

UNIVERSAL FLOURISH 500 EC

MATERIAL SAFETY DATA SHEET

1. PRODUCT & COMPANY IDENTIFICATION

Product Name: FLOURISH 500 EC
 Fungicide
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:

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: Spiroxamine
Chemical Name: 8-tert-butyl-1,4-dioxaspiro[4.5]decan-2-ylmethyl(ethyl)(propyl)amine (IUPAC)
CAS No.: [118134-30-9]
Chemical Family: Spiroketalamine
Chemical Formula: C₁₈H₃₅NO₂ (Mol. wt.: 297.5)
Formulation: Spiroxamine: 500 g/l
 Emulsifiable concentrate
Use / Mode of Action: Protective, curative and eradivative systemic fungicide.
Hazardous Ingredient: Spiroxamine
 Active Ingredient
SYMBOLS: X_n, X_i, N
Indication of danger: Harmful and irritating substance; Environmental dangerous.
RISK-PHASE(S): R22, R36/37/38, R43, R51/53

3. HAZARD IDENTIFICATION

Toxicity class: WHO II (a.i.), EPA II (Formulation)
Likely routes of exposure: Skin contact, ingestion, and inhalation.
Ingestion: Harmful by ingestion.

Inhalation: Harmful by inhalation.

Eye contact: Slight eye irritant. **Skin contact:** Mild irritant.

4. FIRST AID MEASURES AND PRECAUTIONS

FIRST AID:

Skin contact: Remove contaminated clothing, shoes and leather goods immediately. Wash contaminated areas with plenty of water and soap. Wash contaminated clothing before re-use. If irritation persists, get medical attention.

Eye contact: Flush eyes with gently flowing water for at least 15 minutes, while holding the eyelid(s) open. Remove contact lenses. Take care not to rinse contaminated water into the unaffected eye or onto the face. Get immediate medical attention.

Inhalation: Remove from exposure area to fresh air immediately. Keep affected person warm and at rest. If breathing has stopped, give artificial respiration. Administer oxygen if breathing is difficult. Get immediate medical attention.

Ingestion: Do not induce vomiting. Rinse mouth with water. **Immediately take the person to a physician.**

Advice to physician: No specific antidote is available if. Treat symptomatically and supportively. **Do not induce vomiting.**

Therapeutic measures: Basic aid, decontamination and symptomatic treatment.

5. FIRE FIGHTING MEASURES

Flammability: Combustible liquid.

Special hazards: In the event of fire, the formation of hydrogen cyanide, carbon monoxide and nitrogen oxides must be anticipated.

Extinguishing agents: Water spray, foam, carbon dioxide, dry chemical, sand. Contain water used for fire fighting for later disposal.

Firefighting: Keep unnecessary people away. If it can be done safely, remove intact containers from the fire. Otherwise, use water spray to cool them. Bund area with sand or earth to prevent contamination of drains or waterways. Dispose of fire control water or other extinguishing agent and spillage safely later. Do not release contaminated water into the environment.

Personal protective equipment: Fire-fighters and others that may be exposed should wear full protective clothing and self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES (SPILLAGE)

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

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Environmental precautions: 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: Contain spill and absorb with earth, sand, clay or other absorbent material (e.g. sawdust, peat, chemical binder). Collect and store in properly labelled, sealed drums for safe disposal. Clean the floor with water and detergent, placing cleaning materials in the disposal drum. Deal with all spillages immediately. Do not flush spilled material into drains. Keep spectators away.

7. HANDLING AND STORAGE REQUIREMENTS

Handling: Keep out of reach of children. Avoid contact with eyes and skin, and inhalation of mist and vapour. Harmful if swallowed. 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 product gets inside. Then wash skin thoroughly using a non-abrasive soap and plenty of water, and put on clean clothing. Wash eyes out immediately if product comes in contact with eyes. 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. Keep product away from ignition sources.

Storage: Stable for up to 2 years when stored under dry normal warehouse conditions.

The product must be kept under lock and key. Keep out of reach of unauthorised persons, children and animals. Store in its original labelled container in isolated, dry, cool and well-ventilated area. Not to be stored in direct sunlight for prolonged periods. Do not store 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: An approved respirator suitable for protection from vapours and mists of pesticides is required. Limitations of respirator use specified by the approving agency and the manufacturer must be observed.

Clothing: Employee must wear appropriate protective (impervious) clothing and equipment to prevent skin contact with the substance.

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

Eye protection: The use of face shield, goggles or full-face respirator 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: Brown.

Odour: Paraffin like.

Flash point: 93 °C

Flammability: Combustible liquid.

Density: 0.994 g/ml (20°C).

Solubility: Emulsifies in water.

10. STABILITY AND REACTIVITY

Storage stability: Stable for up to 2 years when stored in a dry, cool covered warehouse in original, well-labelled containers. Store at low temperature conditions, below 50°C, preferably below 30 °C and not for prolonged periods in direct sunlight.

Hazardous Polymerization: Will not occur.

Incompatible materials: Strong oxidising agents, strong acids, plastics.

Hazardous decomposition products: None under normal conditions. In a fire, formation of hydrogen cyanide, oxides of carbon, nitrogen and sulphur can be expected.

11. TOXICOLOGICAL INFORMATION

Acute oral LD₅₀: Male: 1260 mg/kg in rats.

Female: 1620 mg/kg in rats.

Acute dermal LD₅₀: > 2000 mg/kg in rats.

Acute inhalation LC₅₀: > 2000 mg/m³ aerosol (4 hours).

Skin irritation: Moderately irritating (rabbit).

Eye irritation: Severe irritant (rabbit).

Skin sensitisation: Weak skin sensitizer (guinea pig).

Reproductivity: No toxic effects on reproductive parameters.

Carcinogenicity: No evidence of carcinogenicity.

Teratogenicity: Non-teratogenic in rats and rabbits.

Mutagenicity: Not available.

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12. ECOLOGICAL INFORMATION

Degradability: In **plants**, Oxidation occurred preferentially in the tertiary amine group and also, to a minor extent, in the *tert*-butyl group. In **soil**, readily degraded in soil, ultimately to CO₂; oxidation on the *tert*-butyl moiety and dealkylation of the amine are the primary reaction steps.

ECOTOXICOLOGY: (For technical)

Birds:

LD₅₀ for bobwhite quail: 565 mg/kg
 LC₅₀ for bobwhite quail & mallard ducks > 5000 mg/kg

Fish: Moderately to highly toxic to aquatic organisms

LC₅₀ (96 hr): Rainbow trout: 18.5 mg/ℓ
 Bluegill sunfish: 7.13 mg/ℓ

Daphnia:

LC₅₀ (48 h, Static): 6.1 mg/ℓ
 EC₅₀ (48h, flow-through): 3.0 mg/ℓ

Algae:

E₁C₅₀ (96 h) *Scenedesmus subspicatus* 0.012 mg/ℓ

Worms:

LC₅₀: ≥1000 mg/kg
 dry wt. substrate

Bees:

LD₅₀ (48 h) contact 4.2 µg/bee
 LD₅₀ (48 h) oral > 100 µg/bee

13. DISPOSAL CONSIDERATION

Pesticide disposal: Open dumping or burning of this pesticide is prohibited. Waste resulting from the use of this product that cannot be reused or reprocessed should be disposed of in a landfill approved for pesticide disposal. Do not contaminate rivers, dams or any other water sources with the product or used containers.

Package product wastes: Emptied containers retain vapour and product residues. Observe all labelled safeguards. **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 a third of that of the container. Add the rinsing to the contents of the spray tank before destroying the container.

Destroy the emptied containers by perforation and flattening. Bury in an approved dumpsite. **Do not** re-use the empty container for any other purpose.

14. TRANSPORT INFORMATION

UN NUMBER: 3082

Road Transport ADR/IRD:
 Class: 9

Packaging group: III
 Shipping name: Environmentally hazardous substance, Liquid, NOS.
 (**Spiroxamine 500 g/ℓ**)

Air Transport ICAO/IATA:

Class: 9
 Packaging group: III
 Shipping name: Environmentally hazardous substance, Liquid, NOS.
 (**Spiroxamine 500 g/ℓ**)

Maritime Transport IMDG/IMO:

Class: 9
 Packaging group: III
 Shipping name: Environmentally hazardous substance, Liquid, NOS.
 (**Spiroxamine 500 g/ℓ**)

15. REGULATORY INFORMATION

Symbol: Xn, Xi, N
Indication of danger: Harmful and irritating substance; environmentally dangerous.

Risk phrase(s):

R 22 Harmful if swallowed.
R 36/37/38 Irritating to eyes, respiratory system and skin.
R 43 May cause sensitization by skin contact.
R 51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety phrases:

S 1/2 Keep locked up and out of reach children.
S 20/21 When using do not eat, drink or smoke.
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 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

16. OTHER INFORMATION

Packing and Labelling: Packed in 100, 200, 500 ml and 1, 5, 10, 15, 20, 25 & 50 litres fluorinated plastic containers and labelled according to the 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 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.

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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: November 2011
Reviewed: March 2019
Revision no.: (3)
Next revision date: March 2024

For detailed information on revisions, contact the Registration holder.