

VILLA TERBUSIEN SUPER 600 SC

SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: TERBUSIEN SUPER 600 SC
Other identifier: Atrazine + Terbutylazine 600 g/l
Recommended use: Herbicide
Restrictions on use: Agriculture

Supplier: Villa Crop Protection (Pty) Ltd.
 1994/
 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:
 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. HAZARDS IDENTIFICATION

UN GHS, Regulation EC 1272/2008 [EU-GHS/CLP] EU & SANS 10234:2008		
Hazard classes	Hazard categories	H-statements
Health		
Dermal	Skin Irrit. 3 Skin Sens. 1	H316 H317
Specific Target Organ Toxicity Repeated Exposure	STOT RE 2	H373
Environment		
Aquatic chronic	Aquatic Chronic 1	H410

The most important adverse effects:
Physiochemical effects:
 None known.
Human health effects:
 May cause damage to organs through prolonged or repeated exposure.
Label elements:



Signal word: Warning
Hazard statements:
 H316: Causes mild skin irritation.
 H317: May cause an allergic skin reaction.
 H373: May cause damage to organs through prolonged or repeated exposure.
 H410: Very toxic to aquatic life with long lasting effects.
Precautionary statements:
 P273: Avoid release to the environment.
 P280: Wear impervious rubber gloves and chemical safety goggles.
 P302/352: IF ON SKIN: Wash with plenty of water and soap.
 P333/313: If skin irritation or rash occurs: Get medical advice.
 P391: Collect spillage.
 P501: Dispose of contents/container in accordance with local regulations.
Special labelling of certain mixtures:
 Yellow band according to WHO calculations.
 Green band according to GHS calculations.
Other hazards:
 None known.
Toxicity:
 Classification according to GHS: Non-classified
 Classification according to WHO: Category II
 Classification according to GPIC:
 Atrazine - Category III
 Terbutylazine - Unclassified

3. COMPOSITION / INFORMATION ON INGREDIENTS

Substance/Mixture: Mixture
Composition:

Chemical Name	CAS	Conc. (m/v %)	Classification EC 1272/2008
Atrazine	1912-24-9	30%	Skin Sens. 1 (H317) STOT RE 2 (H373) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)
Terbutylazine	5915-41-3	30%	Acute Tox. 4 (H302) STOT RE 2 (H373) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)

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Arkopol N060	9016-45-9	< 5%	Acute Tox. 4 (H302) Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) Aquatic Chronic 2 (H411)
Proxel	2634-33-5	< 5%	Acute Tox. 4 (H302) Skin Irrit. 2 (H315) Eye Dam. 1 (H318) Skin Sens. 1 (H317) Aquatic Acute 1 (H400)

Specific hazards: Fire may produce irritating and/or toxic vapours, mists or other products of combustion.

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. 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. 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.

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. Consult a doctor.

Inhalation: Remove person from contaminated area to fresh air and assist breathing as needed. Seek medical attention if patient feels unwell.

Skin: Remove contaminated clothing and shoes. Gently wipe off excess chemical. Wash skin gently and thoroughly with water and non-abrasive soap. Obtain medical attention if irritation persists.

Eyes: Flush eyes with clean water. Lift eyelids to facilitate irrigation. If present, remove contact lenses and continue rinsing. Seek medical attention if irritation occurs.

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

Anticipated acute effects:

Causes mild skin irritation.
 May cause an allergic skin reaction.

Anticipated delayed effects:

May cause damage to organs through prolonged or repeated exposure.

Most important symptoms/effects: None known.

Advice to physician: Treat symptomatically and supportively. No specific antidote known. If large amounts have been ingested, perform gastric lavage and administer activated charcoal.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media: Use carbon dioxide or dry chemical for small fires and water fog or foam for large fires.

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

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Avoid contact with skin and eyes.

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 organisms and will cause long-term adverse effects in the aquatic environment. 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 spilled 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.

7. HANDLING AND STORAGE

Handling:

Precautions for safe handling: Avoid contact with skin and eyes. Do not handle broken packages without protective equipment. Immediately clean up spills that

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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: Polyethylene containers and drums.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

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.

Respiratory Protection: If used as instructed on the label, no respiratory protection should be needed.

Hand Protection: The use of chemically protective impervious gloves is recommended to prevent against skin contact.

Eye Protection: This product is not classified as an eye irritant, however the use of chemical safety goggles is recommended to prevent against eye contact. Contact lenses are not protective eye devices.

Skin and Body Protection: Employee must wear appropriate protective impervious clothing; Rubber 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: A homogenous, slightly white to beige flowable liquid.

Odour: Not available.

pH: 6 to 8.

Melting point: Not available.

Freezing Point: Not available.

Boiling Point: Not available.

Flash Point: Not determined – water based.

Flammability: Not flammable.

Upper/lower explosion limits: Not available.

Vapour Pressure (mm Hg): Not available.

Relative Vapour Density: Not available.

Density: 1.112 ± 0.05 g/ml (20 °C).

Solubility: Suspends in water.

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: 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: None known.

Possibility of Hazardous Reactions: Will not occur.

Conditions to Avoid: Extreme heat or exposure to flames.

Incompatible Materials: Product is compatible with most other pesticides when used at normal rates. However, a compatibility test is required before using with other products. Do not physically mix concentrate directly with other herbicides or pesticide concentrates; always dilute first. The product may flocculate in the presence of **Paraquat**.

The product is relatively stable in neutral, weakly acidic and weakly alkaline media. The product is rapidly hydrolyzed to the hydroxy derivative in strong acids and alkalis.

Hazardous Decomposition Products: Alcohols. Carbon monoxide and carbon dioxide may form under burning conditions or with incomplete combustion.

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY:

Calculated according to GHS

Oral > Category 4 (LD₅₀ > 2700 mg/kg)

Dermal > Category 4

Inhalation > Category 4

Skin Irritation: Causes mild skin irritation.

Eye Damage/Irritation: None known.

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Skin Sensitization: May cause an allergic skin reaction.
Respiratory Sensitization: None known.
Reproductive cell mutagenicity: None known.
Carcinogenicity: None known.
Reproductive toxicity: None known.
Specific target organ toxicity – single exposure: None known.
Specific target organ toxicity – repeated exposure: May cause damage to organs through prolonged or repeated exposure.
Aspiration hazard: None known.
Chronic Effects: None known.
POTENTIAL ADVERSE EFFECTS:
Inhalation: Not available.
Skin contact: Not available.
Eye contact: Not available.
Ingestion: May be harmful if swallowed.

Bio-accumulative Potential: Not determined.
Mobility in soil: Not determined.
Other adverse effects: Not determined.

ECOTOXICITY DATA: Terbutylazine TC

Fish:
 LC₅₀ (96 h) Rainbow trout 2.2 mg/l.
 Mirror carp > 5.7 mg/l.

Daphnia:
 EC₅₀ (48 h) ≥ 69.3 mg/l.

Algae:
 EC₅₀ (72 h) *Scenedesmus subspicatus* 0.016 mg/l.

Birds:
 Acute oral LD₅₀ Ducks
 Japanese quail > 2000 mg/kg.
 Quail & Ducks > 5620 ppm.

Dietary LC₅₀ (8 d)
Bees:
 LD₅₀ oral & contact > 200 mg/bee.

Worms:
 LC₅₀ (14 d) Earthworms > 1000 mg/kg soil.

Plants: Triazine-tolerant plants (e.g. maize) rapidly dechlorinate terbutylazine to hydroxy-terbutylazine. Various amounts of de-ethylated and hydroxy de-ethylated metabolites are produced, depending on the plant species.

ENVIRONMENTAL EFFECTS:
Persistence and degradability: Median DT₅₀ (field) 17.4 (6.5 – 149, 9 sites). In water-sediment systems, terbutylazine dissipates with a DT₅₀ of 33-73 d in the whole system.

Bio-accumulative Potential: Not determined.
Mobility in soil: Adsorption on soil is medium K_{FOC} 224 (162 – 333, 12 soils). Terbutylazine is only slightly mobile.

Other adverse effects: Not determined.

12. ECOLOGICAL INFORMATION

This product is considered a marine pollutant.

ECOTOXICITY DATA: Atrazine TC

Fish:
 LC₅₀ (96 h) Rainbow trout 11 mg/l.
 Guppies 4.3 mg/l.

Daphnia:
 EC₅₀ (48 h) ≥ 29 mg/l.

Algae:
 EC₅₀ (72 h) *Scenedesmus subspicatus* 0.043 mg/l.

EC₅₀ (96 h) *Pseudokirchneriella subcapitata* 0.01 mg/l.

Birds:
 Acute oral LD₅₀ Bobwhite quail 940 mg/kg.
 Mallard ducks

Japanese quail > 2000 mg/kg.

Dietary LC₅₀ (8 d) Japanese quail > 5000 mg/kg.
 Mallard duck > 1563 mg/kg.

Bees:
 LD₅₀ contact > 100 mg/bee.
 LD₅₀ oral > 97 mg/bee.

Worms:
 LC₅₀ (14 d) *Eisenia foetida* > 78 mg/kg soil.

Plants: In tolerant plants, atrazine is readily metabolised to hydroxyatrazine and amino acid conjugates, with further decomposition of hydroxyatrazine by degradation of the side chains and hydrolysis of the resulting amino acids on the ring, together with evolution of CO₂. In sensitive plants, unaltered atrazine accumulates, leading to chlorosis and death.

ENVIRONMENTAL EFFECTS:

Persistence and degradability: Field DT₅₀ 16-1174d (median 38.5 d), the longer values being from cold or dry conditions. DT₅₀ 14-20 d in the water. DT₅₀ under groundwater conditions 105 - > 200 d.

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: Emptied containers retain product residues. Do not re-use the empty container for any other purpose. Triple rinse empty containers by inverting the empty container over the spray or mixing tank and allow draining

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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 third of that of the container. Add the rinsings to the contents of the spray tank before destroying the container in the prescribed manner. Destroy the container by perforating and flattening and dispose of through an approved waste dump site, incineration plant or recycling company. Observe all labelled safeguards until container is destroyed.

14. TRANSPORT INFORMATION

UN Number: 3082
Road Transport ADR/IRD:
 Class: 9
 Packaging group: III
 UN Proper Shipping Name: Environmentally hazardous substance, Liquid, N.O.S. (Atrazine 300 g/l + Terbutylazine 300 g/l)
Maritime Transport IMDG/IMO:
 Class: 9
 Packaging group: III
 UN Proper Shipping Name: Environmentally hazardous substance, Liquid, N.O.S. (Atrazine 300 g/l + Terbutylazine 300 g/l)
Marine Pollutant (Y/N): Yes.
Air Transport IATA/ICAO:
 Class: 9
 Packaging group: III
 UN Proper Shipping Name: Environmentally hazardous substance, Liquid, N.O.S. (Atrazine 300 g/l + Terbutylazine 300 g/l)

Special/Environmental Precautions: Wedge drums tightly to avoid movement.
Transport in bulk (according to MARPOL 73/78, Annex II and the IBC code): Not available.

15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation for the mixture:
 OSHA 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 1, 5, 10, 20 and 25 litres polyethylene containers and drums, labelled according to South African regulations and guidelines.

Additional H statements (of individual formulants, but which did not apply to the formulation after GHS calculation):

H302: Harmful if swallowed.

H315: Causes skin irritation.

H318: Causes serious eye damage.

H319: Causes serious eye irritation.

H400: Very toxic to aquatic life.

H411: Toxic to aquatic life with long lasting effects.

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: November 2018
Reviewed: September 2019
Revision no.: (2)
Next revision: September 2024

For detailed information on revisions, contact the Registration holder.