DIFLURON 480 SC SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: **DIFLURON 480 SC**
Other identifier: **Diflubenzuron 480 SC**
Recommended use: Insecticide
Restrictions on use: Agriculture

Supplier: **Universal Crop Protection (Pty) Ltd.**
Co. Reg. No.: 1983/008184/07
PO Box 801,
Kempton Park, 1620, South Africa
Telephone: (011) 396 2233
Fax: (011) 396 4666
Website: 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
Health		
Dermal	Acute toxicity 5	H313
Eye	Eye irritation 2B	H320
Environment		
Aquatic acute	Aquatic acute 1	H400

The most important adverse effects:
Physiochemical effects:
None known.
Human health effects:
May be harmful in contact with skin.
Causes eye irritation.
Label elements:

Signal word: Warning.
Hazard statements:
H313: May be harmful in contact with skin.
H320: Causes eye irritation
H400: Very toxic to aquatic life.
Precautionary statements:
P264+P265: Wash hands thoroughly after handling. Do not touch eyes.
P273: Avoid release into the environment.
P302+P317: IF ON SKIN: Get medical help.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P317: If eye irritation persists: Get medical help.
P391: Collect spillage.
P501: Dispose of content/container to suitable landfill in accordance with local regulations.
Other hazards:
None known.
Toxicity:
Classification according to GHS: Category 5

3. COMPOSITION / INFORMATION ON INGREDIENTS

Substance/Mixture: Mixture.
Composition:

Chemical Name	CAS	Conc. (m/v %)	Classification EC 1272/2008
Diflubenzuron	35367-38-5	48%	Acute Toxicity 4 (H312) Aquatic Acute 1 (H400)
MEG	107-21-1	<10 %	Acute Toxicity 4 (H302)
Tensiofix 821	N/A	<50%	Eye irritation 2B (H320)

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. If exposed or concerned, get medical advice.
Inhalation: Remove person from contaminated area to fresh air and assist breathing as needed. Seek medical attention if irritation occurs.
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 if irritation persists.**
Ingestion: Seek medical attention or call a poison control centre for treatment advice. Do not induce vomiting unless instructed to do so by a poison control centre or doctor. Do not give anything by mouth to an unconscious person. If the person is alert, rinse mouth thoroughly with water.
Anticipated acute effects: May be harmful in contact with skin. Causes eye irritation.
Anticipated delayed effects: None known.

Most important symptoms/effects: None known.
Advice to physician: Treat symptomatically and supportively. No specific antidote known.

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: None known.
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 fumes/vapours. Ventilate area of spill or leak, especially in contained areas.
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 to be very toxic to aquatic organisms. 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 damp earth.
Methods and Materials for Clean-up: Cover contained spill with an inert absorbent material such as sand, vermiculite, damp 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. 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 tightly 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 product. 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 the product in its original labelled container, tightly closed in an isolated dry, cool and well- ventilated area. Avoid excess heat.
Do not store 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 fluorinated containers.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Permissible concentration: No occupational exposure limits have been determined for the significant ingredients in this product.
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: For most well-ventilated conditions, no respiratory protection should be needed. If used in a poorly ventilated area (airborne concentrations exceed exposure limits), use a NIOSH approved air-purifying respirator with cartridges/canisters approved for organic vapours.

Hand Protection: The use of chemically protective impervious gloves is recommended to prevent against skin contact.
Eye Protection: The use of chemical safety goggles is recommended to prevent against 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 eyewash fountain or appropriate alternative within the immediate work area for emergency use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Off white liquid.
Odour: Slight aromatic odour.
pH (1% aqueous dilution): 7.2.
Melting point: Not available.
Freezing Point: Not available.
Boiling Point: Not available.
Flash Point: Not determined – water-based product.
Flammability: Not Flammable.
Upper/lower explosion limits: Not explosive.
Vapour Pressure (mm Hg): Not available.
Relative Vapour Density: Not available.
Density/Relative density: 1.207 kg/ℓ.
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 , strong bases, strong reducing agents.
Hazardous decomposition products: Alcohols. carbon monoxide and carbon dioxide may form under burning conditions or with incomplete combustion.

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY:
Calculated according to GHS.
Oral LD_{50} (24 h) > 5000 mg/kg (rat).
Dermal LD_{50} (24 h) > 4000 mg/kg (rat).
Inhalation LC_{50} (4 h) > 6 mg/ℓ (rat).
Skin Irritation/Corrosion: Not classified.
Eye Damage/Irritation: Causes eye irritation.
Skin Sensitization: Not classified.
Respiratory Sensitization: Not classified.
Reproductive cell mutagenicity: Not classified.
Carcinogenicity: Not classified.
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 classified.
POTENTIAL ADVERSE EFFECTS:
Inhalation: Not classified.
Eye contact: Causes eye irritation.
Skin contact: May be harmful in contact with skin.
Ingestion: Do not ingest.

12. ECOLOGICAL INFORMATION

This product is very toxic to aquatic organisms.

ECOTOXICITY DATA:
Diflubenzuron

Fish:		
LC_{50} (96 h)	Rainbow trout	>102 mg/ℓ
	Sheepshead minnows	0.13 mg/ℓ
Daphnia:		
LC_{50} (72 h)		0.0026 mg/ℓ
Algae:	*Selenastrum capricornutum*	
EC_{50} (120 h)		20 mg/ℓ
Birds:		
Acute oral LD_{50} (14d)	Bobwhite quail and Mallard ducks	>5000 mg/kg.
Bees:		
(LD_{50}, mg/bee)	(contact)	>30 µg/bee.
	(oral)	>25 µg/bee
Worms:		
LC_{50}	*Eisenia fetida*	>500 mg/kg soil.

ENVIRONMENTAL EFFECTS:
Based on information for the active ingredient:
Plants: Non-systemic. Not metabolised on plants.
Persistence and degradability: Rapidly degraded in soil under aerobic conditions, DT50 (20 °C, pF2) 2–6.7 days. The principal degradation products are 4-chlorophenylurea (CPU) and 2,6-difluorobenzoic acid (DFBA). Diflubenzuron hydrolyses to CPU and DFBA (pH 9, 25 °C) DT50 32.5 d. Diflubenzuron is fairly persistent in the water/sediment system under aerobic conditions, DT50 (whole system) 3.7–5.4 days (20 °C) with the formation of two major

metabolites, CPU and DFBA. Diflubenzuron is classified as not readily biodegradable.
Bio-accumulative Potential: In rats, diflubenzuron is extensively metabolised by dechlorination, glucuronidation, sulphation and hydrolysis. Diflubenzuron is poorly absorbed from the gastro-intestinal tract and is found in the faeces. Absorbed radioactivity is removed almost completely in 24–48 hours. Diflubenzuron and/or its metabolites do not accumulate in any other parts of the rat body.
Mobility in soil: Immobile to slightly mobile in soil.
Other adverse effects: Not determined.

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 containers may be taken to a registered waste disposal site or incineration plant. Where possible, recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations.
Container: Emptied containers retain vapour and product residues. Do not re-use the empty container for any other purpose. Triple rinse empty containers by inverting 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 one quarter of that of the container. Add the rinsing's to the contents of the spray tank before recycling or destroying the container in the prescribed manner. Puncture the triple rinsed container and dispose of via an approved collector or recycler (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/IRD:
Class: 9
Packaging group: III
UN Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, N.O.S (**Diflubenzuron** 480 g/ℓ)
Maritime Transport IMDG/IMO:
Class: 9
Packaging group: III
UN Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, N.O.S (**Diflubenzuron** 480 g/ℓ)
Marine Pollutant (Y/N): YES
Air Transport IATA/ICAO:
Class: 9
Packaging group: III
UN Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, N.O.S (**Diflubenzuron** 480 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, 5, 10 and 20 litres plastic fluorinated containers and labelled according to South African regulations and guidelines.
Other hazard statements, abbreviations and explanations:
H302: Harmful if swallowed.
H312: Harmful in contact with skin.
IATA: International Air Transport Association.
IBC: International Bulk Chemical.
ICAO: International Civil Aviation Organization.
IMDG: International Maritime Dangerous Goods
IMO: International Maritime Organization.
LD_{50} 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.
PEL: Permissible Exposure Limits.
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 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

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For detailed information on revisions, contact the Registration holder.