

VILLA TETRAMET SC

MATERIAL SAFETY DATA SHEET

1. PRODUCT & COMPANY IDENTIFICATION

Product Name: TETRAMET SC
 Herbicide
UN No.: 3082
Supplier: Villa Crop Protection (Pty) Ltd
 PO Box 10413,
 Aston Manor, 1630, South Africa
Telephone: (011) 396 2233
Fax: (011) 396 4666
Website: www.villacrop.co.za

Emergency telephone numbers:
24 Hr Transport / Spill emergency no:
 Bateleur: +27 86 199 9071
 (Client: Villa Crop Protection)
Poisoning:
 Griffon Poison Information Centre +27 82 446 8946
 Western Cape Poison Centre +27 861 555 777
 Tygerberg Hospital +27 21 931 6129

2. COMPOSITION/INFORMATION ON INGREDIENTS

Common Name: 1) atrazine plus
 2) terbuthylazine
 3) metolachlor
 4) Benoxacor

Chemical Name: 1) 6-chloro-N²-ethyl-N⁴-isopropyl-1,3,5-triazine-2,4-diamine (IUPAC);
 2) N²-tert-butyl-6-chloro-N⁴-ethyl-1,3,5-triazine-2,4-diamine (IUPAC)
 3) 2-chloro-6'-ethyl-N-(2-methoxy-1-methylethyl)aceto-o-toluidide (IUPAC)
 4) (±)-4-dichloroacetyl-3,4-dihydro-3-methyl-2H-1,4-benzoxazine (IUPAC)

CAS No.: 1) 1912-24-9;
 2) 5915-41-3
 3) 51218-45-2
 4) 98730-04-2

Chemical Family: 1) Triazine, 2) Triazine,
 3) chloroacetanilide
 4) herbicide safener

Chemical Formula: 1) C₈H₁₄ClN₅; 2) C₉H₁₆ClN₅
 3) C₁₅H₂₂ClNO₂ 4) C₁₁H₁₁Cl₂NO₂

Molecular weight: 1) 215.7; 2) 229.7
 3) 283.8; 4) 260.1

Use: A suspension concentrate herbicide with safener for selective control of most annual broadleaf weeds as well as grasses in maize.

Formulation: atrazine 174 g/l plus
 terbuthylazine: 174 g/l plus
 chloroacetanilide 252 g/l
 plus safener 8 g/l
 Soluble Concentrate

Hazardous ingredients of toxicological concern:

Inert:	concern:	% present:
atrazine:	water contamination high risk	17 % w/w
terbuthylazine:	harmful	17 % w/w
chloroacetanilide:		25 % w/w

Symbols: Xi, Xn, N
Risk-phrase(s): R 23/24/25, R 36/38, R48/22, R43, R50, R53

3. HAZARD IDENTIFICATION

Toxicity class:
 WHO II (a.i.)
 Moderately hazardous.

Likely routes of exposure:
 Skin contact, ingestion, and inhalation.

Ingestion:
 Harmful when swallowed

Inhalation:
 Harmful by inhalation. May cause irritation to respiratory tract.

Eye and Skin contact:
 May cause irritation to the skin and eyes. Skin (allergic) reaction may occur. May cause skin sensitisation. Irritant. Cause dermatitis through defatting of tissue. Aspiration into lungs may cause chemical pneumonites.

4. FIRST AID MEASURES AND PRECAUTIONS

Irritant effects on skin and mucous membrane are the most common reactions. Symptoms of poisoning include abdominal pain, diarrhea and vomiting, eye irritation, irritation of mucous membranes and skin irritations.

Inhalation:
 Immediately remove source of contamination or move victim to fresh air. If breathing has stopped, perform artificial respiration and administer oxygen. Keep person warm and at rest. Treat symptomatically and supportively as and when required. **Seek medical advice immediately.**

Skin contact:
 Remove contaminated clothing, shoes and leather goods immediately. Gently wipe of excess chemical. Wash skin gently and thoroughly with non-abrasive soap or mild detergent and large amounts of water until no evidence of chemical remains (approximately 15 to 20 minutes). Seek medical advice if necessary.

VILLA TETRAMET SC

MATERIAL SAFETY DATA SHEET

Eye contact:

Flush eyes immediately with large amounts of gently flowing cold water or normal saline solution, occasionally lifting upper and lower lids, until no evidence of chemical remains (approximately 15 to 20 minutes). If irritation persists, get medical attention.

Ingestion:

Have patient rinse mouth thoroughly with water. Do not induce vomiting. Obtain medical advice immediately. Remove by gastric lavage and catharsis. Maintain blood pressure and airway. Give oxygen if respiration is depressed. Do not perform gastric lavage if victim is unconscious. Administration of gastric lavage or oxygen should be performed by qualified medical personnel.

Antidote:

No specific antidote. Treat symptomatically and supportively.

Advice to physician:

There is no specific antidote for the organonitrogen compounds. Keep patient under observation and treat symptomatically as indicated by his/her condition.

No signs and symptoms of triazine poisoning are known or expected in humans. When large amounts have been ingested, consider gastric lavage or administer activated charcoal with water.

5. FIRE FIGHTING MEASURES

Fire/Explosion hazard:

Flammable properties:

Flammable: Non-Flammable

Extinguishing agents:

Extinguish fires with carbon dioxide, dry powder, or alcohol-resistant foam. Water spray can be used for cooling of unaffected stock, but avoid water coming in contact with the product. Use as little water as possible. Use spray or fog. Solid stream may cause spreading. Contain water used for fire fighting for later disposal. Avoid the accumulation of polluted run-off from the site.

Fire fighting:

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 unmanned 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. Do not scatter the material. 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.

Special Hazards:

This product will emit toxic fumes when burned, including carbon monoxide. May produce irritating or poisonous mists or other products of combustion.

Personal protective equipment:

Fire may produce irritating or poisonous vapours or gases (oxides of chlorine and sulphur) 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:

Avoid contact with skin and eyes. Do not breathe in fumes. For personal protection see Section 8.

Environmental precautions:

Product is toxic to fish and very toxic to algae. Is an environmentally hazardous substance.

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:

Do not touch-spilled material; stop leak if you can do it without risk. Keep out unprotected persons and animals.

For spills: Soak up with absorptive material such as lime, damp earth or sand or other suitable non-combustible absorbent material. 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. Prevent material from spreading by damming in with absorptive material. Do not flush spilled material into drains. Keep spectators away and upwind.

To decontaminate spill area, tools and equipment, wash with a suitable solution (i.e. organic solvent, detergent bleach or caustic). Add the solution to the drums already collected. Label drums with its content and dispose it in accordance with local regulations.

Open burning or dumping of this material is prohibited.

Do not get water inside containers.

7. HANDLING AND STORAGE REQUIREMENTS

Handling:

Harmful if swallowed. Avoid inhalation and contact with eyes and skin. Use with adequate ventilation. Do not handle broken packages without protective equipment. Wash hands before eating, drinking, chewing gum, smoking, or using the toilet. Remove clothing immediately

VILLA TETRAMET SC

MATERIAL SAFETY DATA SHEET

if the product gets inside. Then wash skin thoroughly using a non-abrasive soap and put on clean clothing. Seek medical advice.

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.

Workers should shower at the end of each workday. Launder all clothing before it is re-used again.

Storage:

Keep under lock and key and out of reach of unauthorised persons, children and animals. Store in its original container in dry, cool, well-ventilated area. Avoid excess heat. Not to be stored next to foodstuffs and water supplies.

Keep out of reach of children, uninformed persons and animals. Do not contaminate other pesticides and fertilizers.

Storage stability:

Stable for a period of 2 years under normal warehouse conditions.

8. EXPOSURE CONTROL/PERSONAL PROTECTION

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. Ensure that control systems are properly designed and maintained. Comply with occupational safety, environmental, fire, and other applicable regulations.

PERSONAL PROTECTIVE EQUIPMENT:

It is essential to provide adequate ventilation. Ensure that control systems are properly designed and maintained. Only spark-resistant equipment should be used. Comply with occupational safety, environmental, fire and other applicable regulations.

Clothing:

Employee must wear appropriate protective (impervious) clothing; boots, hat and equipment to prevent repeated or prolonged skin contact with this substance. Do not wear leather clothing.

Gloves:

Employee must wear appropriate chemical resistant protective gloves (PVC or neoprene gloves) to prevent contact with this substance.

Eye protection:

The use of chemical resistant goggles or face shield.

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:

Cream white colour liquid.

Odour:

None.

Relative density:

1.101 gr/m^l

Solubility in water:

Emulsifiable in water. Miscible.

Flash point:

None

Flammability:

Non-flammability

pH:

6.9

10. STABILITY AND REACTIVITY

Stability:

Stable for up to 2 years under normal warehouse conditions.

11. TOXICOLOGICAL INFORMATION

Formulation (calculated):

Acute oral LD₅₀:

Metolachlor: 2780 mg/kg (Technical).

Atrazine: 1780 (Technical)

Terbuthylazine: 2000 – 2160 (Technical)

Acute dermal LD₅₀:

Metolachlor: >3170 mg/kg (Technical).

Atrazine: >3000 (Technical)

Terbuthylazine: >2000 (Technical)

Acute inhalation LC₅₀:

Metolachlor:>1.75 (Technical)

Atrazine: 5.8 (Technical)

Terbuthylazine: 5.8 (Technical)

Acute skin irritation:

Can be moderately irritating to the skin. Skin (allergic) reaction may occur. Irritant. Cause dermatitis through defatting of tissue.

Sensitization:

Skin (allergic) reaction may occur. May cause moderate skin sensitization.

Acute eye irritation:

May cause irritation to the eyes.

Carcinogenicity:

It seems unlikely that this product is carcinogenic in humans.

Teratogenicity / Reproductive hazard:

Teratogenic and developmental effects in humans are unlikely at expected levels of exposure. The product is not

VILLA TETRAMET SC

MATERIAL SAFETY DATA SHEET

likely to have an effect on reproduction in humans under normal circumstances.

Mutagenicity:

A number of studies evaluating the mutagenic potential of the product have all shown the compound to be nonmutagenic.

12. ECOLOGICAL INFORMATION

Atrazine: In mammals, following oral administration, atrazine is rapidly and completely metabolised, primarily by oxidative dealkylation of the amino groups and by reaction of the chlorine atom with endogenous thiols. Diaminochlorotriazine is the main primary metabolite, which readily conjugates with glutathione. More than 50% of the dose is eliminated in the urine and around 33% in the faeces within 24 h. **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. **Soil/Environment** Major metabolites under all conditions are desethylatrazine and hydroxyatrazine.

Terbuthylazine: In mammals, following oral administration, 72-84% is eliminated in the urine and faeces within 24 h, and almost all within 48 h. A de-ethyl metabolite forms rapidly, followed by conjugates of products formed by oxidation of one methyl group of the *tert*-butyl moiety. All are rapidly excreted. **Plants** Triazine-tolerant plants (e.g. maize) rapidly de-chlorinate terbuthylazine to hydroxy-terbuthylazine. Various amounts of de-ethylated and hydroxy de-ethylated metabolites are produced, depending on the plant species.

Soil/Environment Adsorption on soils is strong.

Metolachlor: Rapidly oxidised by rat liver microsomal oxygenases via dechlorination, O-demethylation and side-chain oxidation. **Plants** In plants, metabolism involves natural product conjugation of the chloroacetyl group, and hydrolysis and sugar conjugation at the ether group. Final metabolites are polar, water-soluble, and non-volatile. **Soil/Environment** Major aerobic metabolites are derivatives of oxanilic and sulfonic acids.

ECOTOXICOLOGY: (Technical material)

Birds: Moderately toxic to birds.

Atrazine: LD₅₀: Bobwhite quail: 940 mg/kg
Mallard ducks: >2000 mg/kg

Terbuthylazine: Bobwhite quail: >1000 mg/kg
Mallard ducks: >5620 ppm

Metolachlor: Bobwhite quail: >2150 mg/kg
Mallard ducks: >2150 mg/kg

Fish: Toxic to fish.

Atrazine: LD₅₀: Rainbow trout: 4.5 - 11.0 mg/ℓ

Bluegill sunfish: 16 mg/ℓ
Terbuthylazine: Rainbow trout: 3.8-4.6 mg/ℓ
Bluegill sunfish: 7.5 mg/ℓ
Metolachlor: Rainbow trout: 3.9 mg/ℓ
Bluegill sunfish: 10 mg/ℓ
Daphnia: Very toxic to Daphnia.
Daphnia magna: 48-hour LC₅₀: 25 mg/ℓ

Bees:

Slightly toxic to bees.

LD₅₀ (oral) >97 µg/bee; (contact) >100 µg/bee

Earthworms:

LC₅₀ (14 d) for *Eisenia foetida* 78 mg/kg soil.

Algae: Very toxic to algae.

Scenedesmus subspicatus: EC₅₀: 0.1 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 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.

TRIPLE RINSE empty containers in the following manner: Invert the empty container over the spray or mixing tank and allow to drain 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 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 No.: 3082

Road Transport ADR/IRD:

Class: 6.1

Packing group: III

Shipping name: Environmentally hazardous substance, liquid, N.O.S.
atrazine 174 g/ℓ plus

VILLA TETRAMET SC

MATERIAL SAFETY DATA SHEET

terbuthylazine: 174 g/l plus
 chloroacetanilide 252 g/l

Air Transport ICAO/IATA:

Class: 6.1
 Packing group: III
 Shipping name: Environmentally hazardous substance,
 liquid, N.O.S.

atrazine 174 g/l plus
 terbuthylazine: 174 g/l plus
 chloroacetanilide 252 g/l

Maritime Transport IMDG/IMO:

Class: 6.1
 Packing group: III
 Shipping name: Environmentally hazardous substance,
 liquid, N.O.S.

atrazine 174 g/l plus
 terbuthylazine: 174 g/l plus
 chloroacetanilide 252 g/l

MARINE POLLUTANT

15. REGULATORY INFORMATION

Symbol: Xi, Xn, N.
Indication of danger: Harmful, Irritating substance and environmentally dangerous substance.
Risk-phrase(s): R 23/24/25, R 36/38, R 43, R48/22, R50, R53
R 23/24/25 Toxic by inhalation, in contact with skin and if swallowed.
R 36/38 Irritating to eyes and skin.
R 43 May cause skin sensitisation by skin contact.
R 48/22 Harmful: danger of serious damage to health by prolonged exposure if swallowed.
R 50 Very toxic to aquatic organisms.
R 53 May cause long-term adverse effects in the aquatic environment.

Safety phrases:

S 1/2 Keep under lock and key and out of reach of children.
S 23 Do not breath fumes/vapour/spray.
S 24/25 Avoid contact with skin and eyes.
S 28 After contact with skin, wash immediately with plenty of water.
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.
S 62 If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label

16. OTHER INFORMATION

Packing and Labelling

Packed in 1, 5, 10, 20 & 25 litre 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 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 bit 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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