## 11. TOXICOLOGICAL INFORMATION

**Acute oral LD<sub>50</sub> rats:** >2000 mg/kg (tech.)  
**Acute dermal LD<sub>50</sub> rats:** >2000 mg/kg (tech.)  
**Acute skin irritation:** Mild irritant  
**Acute eye irritation:** Mild irritation  
**Dermal sensitisation:** Non-skin sensitizer.  
**Inhalation:** >2.34 mg/ℓ (tech.)  
**Mutagenicity:** Not available.  
**Reproductivity:** Not available.  
**Carcinogenicity:** Not available.

## 12. ECOLOGICAL INFORMATION

**Mobility, Degradability & Accumulation:**  
**Soil:** In soil degradation process via 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 – 282.0 d (normalised according to the standard FOCUS procedure).  
**Animals:** In mammals **Diflufenican** can be mobilised in rats by several pathways including hydroxylation, hydrolytic **Defluorination**, hydrolysis of the carboxamide link, and conjugation with glutathione or glucuronic acid.

### ECOTOXICOLOGY:

**Birds:**  
**Diflufenican Technical:**  
 Oral LD<sub>50</sub>: Quail, > 2150 mg/kg  
 Mallard ducks > 4000 mg/kg

**Fish:**  
**Diflufenican Technical:** *Toxic to fish*  
 LC<sub>50</sub> (96 h): Rainbow trout: >108.8 mg/ℓ  
 Carp 105 mg/ℓ

**Daphnia:**

## 14. TRANSPORT INFORMATION

**UN NUMBER:** 3082  
**Road Transport ADR/RID:**  
 Class: NR  
 Packaging group: III  
 Shipping name: Environmentally Hazardous Substance, Liquid. N.O.S. (Diflufenican 50 % SC)  
**Maritime Transport IMDG/IMO:**  
 Class: NR  
 Packaging group: III

# VILLA DIFLUDE 500 SC

# MATERIAL SAFETY DATA SHEET

Shipping name: Environmentally Hazardous Substance, Liquid. N.O.S. (Diflufenican 50 % SC)  
**Considered a marine pollutant.**  
 Toxic to fish.

**Next revision date:** March 2024  
 For detailed information on revisions, contact the Registration holder.

## 15. REGULATORY INFORMATION

**Symbol:** Xi, Xn, N  
**Indication of danger:** Irritant, Harmful and Environmentally Dangerous Substance.

**Risk phrase(s):**  
**R 20/22** Harmful by inhalation and if swallowed.  
**R 36/37/38** Irritating to eyes  
**R51** Toxic to aquatic organisms

**Safety phrases:**  
**S 1/2** Keep locked up and out of reach children.  
**S 13** Keep away from food, drink and animal feeding stuffs.  
**S 23** Do not breathe vapour/spray.  
**S 24/25** Avoid contact with skin and eyes.  
**S 36/37/39** Wear suitable protective clothing, gloves and eye/face protection.  
**S 60** This material and its container must be disposed of as hazardous waste.  
**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

**Packaging:** Packed in 1, 2, 5, 10, 20, 25 and 50 litres plastic containers and labelled according to 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. 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:** July 2012  
**Reviewed:** March 2019  
**Revision no.:** (2)