

UNIVERSAL REEP 480 SC

MATERIAL SAFETY DATA SHEET

1. PRODUCT & COMPANY IDENTIFICATION

Product Name: REEP 480 SC
Herbicide

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

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: 1) **Metazachlor**
2) **Atrazine**
3) **Terbuthylazine**

Chemical Name: 1) 2-chloro-*N*-(pyrazol-1-ylmethyl)acet-2',6'-xylylide (IUPAC)
2) 6-chloro-*N*-ethyl-*N'*-(1-methylethyl)-1,3,5-triazine-2,4-diamine, (IUPAC)
3) 6-chloro-*N*-(1,1-dimethylethyl)-*N'*-ethyl-1,3,5-triazine-2,4-diamine; (IUPAC)

CAS No.: 1) 266-583-0
2) 217-617-8
3) 227-637-9

Chemical family: 1) chloroacetamide
2) & 3) triazine

Chemical formula: 1) C₁₄H₁₆ClN₃O
2) C₈H₁₄ClN₅
3) C₉H₁₆ClN₅

Molecular weight: 1) 228.2; 2) 215.7; 3) 229.7

Use: A suspension concentrate herbicide for the pre-emergence and post-emergence control of annual grasses and certain broad-leaved weeds in maize.

Formulation: 1) **Metazachlor** 60 g/l plus
2) **Atrazine** 210 g/l plus
3) **Terbuthylazine** 210 g/l
Soluble Concentrate

Active ingredients: chloroacetamide plus triazine

Inert:	Concern:	% Present
Metazachlor	Harmful	6 %
Atrazine	Water contamination risk	.21 %
Terbuthylazine	Harmful	21 %
Other	No concern	2 %
Water	No concern	50 %

Symbol: Xn; X; N

Indication of danger: Harmful Irritating and Environmentally dangerous substance

Risk Phrases: R22, R36, R43, R48, R50, R52/R53

3. HAZARD IDENTIFICATION

Toxicity class:
WHO (a.i.) U; EPA Class III
Slightly toxic. Harmful.

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

Skin contact: May be irritant to skin and cause redness and discomfort. It is moderate skin sensitizes in animal tests. No adverse effects expected when recommended use instructions are followed.

Eye contact:
Non irritant to eyes. May cause redness, pain and blurred vision.

Ingestion:
Low oral toxicity. Ingestion of large quantities may cause nausea, vomiting, abdominal distress, diarrhoea and muscle spasms.

Inhalation:
Unlikely to cause harmful effects under normal conditions of handling and use, but may cause sore throat, headache, nausea, abdominal distress or increased respiration if large quantities are inhaled.

4. FIRST AID MEASURES AND PRECAUTIONS

The acute toxicity of these herbicides for man is very low, and no adverse health effects from exposure to this combination herbicide have been reported. Symptoms of poisoning include abdominal pain, diarrhoea and vomiting,

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eye irritation, irritation of mucous membranes and skin reactions.

Inhalation:

If vapours or mists have been inhaled and irritation has developed, remove the source of contamination or move victim to fresh air. The patient should be kept under observation and obtain medical attention if irritation persists.

Skin contact:

Remove contaminated clothing, shoes and leather goods immediately. Gently wipe off excess chemical. Wash skin gently and thoroughly with non-abrasive soap and large amounts of water until no evidence of chemical remains (approximately 15 to 20 minutes). If irritation persists, seek medical advice immediately. Persons who become sensitized may require specialized medical management with anti-inflammatory agents.

Eye contact:

Immediately flush contaminated eyes with gently flowing lukewarm water for 20 minutes, occasionally lifting upper and lower lids until no evidence of chemical remains (approximately 15 to 20 minutes). Obtain medical attention if irritation persists.

Ingestion:

If swallowed seek medical advice immediately and show the container, label, or this Data Sheet, if possible. DO NOT induce vomiting. To limit toxicant absorption, give 30 g of activated charcoal in 100 ml of water. Put the patient in the half up-right position and give plenty of water. Seek medical advice immediately showing container and label.

Advice to physician:

No specific antidote is available. Treat symptomatically and supportively when required. If large amounts have been ingested, perform gastric lavage and administer activated charcoal.

5. FIRE FIGHTING MEASURES

Fire and explosion hazard:

Flash point: None – water based.

This material is not flammable.

Extinguishing agents:

For small fires, use foam, carbon dioxide, dry powder or halon extinguishant. For large fires, use foam or water-fog; avoid use of water jet. Contain run-off water with, for example, temporary earth barriers.

Hazardous products of combustion:

None.

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.

Dyke fire control water 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.

Personal protective equipment:

Fire may produce irritating or poisonous vapours (toxic fumes of carbon monoxide, phosphorous oxides and nitrogen oxides), 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:

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

Environmental precautions:

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 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.

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7. HANDLING AND STORAGE REQUIREMENTS

Handling:

Avoid contact with eyes, prolonged contact with skin, and inhalation of spray and fumes. Handle product with caution. Use with adequate ventilation. Wash hands before eating, drinking, chewing gum, smoking or using the toilet. Remove clothing immediately if the herbicide gets inside. Then wash skin thoroughly using a non-abrasive soap and put on clean clothing. Operators should change and wash clothing after use. 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.

Storage:

Store in its original, labelled and closed container in dry, cool, shaded, well-ventilated area, away from heat, sparks and other sources of ignition. Do not store with other pesticides, fertilizer, seeds, foodstuffs and water supplies. Store away from incompatible substances. Keep out of reach of unauthorized persons, children and animals. 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:

It is usually safe to use the product without a mask. If the product is used in dusty or confined conditions, a mask suitable for protection from dusts and mists of pesticides is adequate.

Clothing:

Employee must wear appropriate protective (impervious) clothing and equipment to prevent repeated or prolonged skin contact with this substance.

Gloves:

Employee must wear appropriate chemical resistant gloves to prevent contact with this substance.

Eye protection:

Wear safety goggles or face shield.

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:

Suspension Concentrate. Off white liquid, slightly aromatic.

Relative density:

1.090 ± 0.01 g/ml

Solubility in water:

Completely miscible.

Flash point:

None. Water based. Not flammable.

pH:

7 ± 0.5

Oxidising properties:

None.

Corrosiveness:

Not corrosive.

10. STABILITY AND REACTIVITY

Stability:

Metazachlor: Due to very slow rate of hydrolysis, **Metazachlor** is considered stable in suspension concentrates under normal conditions.

Atrazine: Relatively stable in neutral, weakly acidic and weakly alkaline media.

Terbutylazine: Stable in neutral, weakly acidic and weakly alkaline media; hydrolysed in acidic or alkaline media.

Storage stability:

Stable for 2 years under normal warehouse conditions. Store at temperatures below 50 °C and above -15 °C. Stable to light.

11. TOXICOLOGICAL INFORMATION

Acute oral LD₅₀:

Metazachlor:

LD₅₀: Rats > 2150 mg/kg

Atrazine:

LD₅₀: Rats 1869 – 3090 mg/kg

LD₅₀: Mice > 1332 - 3992 mg/kg

Terbutylazine:

LD₅₀: Rats 1590 – > 2000 mg/kg

Acute dermal LD₅₀:

Metazachlor:

LD₅₀: Rats: > 6810 mg/kg

Atrazine:

LD₅₀: Rats: > 3100 mg/kg

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Terbutylazine:

LD₅₀: Rats: > 2000 mg/kg

Inhalation:

Metazachlor:

LD₅₀: Rats (4 h): > 34.5 mg/l air

Atrazine:

LD₅₀: Rats (4 h): > 5.8 mg/l air

Terbutylazine:

LD₅₀: Rats (4 h): > 5.3 mg/l air

Acute skin irritation:

Metazachlor: No skin irritation (Rabbits). Skin sensitizer in guinea pigs.

Atrazine: Mild skin irritant. Skin sensitizer in guinea pigs, but not in humans.

Terbutylazine: No skin irritation. Not a skin sensitizer.

Acute eye irritation:

Metazachlor: Not irritating to eyes (rabbits).

No irritation of mucous membranes (rabbits).

Atrazine: Non-irritating to eyes (rabbits).

Terbutylazine: No eye irritation.

Carcinogenicity:

Metazachlor: In long term studies, no carcinogenicity was found.

Atrazine: Available data inconclusive.

Terbutylazine: Not carcinogenic.

Teratogenicity:

Metazachlor: Does not appear to be teratogenic.

Atrazine: Does not appear to be teratogenic.

Terbutylazine: Does not appear to be teratogenic.

Mutagenicity:

Metazachlor: Not mutagenic.

Atrazine: Not mutagenic.

Terbutylazine: Not mutagenic.

Reproductivity:

Metazachlor: No reproductive effects.

Atrazine: No reproductive effects.

Terbutylazine: No reproductive effects.

12. ECOLOGICAL INFORMATION

Degradability:

Metazachlor: Laboratory and field trials indicate that microbial degradation in aerobic soil is rapid; DT₅₀ (lab.) 1-23 d; DT₅₀ in soils fresh from the field ≤ 77 d, soil temperatures down to 10 °C. In field trials, DT₅₀ 3-9 d, DT₉₀ 35-97 d. Metabolism is mainly by conjugation with glutathione and subsequent degradation; the main metabolites (≥ 10%) were **Metazachlor oxalic acid** and **Metazachlor sulfonic acid** (COCH₂Cl side-chain replaced resp. by COCO₂H and COCH₂SO₃H). Lysimeter and outdoor studies indicate that **Metazachlor** is rapidly

degraded in the soil, does not accumulate, and that there is no detectable displacement of the a.i. or its metabolites into deeper layers of the soil (a depth of >30 cm). These findings are supported by the results from raw water monitoring programmes.

Atrazine is highly persistent in soil. Chemical hydrolysis, followed by degradation by soil micro-organisms, accounts for most of the breakdown of **Atrazine**. Addition of organic material increases the rate of hydrolysis. **Atrazine** can persist for longer than 12 months under dry or cold conditions. Moderately to highly mobile in soils with low clay or organic matter content. It does not absorb strongly to soil particles and therefore has a lengthy half-life of 60 to >100 days. Despite its moderately solubility in water, **Atrazine** has a high potential for groundwater contamination.

In water **Atrazine** is chemically hydrolyzed, followed by biodegradation. Bio-concentration and volatilization of **Atrazine** are not environmentally important.

In tolerant plants, **Atrazine** is readily metabolised to hydroxyatrazine and amino acid conjugates, with further decomposition. In sensitive plants, unaltered **Atrazine** accumulates, leading to chlorosis and death.

Water GV: 2 µg/l.

Terbutylazine is strongly adsorbed on soils. Koc 162 to 278 and Kd 2.2 to 25 are typical values for light agricultural soils. **Terbutylazine** is only slightly mobile. Microbial degradation proceeds mainly by de-ethylation and hydroxylation, with eventual ring cleavage. Half-life in biologically active soil is 30 to 60 days.

Is rapidly de-chlorinated to **Hydroxyl-terbutylazine** in tolerant plants. Various amounts of de-ethylated and hydroxyl de-ethylated metabolites are produced.

Water GV: 7 µg/l.

Mobility:

Metazachlor: No detectable displacement of a.i. or its metabolites.

Atrazine: Moderate to highly mobile in soils with low clay or organic matter content.

Terbutylazine: Only slightly mobile.

Accumulation:

Metazachlor: Does not accumulate.

Atrazine: Highly persistent in soil. Can persist for longer than 1 year under dry or cold conditions.

Terbutylazine: Adsorption on soils is strong.

ECOTOXICOLOGY:

Birds:

Metazachlor: Non-toxic.

LD₅₀: Bobwhite quail: .. > 2000 mg/kg

LC₅₀: Mallard ducks: > 5620 mg/kg

Atrazine: Non Toxic

LD₅₀: Bobwhite quail: 940 mg/kg

LD₅₀: Mallard ducks: > 2000 mg/kg

Terbutylazine: Non toxic.

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LD₅₀: quails: > 1000 mg/kg
 LD₅₀: ducks: > 1000 mg/kg

Fish:

Metazachlor: Moderately toxic.
 LC₅₀ (96 hrs): Carp: 15 mg/ℓ
 Rainbow trout: 4 mg/ℓ

Atrazine: Moderately toxic
 LC₅₀ (96hrs): Rainbow trout: 4.5 – 11.0 mg/ℓ
 Bluegill sunfish: 16 mg/ℓ

Terbuthylazine: Moderately toxic.
 LC₅₀ (96hrs) Rainbow trout: 3.8 to 4.6 mg/ℓ
 Bluegill sunfish: 7.5 mg/ℓ

Bees:

Metazachlor: Not toxic to bees; highest concentration tested 3.6 %.

Atrazine: LD₅₀ (oral): > 97 µg/bee
 LD₅₀ (contact): > 100 µg/bee

Terbuthylazine: LC₅₀ (oral & contact): > 100 µg/bee

Daphnia:

Metazachlor: LC₅₀ (48-hrs) 22 mg/ℓ
 Moderate toxic.

Atrazine: LC₅₀ (48 hrs) 6.9 mg/ℓ

Terbuthylazine: LC₅₀ (48hrs) 21 – 50.9 mg/ℓ

Earthworms:

Metazachlor: LC₅₀ (14 days): 440 mg/kg soil
 Non-toxic.

Atrazine: LC₅₀ (14 days): 78 mg/kg soil

Terbuthylazine: LC₅₀ (7 days) > 200 mg/kg soil

Other Beneficial organisms:

Metazachlor: NOEC for nine tested species of higher aquatic and marsh plants is 5 mg/ℓ.

Atrazine: Long-term studies in aquatic ecosystems indicate no permanent damage up to 0.020 mg/ℓ.

Terbuthylazine: no effects on bacterial respiration and nitrification in range 10.9 to 109 mg/kg soil.

13. DISPOSAL CONSIDERATION

Pesticide disposal:

Open dumping or burning of this pesticide is prohibited. Waste resulting from the use of this product that cannot be reused 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 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 dump site. Prevent contamination of food, feedstuffs, drinking water and eating utensils. Comply with local legislation applying to waste disposal.

14. TRANSPORT INFORMATION

UN NUMBER: 3082

Road Transport ADR/IRD:

Class: 6.1
 Packing group: III
 Shipping name: Environmentally hazardous substance, liquid, N.O.S. (herbicide – **Metazachlor / Atrazine / Terbuthylazine**)

Air Transport ICAO/IATA:

Class: 6.1
 Packing group: III
 Shipping name: Environmentally hazardous substance, liquid, N.O.S. (herbicide – **Metazachlor / Atrazine / Terbuthylazine**)

Maritime Transport IMDG/IMO:

Class: 6.1
 Packing group: III
 Shipping name: Environmentally hazardous substance, liquid, N.O.S. (herbicide – **Metazachlor / Atrazine / Terbuthylazine**)

MARINE POLLUTANT.

15. REGULATORY INFORMATION

Symbol: Xn, Xi; N
Indication of danger: Harmful Irritating and Environmentally dangerous substance
Risk Phrases: R22, R36, R43, R48, R50, R52/R53
R22 Harmful if swallowed.
R 38 Irritating to skin.
R43 May cause sensitization by skin contact.
R48 Danger of serious damage to health by prolonged exposure.
R50 Very toxic to aquatic organisms.
R52/53 Harmful to aquatic organisms; may cause long-term adverse effects in the aquatic environment.

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Safety phrases:

S 1/2	Keep locked up and out of the reach of children.
S 2425	Avoid contact with skin and eyes.
S 36/37/39	Wear suitable protective clothing, gloves and eye/face protection.
S 45	In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S 61	Avoid release to the environment

16. OTHER INFORMATION

Packaging:

Packed in 1, 5, 10, 20, 25 litres fluorinated 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 use of the product. It is not applicable to unusual or non-standard uses of neither 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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Next revision: April 2024

For detailed information on revisions, contact the Registration holder.