

UNIVERSAL REWARD 200 SC

MATERIAL SAFETY DATA SHEET

1. PRODUCT & COMPANY IDENTIFICATION

Product Name: REWARD 200 SC
 Insecticide
UN No.: 3082
Company: 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. COMPOSITION/INFORMATION ON INGREDIENTS

Common Name: Fipronil
Chemical Name: (±)-5-amino-1-(2,6-dichloro- α,α,α -trifluoro-*p*-tolyl)-4-trifluoromethylsulfinylpyrazole-3-carbonitrile (**IUPAC**)
CAS No.: [120068-37-3]
Chemical Family: fiprole
Chemical Formula: C₁₂H₄Cl₂F₆N₄OS
Use: Broad-spectrum insecticide, toxic by contact and ingestion. Moderately systemic and, in some crops, can be used to control insects when applied as a soil or seed treatment. Good to excellent residual control following foliar application.
Formulation: Fipronil 200 SC
 Suspension Concentrate
Hazardous Ingredient: Fipronil / Fiprole
Symbol: Xi, Xn
Indication of danger: Irritating and harmful substance
Risk phrases: R 20/22, R 36/37/38, R 57

3. HAZARD IDENTIFICATION

Major Health Hazard: Fipronil is a reversible gamma-aminobutyric (GABA) receptor inhibitor.

Inhalation: Harmful. Avoid inhalation of spray mist. Long-term inhalation of nuisance dust may overload lung clearance mechanism.

Eye: The product may cause severe irritation. Avoid contact with eyes.

Skin: Avoid contact with skin. Harmful if absorbed through skin.

Swallowed: If swallowed, immediately contact a doctor and follow the advice given. Keep under medical supervision.

4. FIRST AID MEASURES AND PRECAUTIONS

Inhalation:

Harmful. Avoid inhalation of spray mist. If vapours or mists have been inhaled, remove the source of contamination or move victim to fresh air. Obtain medical attention immediately.

Skin contact: Wear overalls, and a hat and rubber boots. In addition, wear a waterproof apron and respirator when handling the pesticide concentrate. Remove contaminated clothing, shoes and leather goods. Wash skin gently and thoroughly with cold water and non-abrasive soap. Obtain medical attention if irritation persists.

Eye contact: Immediately flush the eyes with clean, gently flowing water for at least 15 to 20 minutes, holding the eyelid(s) open. Remove contact lenses, if present, after the first 5 minutes, and then continue rinsing eye(s). Obtain medical attention if irritation persists.

Ingestion: Obtain medical attention immediately. Do not give anything by mouth to an unconscious person. Keep under medical supervision.

Advice on treatment: Have the product container or label with you when calling a poison control centre or doctor. Fipronil is a reversible gamma-aminobutyric (GABA) receptor inhibitor. During intoxication it will reduce neurological stimulation with possible convulsions. Treat symptomatically. No specific antidote known. Phenobarbital and to a lesser extent, benzodiazepines, have been shown experimentally to be effective in preventing convulsions induced by Fipronil. Due to slow absorption of Fipronil through the gut, symptoms of intoxication may be delayed several hours to one day. Absorption may be decreased by the use of gastric lavage, saline purgative and activated charcoal (possible enterophepatic recirculation). Continue monitoring due to slow absorption.

5. FIRE FIGHTING MEASURES

Fire and explosion hazard: Not flammable.

No risk of an explosion from this product under normal circumstances when involved in a fire.

Hazardous products of combustion: None.

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Extinguishing agents: Extinguish fires with carbon dioxide, dry powder, water or foam. 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 water spray, CO₂, dry chemical and foam-extinguishing agent for the type of surrounding fire. If area is exposed to fire and conditions permit, let fire burn itself out.

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. Burning chemicals may produce by-products more toxic than the original material. 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.

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: If product is on fire, wear self-contained breathing apparatus and full protective equipment. Do not breathe fumes from burning material. Keep upwind.

6. ACCIDENTAL RELEASE MEASURES (SPILLAGE)

Personal precautions: Avoid contact with skin, eyes and clothing and inhalation of the product. Do not breathe in spray or fumes. For personal protection see Section 8.

Environmental precautions: Contain spill and absorb with absorbent material such as earth, sand or clay and store in properly labelled, sealed drums for safe disposal in an approval landfill, or bury under at least 500 mm of soil in a non-crop, non-pasture area away from water sources or homes. 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: In situations where product comes in contact with water, contain contaminated water for later disposal. Do not flush spilled material into drains. Do not contaminate water while cleaning equipment or disposing of wastes. Keep spectators away and upwind.

7. HANDLING AND STORAGE REQUIREMENT

Handling: Harmful by inhalation, skin or eye contact. Avoid inhalation of spray and vapour and contact with eyes and skin. Use with adequate ventilation. Wash hands before eating, drinking, chewing gum, smoking, or using the toilet. Operators should change and wash clothing daily. If accidentally in contact, 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.

Storage: Keep out of reach of unauthorised persons, children and animals. Store in its original labelled container in isolated, dry, cool and well-ventilated area. Do not contaminate water, other pesticides, fertilizer, food or feed in storage. Not to be stored next to foodstuffs and water supplies. Local regulations should be complied with.

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: Wear an organic cartridge respirator suitable for protection from mists of pesticides if inhalation is likely to occur.

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:

Wear a face shield when handling the concentrate and when applying the product. The use of safety goggles is recommended if the face shield is not used.

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: Suspension liquid (White to off-white).

Odour: Slight odour.

Flammability: Not Flammable.

Flash point: Not applicable.

Melting point: Not available.

Vapour pressure: 2.8 x 10⁻⁹ mmHg at 25 °C (as A.I.)

pH: 4.0 tot 8.0.

Explosivity: Not explosive.

Solubility in water: Forms a suspension.

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10. STABILITY AND REACTIVITY

Stability: Stable for 2 years under normal conditions.

Conditions and Materials to Avoid: None.

Hazardous decomposition products:

Toxic thermal decomposition may include oxides of carbon, sulphur and nitrogen and compounds of chlorine and fluorine.

Instability: Extreme heat and fire.

11. TOXICOLOGICAL INFORMATION

Acute oral LD₅₀: Formulation: > 290 mg/kg.

Acute dermal LD₅₀: Formulation: > 2000 mg/kg.

Inhalation: Formulation: LC₅₀ in rats: > 0.26 mg/l (4 hours).

Acute skin irritation: Formulation: Mild irritant.

Acute eye irritation: Formulation: Severe-irritant.

Sensitization: Not a sensitizer in guinea pigs.

Chronic toxicity:

Long-term studies with dogs and rats – NOEL are 0.3/1.0 mg/kg/day (F/M) and LOEL is 1.0/2.0 mg/kg/day (F/M) of dogs based on clinical signs of neurotoxicity. The NOEL is 0.019/0.025 mg/kg/day (F/M) and LOEL is 0.059/0.078 mg/kg/day of rats based on increased incidence of clinical signs and alterations in clinical chemistry and thyroid parameters.

Tetarogenic effects: Developmental toxicity NOEL is 4 mg/kg/day.

Developmental toxicity: The reproductive NOEL for parental (systemic) toxicity was 0.25/0.27 mg/kg/day (M/F). LOEL for parental (systemic) toxicity was 2.54/2.74 mg/kg/day (M/F) based on systemic signs including increase in the absolute and relative weights of the thyroid glands and liver in males and females.

Mutagenic effects:

Several mutagenicity tests were negative.

Carcinogenicity: The study demonstrated that technical **Fipronil** is not carcinogenic when administered at doses of 30 ppm or greater to CD-1 mice.

ADI: (JMPR) 0.0002 mg/kg b.w. [2000]; group ADI for **Fipronil** and **Fipronil desulfinyl**.

12. ECOLOGICAL INFORMATION

Mobility, Degradability & Accumulation:

In plants, animals and the environment, **Fipronil** is metabolised via reduction to the sulphide, oxidation to the sulfone, and hydrolysis to the amide. In the presence of sunlight, a photodegradate also forms via sulfoxide extrusion. The sulphide, sulfone and photodegradate are known to act at the GABA receptor site, whereas the amide does not. **Animals** In rats, once absorbed, the distribution and metabolism of **Fipronil** is rapid. Elimination is mainly via the faeces as **Fipronil** and its

sulfone. The two major urinary metabolites were identified as conjugates of ring-opened pyrazole products. The distribution of radioactive residues in tissues was extensive after seven days. In goats and hens, the sulfone was the only metabolite identified in tissues. **Plants** When applied as an incorporated soil treatment to cotton, maize, sugar beet or sunflowers, uptake of **Fipronil** into plants in all cases was low (c. 5%). At crop maturity, the major residue components observed in all plants were **Fipronil**, the sulfone, and the amide. Following foliar application to cotton, cabbage, rice and potatoes, at crop maturity, **Fipronil** and the photodegradate were the major residue components. **Soil/Environment** results of lab and field studies: Readily degraded: major degradates in soil (aerobic) are sulfone and amide, (anaerobic) are sulphide and amide. Photolysis of soil-applied **Fipronil** gives the photodegradate together with sulfone and amide. K_{oc} 427 (Speyer 2.2) to 1248 (sandy loam). Both fresh and aged column leaching studies (5 soils) indicate that **Fipronil** and its metabolites present a low risk of downward movement in soil; this is supported by field dissipation studies. Following soil incorporated in-furrow granular applications; quantifiable residues were confined to the top 30 cm of soil, with no significant lateral movement or residues.

ECOTOXICOLOGY:

Bees: Highly toxic to honeybees, both by direct contact and by ingestion. However, no risk to bees when used as a soil or seed treatment.

Birds: Acute oral LD₅₀ for bobwhite quail 11.3, mallard ducks >2000, pheasants 31, red-legged partridges 34, house sparrows 1120, pigeons >2000 mg/kg. Dietary LC₅₀ (5 d) for bobwhite quail 49, mallard ducks >5000 mg/kg diet.

Fish: Acute LC₅₀ (96 h) for bluegill sunfish 85, rainbow trout 248, European carp 430 µg/l.

Daphnia: LC₅₀ (48 h) 0.19 mg/l; for *D. carinata* (48 h) 3.8 mg/l.

Algae: EC₅₀ (96 h) for *Scenedesmus subspicatus* 0.068 mg/l; (120 h) for *Selenastrum capricornutum* >0.16, *Anabaena flos-aquae* >0.17 mg/l.

Earthworms: Non-toxic.

13. DISPOSAL CONSIDERATION

Pesticide and container disposal: Open dumping or burning of this pesticide is prohibited. Waste resulting from the use of this product cannot be re-used 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.

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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 one 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 NUMBER: 3082
Road Transport ADR/RID:
 Class: 9
 Packaging group: III
 Shipping name: Environmentally Hazardous Substance, Liquid, N.O.S (Fipronil 200 g/l)

Maritime Transport IMDG/IMO:
 Class: 9
 Packaging group: III
 Shipping name: Environmentally Hazardous Substance, Liquid, N.O.S (Fipronil 200 g/l)

15. REGULATORY INFORMATION

Symbol: Xi, Xn
Indication of danger: Irritant, Harmful
Risk phrase(s):
 R 21/22 Harmful in contact with skin and if swallowed.
 R 36//38 Irritating to eyes and skin.
 R 57 Toxic to bees.

Safety phrases:
 S 2 Keep out of the reach of 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 61 Avoid release to the environment. Refer to special instructions/safety data sheets.

16. OTHER INFORMATION

Packaging: Packed in 1, 5, 10 & 25 litres plastic containers, 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 neither 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.