KIRON 500 SC SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product name: Kiron 500 SC
Other identifier: Diafenthiuron 500 g/L SC
Recommended use: Crop protection product, insecticide.
Restrictions on use: Agriculture

Registration holder: **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		
Oral	Acute Toxicity 5	H303
Dermal	Acute Toxicity 5	H313
Inhalation	Acute Toxicity 4	H332
Specific target organ toxicity – repeated exposure	STOT RE 2	H373
Environment		
Aquatic Acute	Aquatic Acute 1	H400
Aquatic chronic	Aquatic chronic 1	H410

The most important adverse effects:
Physiochemical effects: None known.
Human health effects:
May be harmful if swallowed (Acute Tox. 5).
May be harmful in contact with skin (Acute Tox. 5).
Harmful if inhaled (Acute Tox. 4).
May cause damage to organs (not specified) through prolonged or repeated exposure (STOT RE 2).

Label elements:

Signal word: Warning
Hazard statements:
H303: May be harmful if swallowed.
H313: May be harmful in contact with skin.
H332: Harmful if inhaled.
H373: May cause damage to organs (not specified) through prolonged or repeated exposure.
H410: Very toxic to aquatic life with long lasting effects.
Precautionary statements:
P261: Avoid breathing dust, fume, gas, mists, vapours or spray.
P271: Use only outdoors or in a well-ventilated area.
P273: Avoid release into the environment.
P301+P317: IF SWALLOWED: Get medical help.
P302+P317: IF ON SKIN: Get medical help.
P304+P340+P317: IF INHALED: Remove person to fresh air and keep comfortable for breathing. Get medical help.
P391: Collect spillage.
P501: Dispose of contents/container to suitable landfill in accordance with local regulations.
Other hazards:
None known.
Toxicity:
Classification according to GHS: Category 4

3. COMPOSITION / INFORMATION ON INGREDIENTS

Substance / Mixture: Mixture
Composition:

Chemical name	CAS	Conc. (m/m%)	Classification EC 1272/2008
Diafenthiuron	80060-09-9	50.07	Acute Tox. 3 (H331) STOT RE 2 ((H373) (not specified)) Aquatic Acute 1 (H400)

			Aquatic Chronic 1 (H410)
MEG	107-21-1	<7%	Acute Tox. 4 *(H302)
Soprophor BSU	99734-09-5	<5%	Aquatic Chronic 3 (H412)
Proxel GXL	2634-33-5	<1%	Acute Tox. 4 * (H302) Skin Irrit. 2 (H315) Eye Dam. 1 (H318) Skin Sens. 1 (H317) Aquatic Acute 1 (H400)

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 and consult a doctor. If exposed or concerned, get medical advice.

Inhalation: Remove patient to fresh air. Lie down and keep warm and rested. If breathing is shallow or has stopped ensure airway is clear and apply resuscitation. **Seek medical assistance immediately**.

Skin: Remove contaminated clothing and footwear. Wash affected areas with soap and water for at least 15 minutes. Do not rub skin. Wash clothing and shoes before re-use. **Seek medical assistance if symptoms appear and persist**.

Eyes: Remove any contact lenses and flush eyes with plenty of clean water or saline solution for at least 15 minutes holding eyelids. Seek medical assistance if symptoms appear and persist.

Ingestion: Never give anything by mouth to an unconscious person. If swallowed do NOT induce vomiting unless directed to by medical personnel. For advice, contact the National Poisons Centre. Loosen tight clothing such as a collar, tie, belt or waistband. Seek medical assistance immediately.

Anticipated acute effects: May be harmful if swallowed. May be harmful in contact with skin. Harmful if inhaled.

Anticipated delayed effects: May cause damage to organs (not specified) through prolonged or repeated exposure.

Most important symptoms / effects: None known.

Advice to physician: Treat symptomatically and supportively. No specific antidote known.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media: Small fires: Water spray, alcohol-resistant foam, dry chemical or carbon dioxide according to the materials involved in the fire. Large fires: Alcohol-resistant foam or water spray

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

Specific hazards: Burning chemicals may produce toxic and irritant vapours.

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. On small fires, if area is heavily exposed to fire and if conditions permit, let fire burn itself out since water may increase the contamination hazard. 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: Do not breathe in spray, mist or fumes. Avoid contact with skin and eyes. 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 as very toxic to aquatic life

with long lasting effects. 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 spilt 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. See section 13 for disposal considerations.

7. HANDLING AND STORAGE

Handling:

Precautions for safe handling: Harmful if inhaled. May be harmful if swallowed. May be harmful in contact with skin. Do not inhale spray mist or fumes. 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: HDPE (High Density Polyethylene)

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Permissible concentration

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: Employees must wear chemically protective impervious gloves to prevent against skin contact.

Eye Protection: Employees must wear chemical safety goggles to prevent against eye contact. Contact lenses are not protective eye devices.

Skin and Body Protection: Employees must wear appropriate protective impervious clothing, 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: Liquid, Suspension concentrate. Orange in colour.

Odour: Characteristic
Odour threshold: Not available.
pH (1% aqueous dilution): 6.0-9.0
Melting point: Not available.
Freezing Point: Not available.
Boiling Point: >90 ˚C
Flash Point: >100 ˚C at 978.4 hPa DIN EN 22719
Flammability: Not highly flammable.
Upper / lower explosion limits: Not available.
Vapour Pressure (mm Hg): Not available.
Relative Vapour Density: Approximately 1.01 g/L
Bulk density: Not available.
Solubility: Suspends water
n-octanol / water partition coefficient: Not available.
Auto-ignition temperature: Not available.
Decomposition temperature: Not available.
Viscosity: Not applicable.

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: No hazardous reactions known. Hazardous polymerisation does not occur. Combustion or thermal decomposition will evolve toxic and irritating vapours. Stable under normal conditions.
Possibility of hazardous reactions: Unlikely to occur.
Conditions to avoid: Keep away from heat, sparks and exposure to flames. Avoid strong basic, acidic or oxidising materials.
Incompatible materials: Strong oxidizers, strong bases, strong reducing agents.
Hazardous decomposition products: Alcohols. carbon monoxide and carbon dioxide may form under burning conditions or with incomplete combustion Decomposition will not occur. There is a possibility of generating hazardous gases during a fire due to presence of F and CN groups.

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY:
Calculated according to GHS.
Oral LD_{50} (24h) >3939 mg/kg (rat)
Dermal LD_{50} > 3990 mg/kg (rat)
Inhalation LC_{50} (4h) > 1 mg/l (rat)
Skin Irritation / Corrosion: May be harmful in contact with skin.
Eye Damage / Irritation: Not calculated.
Skin Sensitization: Not calculated.
Respiratory Sensitization: Not calculated.
Reproductive cell mutagenicity: Not calculated.
Carcinogenicity: Not calculated.
Reproductive toxicity: Not calculated.
Specific target organ toxicity – single exposure: Not calculated.
Specific target organ toxicity – repeated exposure: May cause damage to organs (not specified) through prolonged or repeated exposure.
Aspiration hazard: Not calculated.
Chronic Effects: Not calculated.
POTENTIAL ADVERSE EFFECTS: Not calculated.
Inhalation: Harmful if inhaled.
Ingestion: Maybe harmful if swallowed.

12. ECOLOGICAL INFORMATION

This product is expected to be very toxic to aquatic life with lasting effect.

ECOTOXICITY DATA:
Diafenthiuron

Fish:		
LC_{50} (96 h)	Carp	0.0038 mg/l
	Rainbow trout	0.0007 mg/l
	Bluegill sunfish	0.0024 mg/l
Daphnia:		
EC_{50} (48 h)		0.00015 mg/l
Birds:		
Acute oral LD_{50}	Bobwhite quail and Mallard ducks	>1500 mg/kg
Dietary LD_{50} (5d)	Bobwhite quail and Mallard ducks	>1500 mg/kg diet
Algae LC_{50} (72 h)	*Scenedesmus subspicatus*	>50 mg/l
Bees:		
LD_{50} contact		1.5 µg/bee
LD_{50} oral		2.1 µg/bee
Worms:		
LC_{50}		>1000 mg/kg

ENVIRONMENTAL EFFECTS
Based on information for the active ingredient

Plant: In plants, diafenthiuron shows a complex metabolism pattern in all crops investigated (cotton, tomatoes and apples). Uptake of residue activity by plants from soil is low.
Animal: Study of the absorption, distribution and excretion in rats demonstrated that the major portion of the dose was excreted with the faeces. The compound is degraded to yield its corresponding carbodiimide, which, in turn, reacts with nucleophiles like water and fatty acids to form urea and fatty acid derivatives.
Persistence and degradability: Not determined.
Bio-accumulative potential: Bioaccumulates.
Mobility in soil: Immobile. Diafenthiuron and its main metabolites show a strong sorptivity to soil particles. Degradation in soils proceeds rapidly: DT50 <1 h to 1.4 d. Not persistent 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 may be taken to a registered waste disposal site or incineration plant.
Container:
Plastic bottle: Emptied containers retain product residues. Do not re-use the empty container for any other purpose. Empty containers by inverting the empty container over the spray or mixing tank. Thereafter, rinse the container three times with a volume of water equal to a quarter of that of the container. 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.
Plastic bag: Turn the bag inside out. Hold the bag over the spray or mixing tank and rinse the bag with running water for thirty seconds. Shake the rinsate off into the tank. Repeat the rinsing twice. Cut the bag into pieces 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 foodstuffs.

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 (**Diafenthiuron 500 g/ℓ**)

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

Marine pollutant (Y/N):

Air Transport IATA / ICAO:
Class: 9
Packaging group: III
UN Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S (**Diafenthiuron 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 250 ml, 500 ml, 1, 2, 5, 10, 20, 25, 50 and 200 litres fluorinated plastic containers, labelled according to South African regulations and guidelines.

Other hazard statements, abbreviations and explanations:

H302: Harmful if swallowed.
H315: Causes skin irritation.
H317: May cause an allergic reaction.
H318: Causes serious eye damage.
H331: Toxic if inhaled.
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_{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.
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

Compiled:	August 2019
Reviewed:	September 2022
Revision no.:	**(2)**
Next revision:	September 2027

For detailed information on revisions, contact the Registration holder.