

# UNIVERSAL LORE 250 SC

# MATERIAL SAFETY DATA SHEET

## 1. IDENTIFICATION OF PRODUCT AND COMPANY

**Product Name:** Lore 250 SC  
 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](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:** Quinoxifen  
**Chemical Name:** 5,7-dichloro-4-quinolyl 4-fluorophenyl ether  
**CAS No.:** [124495-18-7]  
**Chemical Family:** quinoline  
**Chemical Formula:** C<sub>15</sub>H<sub>8</sub>Cl<sub>2</sub>FNO  
**Molecular weight:** 308.1  
**Use:** Mobile, protectant fungicide acting through inhibition of appressorial development; not effective as an eradicant. Active through systemic acropetal and basipetal movement, and by vapour transfer.

**Formulation:** Quinoxifen 250 g/l  
 Suspension concentrate

### Hazardous ingredients of toxicological concern:

<u>Inert:</u>	<u>concern:</u>	<u>% present:</u>
Quinoxifen		± 25 %
Other inerts		± 9.0 %

**Symbol:** Xi, Xn, N  
**Indication of danger:** Irritant, Harmful, Environmentally Dangerous  
**Risk phrases:** R 22, R 43, R 51/53

## 3. HAZARD IDENTIFICATION

**Likely routes of exposure:** Skin: May cause irritation. Not expected to be a skin sensitizer.  
**Eye:** Harmful. May cause moderate irritation to the eyes.  
**Inhalation:** No adverse anticipated by this route of exposure incidental to proper handling. LC<sub>50</sub> for the technical is > 3.38 mg/l.  
**Swallowed:** The product is harmful if swallowed.

## 4. FIRST AID MEASURES AND PRECAUTIONS

**Inhalation:** If product has been inhaled, remove the source of contamination or move victim to fresh air. Administer artificial respiration if patient is not breathing; if breathing is laboured supply oxygen. Only qualified personnel should administer oxygen. Immediately obtain medical attention.  
**Skin contact:** Remove contaminated clothing, shoes and leather goods. Wash skin gently and thoroughly with copious amounts of water and non-abrasive soap for 15 to 20 minutes. Obtain medical attention if irritation persists.  
**Eye contact:** Immediately flush eyes with a stream of clean gently flowing water for at least 15 minutes, holding the eyelid(s) open. Remove contact lenses, if present, after the first 5 minutes. Obtain medical attention if irritation develops.  
**Ingestion:** Rinse mouth thoroughly with water if person is alert. Have person drink plenty of water if able to swallow. Never give anything by mouth to an unconscious person. Do not induce vomiting, unless instructed to do so by a physician. If vomiting occurs keep head lower than hips to prevent aspiration. **Immediately obtain medical attention.**  
**Advice on treatment:** There is no specific antidote available. Treat symptomatically and supportively.

## 5. FIRE FIGHTING MEASURES

**This material is not flammable.**  
**Hazardous products of combustion:** Product is not explosive, but dust/air mixture may be explosive in the presence of an ignition source.  
 Fire may produce irritating and/or toxic vapours, mists or other products of combustion.

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**Extinguishing agents:** Extinguish fires with dry powder/dry chemical extinguisher, water fog, foam, carbon dioxide. 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 unmannned hose holder or monitor nozzles. Contain fire control 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.

Dyke fire control water for later disposal. Do not scatter the material. Avoid pollution of waterways.

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 and/or toxic vapours, mists or other products of combustion. 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:** Do not breathe in spray or fumes. Avoid contact with skin and eyes. For personal protection see Section 8.

**Environmental precautions:** Do not allow entering of 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 a Marine Pollutant.

**Occupational spill:** Avoid breathing mist/vapour and skin contact. Do not touch spilled material; stop leak if you can do it without risk. Ventilate area. Wear proper protective equipment. Keep out unprotected persons and animals.

**For spills:** Isolate area and keep unauthorized persons away. Ventilate area of leak or spill. Place the material into a clean, dry container and cover for subsequent disposal. In situations where product comes in contact with water, contain contaminated water for later disposal. Label drums with its content and dispose of it in accordance with local regulations. Prevent material from spreading by damming in with absorptive material. Do not flush spilled material into drains. Keep spectators away and upwind. Open burning or dumping of this material is prohibited.

### 7. HANDLING AND STORAGE REQUIREMENTS

**Handling:** Harmful if swallowed. Product may be moderately irritating to eyes and mildly irritating to 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. Thereafter 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 inter-tidal 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, tightly-closed container in dry, cool and well-ventilated area, away from heat or open flame. Do not store next to feed, food 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 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 skin contact with this substance. Wear long-sleeved shirt and long pants, chemical-resistant foot ware. Wash contaminated clothing and clean protective equipment before re-use.

**Gloves:** Employee must wear appropriate chemical-resistant and waterproof gloves to prevent contact with this substance.

**Eye protection:** The use of safety goggles, safety glasses or face shield is recommended. If vapour

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exposure causes eye discomfort a 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:** White flowable, suspension liquid.

**Flammability:** Not flammable.

**Flash point:** Not applicable.

**Explosive properties:** Not explosive.

**Solubility:** Forms a suspension.

**Density:** 1.078 g/l (20 °C).

**pH:** 5 to 9.

**Density:** 1.10 g/ml (20 °C).

### 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.

**Stability:** Considered stable under normal temperatures and storage conditions.

**Incompatibility:** Avoid contact with strong basic, acidic or oxidizing materials.

**Hazardous decomposition products:** None under normal conditions of storage and use

### 11. TOXICOLOGICAL INFORMATION

**Acute oral LD<sub>50</sub> rats:** > 2000 mg/kg.

**Acute dermal LD<sub>50</sub> rats:** > 2000 mg/kg.

**Acute inhalation LC<sub>50</sub> rats:** > 3.38 mg/l.

**Acute skin irritation:** Mild irritant.

**Acute eye irritation:** Non-irritant.

**Dermal sensitisation:** May cause sensitisation to skin.

### 12. ECOLOGICAL INFORMATION

**Mobility, Degradability & Accumulation: Quinoxifen**

Slowly biodegraded in plants, animals and soil. However, hydrolysis under acidic conditions, aqueous photolysis, and strong sorption to soils/sediment are important degradation/dissipation processes. **Quinoxifen** and its residues have negligible leaching potential and will not

pose a threat to groundwater. Animals In rats, moderately rapidly absorbed (up to 70%) and rapidly excreted. Extensively metabolised, by cleavage to form 4-fluorophenol and 5,7-dichloro-4-hydroxyquinoline, with subsequent conjugation. Metabolism in goats, cows and hens studied. Plants only slightly metabolised in wheat, with low residues found in the crop (idem, ibid.). Extensively photodegraded on the wheat leaf surface, giving multiple polar degradation products. On grapes and cucumbers grown under glass, the main residue was unchanged **Quinoxifen**. Soil/Environment Soil DT<sub>50</sub> (field) 11–454 d (biphasic, 10 trials); DT<sub>90</sub> (field) >1 y, but does not accumulate under normal practice. DT<sub>50</sub> (lab., aerobic) 106–508 d (7 soils, 20–25 °C); DT<sub>50</sub> (lab., anaerobic) 289 d (20 °C). Minimal soil photolysis (est. DT<sub>50</sub> (field) >1 y). The main metabolite (2-oxoquinoxifen; previously designated incorrectly as 3-hydroxyquinoxifen) is formed by oxidation of the quinoline ring, and the minor metabolite (5,7-dichloro-4-hydroxyquinoline, DCHQ) is formed by cleavage of the ether bridge, especially in acidic soil. K<sub>oc</sub> 15 415–75 900; **Quinoxifen** and its residues have no significant leaching potential. Water For aqueous hydrolysis in the dark, see Stability. Photolysis in water is more significant, DT<sub>50</sub> 1.7 h (June), 22.8 h (December). In dark water/sediment systems, quinoxifen rapidly migrates from water to sediment (dissipation DT<sub>50</sub> 3–7 d) and is moderately degraded, system DT<sub>50</sub> (lab.) 35–150 d, to give 2-oxoquinoxifen (see above). Air No significant volatile losses are expected following application. Any small amounts present in air are estimated to degrade with atmospheric DT<sub>50</sub> 1.88 d.

**ECOTOXICOLOGY:** (Based On **Quinoxifen TECHNICAL**)

**Birds:**

LD<sub>50</sub>: LD<sub>50</sub> for bobwhite quail >2250 mg/kg. LC<sub>50</sub> (8 d) for bobwhite quail and mallard ducks >5620 mg/kg diet.

**Fish:** LC<sub>50</sub> (96 h) for rainbow trout 0.27, bluegill sunfish >0.28, common carp 0.41 mg/l.

**Daphnia:** EC<sub>50</sub> (48h): 0.08 mg/l

**Bees:** LD<sub>50</sub> (48h) (oral & contact): > 100 µg/bee

**Earthworms:** LC<sub>50</sub> (14d): (14 d) >923 mg/kg soil

**Algae:** EbC<sub>50</sub>: (72 h) for *Selenastrum capricornutum* 0.058 mg/l

### 13. DISPOSAL CONSIDERATION

**Pesticide 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

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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. If burning of the container is allowed, stay out of smoke.

**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  
**ADR/IRD:**  
 Class: 9  
 Packaging group: III  
 Shipping name: Environmentally Hazardous Substance, Liquid, N.O.S (Quinoxyfen 250 g/l)

**IMDG/IMO:**  
 Class: 9  
 Packaging group: III  
 Shipping name: Environmentally Hazardous Substance, Liquid, N.O.S (Quinoxyfen 250 g/l)

**ICAO/IATA:**  
 Class: 9  
 Packaging group: III  
 Shipping name: Environmentally Hazardous Substance, Liquid, N.O.S (Quinoxyfen 250 g/l)

Considered a marine and fresh water pollutant.

### 15. REGULATORY INFORMATION

**Symbol:** X<sub>n</sub>, N

**Indication of danger:** Irritant, Harmful, environmentally hazardous, Toxic to aquatic organisms.

**Risk phrase(s):**  
**R 22** Harmful if swallowed.  
**R 43** Toxic by inhalation.  
**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 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 46** If swallowed, seek medical advice immediately and show container or label.  
**S 61** Avoid release to the environment. Refer to special instructions/safety data sheets.

### 16. OTHER INFORMATION

**Packaging:** Packed in 1, 2, 5, 10, 20 and 25 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 and use of the product. It is not applicable to unusual or non-standard use 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:** November 2013  
**Reviewed:** March 2019  
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For detailed information on revisions, contact the Registration holder.

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