Conforms to 2001/58/EC and ISO 11014-1

SAFETY DATA SHEET
TYLSIMEX 500 SC

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product name : TYLSIMEX 500 SC

Chemical name of active ingredient(s) : Terbuthylazine: N^2-tert-butyl-6-chloro-N^4-ethyl-1,3,5-triazine-2,4-diamine
Simazine: 6-Chloro-N^2,N^4-diethyl-1,3,5-triazine-2,4-diamine

Company identification : ADAMA South Africa (Pty) Ltd
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2. COMPOSITION/INFORMATION ON INGREDIENTS

Substance/preparation : Preparation

Information on hazardous ingredients *

Common name	CAS No.	%	EC Number	Symbol	R-Phrases
Terbuthylazine	5915-41-3	25 - 27	227-637-9	Not classified	-
Simazine	122-34-9	18 - 21	204-535-2	Xn,N	R40-50/53

* ***Occupational Exposure Limit(s), if available, are listed in section 8***

3. HAZARDS IDENTIFICATION

Most important hazards : Limited evidence of a carcinogenic effect. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

4. FIRST-AID MEASURES

Effects and symptoms

First-aid measures : Remove victim from area of exposure. Wash off remaining material with plenty of water.

Inhalation : Remove victim to fresh air. If breathing is difficult: artificial respiration. Get medical attention.

Ingestion : Wash out mouth with plenty of water. Get medical attention. Never give anything by mouth to an unconscious person.

Skin contact : Remove contaminated clothing. Wash away remainder with water and soap.

Eye contact : Wash out with plenty of water with the eyelid held wide open for at least 15 minutes. Get medical attention.

Notes to a physician : There is no specific antidote. Treat symptomatically and give supportive therapy.

Protection of first-aiders : Use appropriate protection (see section 8).

5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable : Dry chemical, water spray, foam, carbon dioxide.

Hazardous thermal (de)composition products : Chloride compounds and nitrogen oxides.

Protection of fire-fighters : Self-contained breathing apparatus and total protection required in enclosed areas.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions : Wear suitable protective clothing.

Environmental precautions : Do not discharge into drains or the environment.

Methods for cleaning up : Absorb remainder in sand or other inert material. Dispose of in an authorized waste collecting point.

7. HANDLING AND STORAGE

Handling : Ventilation required.

Storage : Keep only in the original container. Keep in a cool, dry, well ventilated place away from direct sunlight.

Packaging materials

Suitable : High density polyethylene extrusion blow containers.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering measures : Ventilation required.

Hygiene measures : When handling do not eat, drink or smoke. Wash hands thoroughly after handling. Wash clothing separately before re-use.

Occupational Exposure Limits

Common name : **Terbuthylazine**
: Not established

Common name : **Simazine**
: Not established

Personal protective equipment

Respiratory system : Respiratory protection is not required if good ventilation is maintained.

Skin and body : Wear suitable protective clothing. Chemical resistant boots.

Hands : Chemical resistant gloves.

Eyes : Safety goggles or face shield.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state : Liquid

Colour : Whitish

Odour : Faint odour

Boiling point	: 100°C (Water)
Density	: 1.1 ± 0.02 g/mL @ 20°C
Vapour pressure	: 0.15 mPa @ 25°C (Terbuthylazine) 0.003 mPa @ 25°C (Simazine)
Solubility in water	: 8.5 ppm @ 20°C (Terbuthylazine) 6.2 - 7 ppm @ 25°C (Simazine)
Octanol/water partition coefficient	: log = 3.04 (Terbuthylazine) log = 2.19 (Simazine)
pH	: 6 - 8 CIPAC, MT 75.
Flammability	: Not flammable
Explosion properties	: Not explosive
Oxidation properties	: Not oxidizing

10. STABILITY AND REACTIVITY

Stability	: Not subject to polymerization.
Materials to avoid	: Oxidizing agents, acids and alkali.
Hazardous reactions	: None
Hazardous decomposition products	: Chloride compounds and nitrogen oxides.

11. TOXICOLOGICAL INFORMATION

Preparation
Estimated from toxicity data of constituents

Acute toxicity - Oral	: LD_{50} (rat) > 2,000 mg/kg
Acute toxicity - Dermal	: LD_{50} (rat) > 2,000 mg/kg
Acute toxicity - Inhalation	: LC_{50} (rat) > 5 mg/L (4 hours)
Common name	: **Terbuthylazine**
Chronic toxicity	: NOEL (rat) = 0.22 mg/kg/day (2 years) NOEL (mouse) = 15.4 mg/kg/day (2 years) NOEL (dog) = 0.4 mg/kg/day (1 years)
Carcinogenicity	: EPA : Group D EU : Not classified IARC : Not classified
Mutagenicity	: Not mutagenic
Common name	: **Simazine**
Chronic toxicity	: NOEL : rat 10 ppm ; mouse 40 ppm .
Carcinogenicity	: EPA : Group C EU : Carc. Cat. 3 IARC : Group 3
Mutagenicity	: Not mutagenic.
Reproduction toxicity	: NOEL (rat): 10 ppm (Maternal) ; 500 ppm (Fetal).
Other information	: Teratogenicity - NOEL (rat): 10 mg/kg/day ; NOEL (rabbit): 5 mg/kg/day.

12. ECOLOGICAL INFORMATION

Common name : **Terbuthylazine**

Mobility : Soil - Low mobility.
K_{oc} = 162 - 278 mL/g
K_d = 2.5 - 25 mL/g

Persistence/degradability : **Soil**
The product is persistent to some extent.
Adsorbed on organic matter and clay.
Half-life time (t½): 30-60 days.
Degradation is primarily via: microorganisms.
Water
DT_{50} (pH 5) = 86 days.
DT_{50} (natural water) = 25 days.

Bioaccumulative potential : Low bioaccumulation potential.

Ecotoxicity : **Fish**
LC_{50} (96 hours) rainbow trout (oncorhynchus mykiss) = 3.8 - 4.6 mg/L
bluegill sunfish (lepomis macrochirus) = 7.5 mg/L
catfish (ictalurus ameirus), carp = 7 mg/L
NOEC (7 days) Zebra fish (branchydanio rerio) = 1 mg/L
Daphnia magna
EC_{50} (48 hours) = 21.2 mg/L
Algae (scenedesmus subspicatus)
EC_{50} (72 hours) = 0.016 mg/L
Birds
Mallard duck (anas platyrhynchos) LD_{50} > 1,000 mg/kg
LC_{50} (8 day feeding) >5,620 ppm
Bobwhite quail (colinus virginianus) LD_{50} > 1,000 mg/kg
LC_{50} (8 day feeding) > 5,620 ppm
Bees
Oral and Contact LD_{50} > 100 µg/bee

Very toxic to aquatic organisms. Low toxicity: birds. Non toxic: bees.

Common name : **Simazine**

Mobility : **Soil**
Low mobility.
Adsorbed on organic matter and clay.
K_{oc} = 103 - 277 mL/g
K_d = 0.37 - 4.66 mL/g

Persistence/degradability : **Soil**
Moderately persistent.
Half-life time (t½): 27-102 days (median 49 days).
Degradation is primarily via: microorganisms.
The product is not biodegradable.
Water
DT_{50} (pH 5) = 96 days @ 20°C
DT_{50} (water/sediment) = 68-166 days @ 20°C

Bioaccumulative potential : Low bioaccumulation potential.
K_{ow} logP = 2.19

Ecotoxicity : **Fish**

LC_{50} (96 hours) rainbow trout (oncorhynchus mykiss) > 100 mg/L
bluegill sunfish (lepomis macrochirus) = 90 mg/L
NOEC (21 days) rainbow trout (oncorhynchus mykiss) = 10 mg/L

Daphnia magna

EC_{50} (48 hours) > 100 mg/L
EC_{50} (21 days) = 0.29 mg/L

Algae (scenedesmus subspicatus)

EC_{50} (72 hours) = 0.04 mg/L

Birds

Mallard duck (anas platyrhynchos) LD_{50} > 2,000 mg/kg
LC_{50} (8 day feeding) > 10,000 ppm
Japanese quail (coturnix coturnix japonica) LC_{50} > 5,000 ppm (8 day feeding)

Bees

Oral LD_{50} > 99 µg/bee
Topical LD_{50} > 99 µg/bee

Very toxic to aquatic organisms. Low toxicity: birds. Not toxic: bees.

13. DISPOSAL CONSIDERATIONS

Methods of disposal : Dispose of in a pesticide approved landfill or in a chemical incinerator equipped with scrubbers, In accordance with national and regional regulations.

14. TRANSPORT INFORMATION

International transport regulations

UN number : 3082

Land - Road/Railway

Proper shipping name : Environmentally hazardous substance, Liquid, N.O.S., Terbuthylazine, Simazine.
ADR/RID Class : 9, M6, PG III
Hazard Identification Number : 90

Inland waterways

Proper shipping name : Environmentally hazardous substance, Liquid, N.O.S., Terbuthylazine, Simazine.
ADNR Class : 9, M6, PG III

Sea

Proper shipping name : Environmentally hazardous substance, Liquid, N.O.S., Terbuthylazine, Simazine.
IMDG Class : 9
Packing group : III
Emergency Schedules (EmS) : F-A, S-F

Air

Proper shipping name : Environmentally hazardous substance, Liquid, N.O.S., Terbuthylazine, Simazine.
UN/ID Number : 3082
IATA-DGR Class : 9, PG III

National transport regulations
No additional national transport regulations are known to the supplier

15. REGULATORY INFORMATION

Classification : This product is provisionally labelled by the supplier in accordance with the suppliers understanding of the EU regulations (Directives 67/548/EEC, 1999/45/EC).

Hazard symbol(s) : Xn, N

HARMFUL

DANGEROUS FOR THE ENVIRONMENT

Risk phrases : R40: Limited evidence of a carcinogenic effect.
R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety phrases : S02: Keep out of the reach of children.
S13: Keep away from food, drink and animal feedingstuffs.
S20/21: When using do not eat, drink or smoke.
S24/25: Avoid contact with skin and eyes.
S36/37: Wear suitable protective clothing and gloves.
S61: Avoid release to the environment. Refer to special instructions/Safety data sheets.

16. OTHER INFORMATION

The information contained in the Safety Data sheet is correct to the best of our knowledge at the date of issue. It is intended as a guide for the safe use, handling, disposal, storage and transportation and is not intended as a warranty or as a specification. The information relates only to the product specified and may not be suitable for combinations with other materials or in processes other than those specifically described herein.

HISTORY

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