

TIVOLI 240 SC

SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: TIVOLI 240 SC
Other identifier: Spirotetramat 240 SC
Recommended use: Insecticide
Restrictions on use: Agriculture

Supplier: Villa Crop Protection (Pty) Ltd.
Co. Reg. No.: 1992/002474/07
PO Box 10413
Aston Manor, 1630, South Africa
Telephone: (011) 3962233
Fax: (011) 3964666
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	Skin Sensitisation 1A	H317
Eye	Eye Irritation 2	H319
Specific Target Organ Toxicity Single Exposure	STOT SE 3	H335
Reproductive Toxicity	Reproductive toxicity 2	H361fd
Environment		
Aquatic acute	Aquatic acute 2	H401
Aquatic chronic	Aquatic chronic 2	H411

The most important adverse effects:
Physiochemical effects: None known.
Human health effects:
Suspected of damaging fertility or the unborn child.
Causes serious eye irritation.
May cause an allergic skin reaction.
May cause respiratory irritation.

Label elements:



Signal word: Warning.

Hazard statements:

H317: May cause an allergic skin reaction.
H319: Causes serious eye irritation.
H335: May cause respiratory irritation.
H361fd: Suspected of damaging fertility or the unborn child.
H401: Toxic to aquatic life.
H411: Toxic to aquatic life with long lasting effects.

Precautionary statements:

P203: Obtain, read and follow all safety instructions before use.
P261: Avoid breathing mist, vapours and spray.
P264+P265: Wash hands thoroughly after handling. Do not touch eyes.
P271: Use only outdoors in a well-ventilated area.
P272: Contaminated work clothing should not be allowed out of the workplace.
P273: Avoid release into the environment.
P280: Wear impervious rubber gloves and boots, protective clothing and chemical safety goggles.
P302+P352: IF ON SKIN: Wash with plenty of water and non-abrasive soap.
P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P318: IF exposed or concerned, get medical advice.
P319: Get medical help if you feel unwell.
P333+P337+P317: If skin irritation or rash occurs or if eye irritation persists: Get medical help.
P391: Collect spillage.
P403+P233: Store in a well-ventilated place. Keep container tightly closed.
P405: Store locked up.
P501: Dispose of contents/container in accordance with local regulations.

Special labelling of certain mixtures:

None known.

Other hazards:

None known.

Toxicity:

Classification according to GHS: Unclassified.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Substance/Mixture: Mixture.

Composition:

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Chemical Name	CAS	Conc. (m/v%)	Classification EC 1272/2008
Spirotetramat	203313-25-1	24 %	Skin Sensitisation 1A (H317) Eye Irritation 2 (H319) STOT SE 3 (H335) Reproductive toxicity 2 (H361fd) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)

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. Immediately consult a doctor.

Inhalation: Remove person from contaminated area to fresh air and assist breathing as needed. If breathing has stopped, perform artificial respiration and administer oxygen. Avoid mouth-to-mouth resuscitation. Treat symptomatically and supportively. Seek medical attention if irritation persists.

Skin: Remove contaminated clothing and shoes. Gently wipe off excess chemical. Wash skin gently and thoroughly with water and non-abrasive soap. If irritation persists or sensitization is suspected, obtain medical attention.

Eyes: Immediately flush eyes with clean water for at least 15-20 minutes. Lift eyelid (s) to facilitate irrigation. If present, remove contact lenses after 5 minutes and continue rinsing. **Seek medical attention if irritation persists.**

Ingestion: **Seek medical attention immediately.** Do NOT induce vomiting unless instructed to do so by a poison control centre or doctor. If the person is alert, rinse mouth thoroughly with water. Do not give anything by mouth to an unconscious person.

Anticipated acute effects:

Causes serious eye irritation.

May cause an allergic skin reaction.

May cause respiratory irritation.

Anticipated delayed effects: Suspected of damaging fertility or the unborn child.

Most important symptoms/effects: None known.

Advice to physician: There is no specific antidote available. Treat symptomatically and supportively. If ingested, consider gastric lavage only if treatment is received within 2 hours after ingestion.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media: Use water spray, foam, carbon dioxide or sand.

Unsuitable Extinguishing Media: High volume water jet.
Specific hazards: Combustion may result in the release of the following gases: carbon monoxide, hydrogen cyanide and oxides of nitrogen.

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. Keep upwind. Avoid inhaling hazardous vapours and fumes from burning materials. 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. Do not use high volume water jet, due to contamination risk. Do not scatter the burning material. Contain fire control agents and wastewater 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 bunker gear.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Avoid contact with eyes and skin. Do not breathe in fumes. 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 as the product is classified to be toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment. Any spillages or uncontrolled discharges into water courses should be immediately reported to the police and the Department of Water/Environmental Affairs.

Methods and Materials for Containment: Contain spilled product by diking area with sand, earth, silica gel or sawdust.

Methods and Materials for Clean-up: Cover contained spill with an inert absorbent material such as sand, silica gel, 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.

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7. HANDLING AND STORAGE

Handling:

Precautions for safe handling: Ensure adequate ventilation during handling and use. Do not breathe in spray, mist or vapours. Avoid contact with eyes and skin. 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 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 again.

Storage:

Conditions for safe storage: Keep out of reach of unauthorised persons, children and animals. Store in original labelled container in an isolated, dry, cool and well-ventilated area. Avoid excess heat. Keep out of direct sunlight. Avoid cross contamination with other pesticides and fertilisers. Local regulations should be complied with.

Incompatible substances and mixtures: Refer to product label.

Packaging material: Plastic containers.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Permissible concentration

Components	Exposure limits	Type of exposure limit	Source
Spirotetramat	2.8 mg/m ³	TWA	OES

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 OSHA PELs 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: If inhalation is likely to occur (airborne concentrations exceed exposure limits), use a NIOSH approved air-purifying respirator with cartridges/canisters.

Hand Protection: The employee must wear appropriate chemically resistant gloves, e.g. nitrile rubber gloves, to prevent contact with this mixture.

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

Skin and Body Protection: Employee must wear appropriate impervious clothing and equipment (according to exposure level) to prevent repeated or prolonged skin contact with this mixture.

Emergency eyewash: Where there is any possibility that an employee's eyes may be exposed to this mixture; the employer should provide an eyewash fountain or appropriate alternative within the immediate work area for emergency use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: White liquid.

Odour: Characteristic.

pH (1% aqueous dilution): 4.0 – 7.0.

Melting point: Not available.

Freezing Point: Not available.

Boiling Point: Not available.

Flash Point: > 100°C.

Flammability: Not flammable.

Upper/lower explosion limits: Not available.

Vapour Pressure (mm Hg): Not available.

Relative Vapour Density: Not available.

Density/Relative density: 1.075 g/cm³ at 20 °C.

Solubility: Not available.

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: Product is stable at ambient temperature and pressure, under normal storage and handling conditions.

Reactivity: None known.

Possibility of Hazardous Reactions: None Known.

Conditions to Avoid: Avoid extreme heat and exposure to flames or direct sunlight.

Incompatible Materials: None known.

Hazardous Decomposition Products: Combustion may release toxic and irritant vapours for example, Carbon monoxide, Nitrogen oxides, Hydrogen cyanide.

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY:

Calculated according to GHS

Oral LD₅₀ (24 h) rat > 5100 mg/kg.

Dermal LD₅₀ (24 h) rat > 8700 mg/kg.

Inhalation LC₅₀ (4 h) rat >18 mg/ℓ.

Skin Irritation/Corrosion: Not available.

Eye Damage/Irritation: Causes serious eye irritation.

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Skin Sensitization: Is a skin sensitizer, may cause an allergic skin reaction.

Respiratory Sensitization: Not available.

Reproductive cell mutagenicity: Not available.

Carcinogenicity: Not available.

Reproductive toxicity: Suspected of damaging fertility or the unborn child.

Specific target organ toxicity – single exposure: May cause respiratory irritation.

Specific target organ toxicity – repeated exposure: Not available.

Aspiration hazard: Not available.

Chronic Effects: Not available.

POTENTIAL ADVERSE EFFECTS:

No significant adverse effects are expected to develop when used as recommended and using personal protective equipment referred to in Section 8.

12. ECOLOGICAL INFORMATION

This product is toxic to aquatic life with long lasting effects.

ECOTOXICITY DATA (based on Spirotetramat TC):

Fish:

LC ₅₀ (96 h):	Bluegill sunfish	2.54 mg/ℓ.
	Rainbow trout	2.20 mg/ℓ.

Daphnia:

EC ₅₀ (48 h)		> 42.7 mg/ℓ.
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Algae:

E _r C ₅₀ (72h)	<i>P. subcapitata</i>	> 2.2 mg/ℓ.
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Birds:

LD ₅₀	Bobwhite quail	> 2 000 mg/kg.
Dietary LC ₅₀ (5 d)	Mallard ducks	> 475 mg/kg.

Bees:

LD ₅₀ (contact) (48 h)		> 100 mg/bee.
LD ₅₀ (oral) (48 h)		107.3 mg/bee.

Worms:

LC ₅₀ (14 d)	<i>Eisenia foetida</i>	> 1000 ppm.
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Plants:

The metabolic pathway is similar across all target crops investigated (apple, cotton, lettuce and potato); unchanged parent compound was the major residue in apple fruit and leaves, cotton lint, lettuce, and potato leaves; the major residue in cotton seeds and potato tubers was the enol formed by hydrolysis of spirotetramat; other significant metabolites include the enol glucuronide conjugate, and ketohydroxy and monohydroxy metabolites. Residues from aged soil, taken up and metabolised by rotational crops (wheat, Swiss chard, turnips) were essentially similar in each crop, but quite different from the residues in target crops; the ketohydroxy metabolite was the main residue taken up, giving metabolites ketohydroxy alcohol, desmethyl-ketohydroxy, and desmethyl-di-hydroxy and their glucose conjugates.

ENVIRONMENTAL EFFECTS:

Persistence and degradability: In soil DT₅₀ <1 d (parent); 5 to 23 d (metabolites). No concern with regard

to groundwater contamination for parent or metabolites. No negative effect on microbial mineralisation. Aquatic DT₅₀ (aerobic) <1 d, (anaerobic) c. 3 d. DT₅₀ for aqueous photolysis c. 3 d. Soil K_d 4.39 ml/g; mean K_{oc} 289 ml/g; moderately mobile.

Bio-accumulative Potential: Does not bio-accumulate.

Mobility in soil: Moderately mobile.

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. Waste should only be handled by licensed facilities.

Container: Emptied containers retain product residues. Do not re-use the empty container for any other purpose. Invert the empty container over the spray or mixing tank and drain for at least 30 seconds after the flow has slowed down to dripping. Thereafter rinse the empty container three times in succession with one quarter of the container volume fresh water and decant the rinsate into the spray or mixing tank. 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/RID:

Class: 9
 Packaging group: III
 Shipping name: ENVIRONMENTALLY
 HAZARDOUS SUBSTANCE,
 LIQUID, N.O.S.
 (Spirotetramat 240 SC)

Maritime Transport IMDG/IMO:

Class: 9
 Packing group: III
 Shipping name: ENVIRONMENTALLY
 HAZARDOUS SUBSTANCE,
 LIQUID, N.O.S.
 (Spirotetramat 240 SC)

Marine Pollutant: Yes

Air Transport IATA/ICAO:

Class: 9
 Packaging group: III

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Shipping name: ENVIRONMENTALLY
 HAZARDOUS SUBSTANCE,
 LIQUID, N.O.S.
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Special/Environmental Precautions: Refer to sections 4 to 8 of this document.

Transport in bulk (according to MARPOL 73/78, Annex II and the IBC code): Not applicable.

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 50, 100, 150, 200, 250, 500 millilitres and 1, 2, 5, 10, 20, 25 & 50 litres plastic containers, labelled according to South African regulations and guidelines.

Other hazard statements, abbreviations and explanations:

H400: Very toxic to aquatic life.

H410: Very toxic 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.

LD₅₀ 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

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For detailed information on revisions, contact the Registration holder.