METRIBUZIN 480 SC SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: **METRIBUZIN 480 SC**
Other identifier: **Metribuzin 480 g/ℓ**
Recommended use: Herbicide
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) 396 2233
Fax: (011) 396 4666
Website: www.villacrop.co.za

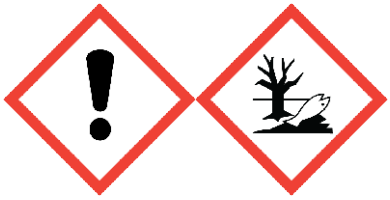
Emergency telephone numbers:
24 Hr Transport / Spill emergency no:
(Hazcall24) +27 86 044 4411
(Client: Villa Crop Protection)
Griffon Poison Information Centre +27 82 446 8946
(Client: Villa Crop Protection)
Poisoning Emergency telephone numbers:
Griffon Poison Information Centre +27 82 446 8946
Poisons 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		
Oral	Acute Toxicity 4	H302
Inhalation	Acute Toxicity 4	H332
Environment		
Aquatic acute	Aquatic acute 1	H400
Aquatic chronic	Aquatic chronic 1	H410

The most important adverse effects:
Physiochemical effects: None known
Human health effects:
Harmful if swallowed and if inhaled. The acute toxicity to technical triazine for man is thought to be low, and no adverse health effect from exposure to these herbicides has been reported.
Label elements:



Signal word: Warning
Hazard statements:
H302: Harmful if swallowed.
H332: Harmful if inhaled.
H410: Very toxic to aquatic life with long lasting effects.
Precautionary statements:
P261: Avoid breathing fume, mists, vapours or spray.
P264: Wash hands and face thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P271: Use only outdoors or in a well-ventilated area.
P273: Avoid release into the environment.
P301+P317: IF SWALLOWED: Get medical help.
P304+P340+P317: IF INHALED: Remove person to fresh air and keep comfortable for breathing. Get medical help.
P330: Rinse mouth.
P391: Collect spillage.
P501: Dispose of content/container to suitable landfill in accordance with local regulations.
Other hazards:
None known.
Toxicity:
Classification according to GHS: 4

3. COMPOSITION / INFORMATION ON INGREDIENTS

Substance / Mixture: Mixture
Composition:

Chemical name	CAS	Conc. (m/v%)	Classification EC 1272/2008
Metribuzin	21087-64-9	43.65 %	Acute toxicity 4 (H302) Aquatic Acute 1 (H400) M=10 Aquatic Chronic 1 (H410)
Soprophor FL	99734-09-5	< 5 %	Aquatic Chronic 3 (H412)
Mono Ethylene Glycol	115535-44-9	< 5 %	Acute toxicity 4 (H302)

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.
Inhalation: Remove person from contaminated area to fresh air and assist breathing as needed. Seek medical attention if person 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 person feels unwell.
Eyes: Flush eyes with clean water until no evidence of chemical remains. Lift eyelids to facilitate irrigation. If present, remove contact lenses after 5 minutes and continue rinsing.
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:
Harmful if swallowed.
May be harmful if inhaled.
Anticipated delayed effects: None known.
Most important symptoms / effects: Technical triazine can be absorbed orally, dermally and by inhalation. Symptoms of poisoning include abdominal pain, diarrhea, and vomiting.
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.
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. Remain upwind of fire. 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.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Avoid contact with skin. Do not breathe in spray mist, fumes or vapours. 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. This product is classified as very toxic to aquatic organisms with 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: Harmful if swallowed. Ensure adequate ventilation during handling and use. Do not handle broken packages without protective equipment. Immediately clean up spills that 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. Do not store near heat, open flame, sources of ignition or hot surfaces. 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: Plastic bottles, cans & containers.

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.

Personal Protective Equipment:

Respiratory Protection: For most well-ventilated conditions, no respiratory protection should be needed. If used in a poorly ventilated area (airborne concentrations exceed exposure limits), use a NIOSH approved, air-purifying respirator with cartridges / canisters approved for organic vapours.

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

Eye Protection: The use of chemical safety goggles is recommended to prevent against eye contact. Contact lenses are not protective eye devices.

Skin and Body Protection: Employees 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 smooth, greyish/off-white free-flowing liquid.
Odour: Not available.
Odour threshold: Not available.
pH: 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: Approx. 1.12 g/mℓ at 20°C
Solubility: Disperses 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: Unlikely to 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 hydrolysed to the hydroxy derivative in strong acids and alkalis.
Hazardous decomposition products: Hydrogen chloride and toxic oxides of nitrogen are released when the product decomposes on heating.

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY:
Calculated according to GHS:
Oral LD_{50} > 727 mg/kg (rat)
Dermal LD_{50} > 11454 mg/kg (rat)
Inhalation LC_{50} (4h) >1 mg/ℓ (rat)
Skin Irritation: Not calculated.
Eye Irritation: Not calculated.
Skin Sensitization: calculated.
Respiratory Sensitization: Not calculated.
Reproductive cell mutagenicity: Not calculated.
Carcinogenicity: Not calculated.
Reproductive toxicity: Not calculated.
Specific target organ toxicity – single exposure: Not calculated.
Specific target organ toxicity – repeated exposure: Not calculated.
Aspiration hazard: Not calculated.
Chronic Effects: Not calculated.
POTENTIAL ADVERSE EFFECTS:
Inhalation: Harmful if inhaled.
Ingestion: Harmful if ingested.

12. ECOLOGICAL INFORMATION

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

ECOTOXICITY DATA:
Metribuzin technical

Fish:		
LC_{50} (96 h)	Rainbow trout	74.6 mg/ℓ
	Golden orfe	141.6 mg/ℓ
	Sheepshead minnow	85 mg/ℓ
Daphnia:		
LC_{50} (48 h)		49.6 mg/ℓ

Algae:		
E_rC_{50}	*Scenedesmus subspicatus*	0.021 mg/ℓ
Birds:		
Acute oral LD_{50}	Bobwhite quail	164 mg/kg
	Mallard ducks	460-680 mg/kg
Bees:		
LD_{50} contact		200 µg/bee
LD_{50} oral		166 µg/bee
Worms:		
LC_{50}	*Eisenia fetida*	332 mg/kg soil

ENVIRONMENTAL EFFECTS
Metribuzin technical
Plants: In plants, metribuzin undergoes oxidative deanimation, followed by further degradation to water-soluble conjugates.
Persistence and degradability: Rapidly degraded in soil; microbial breakdown is the major mechanism of loss; losses due to photodecomposition or volatilisation are insignificant; DT_{50} in soil c. 1-2 mo; DT_{50} in pond water c. 7 d.
Bio-accumulative potential: No information available.
Mobility in soil: No information available.
Other adverse effects: No information available.

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. 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 / ORD:
Class: 9
Packaging group: III
UN Proper Shipping Name: Environmentally hazardous substance, liquid, N.O.S. (Metribuzin 480 g/ℓ)
Maritime Transport IMDG / IMO:
Class: 9
Packaging group: III
UN Proper Shipping Name: Environmentally hazardous substance, liquid, N.O.S. (Metribuzin 480 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. (Metribuzin 480 g/ℓ)
Special / Environmental Precautions: Wedge drums tightly to avoid movement.
Transport in bulk: Refer to MARPOL 73/78, Annex II and the IBC code.

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 1, 5, 10, 20 and 25 litres plastic bottles, cans, containers labelled according to South African regulations and guidelines.
Other hazard statements, abbreviations and explanations:
H412: Harmful 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.
LD_{50} 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.