

VILLA PALLADIUM 960 EC

MATERIAL SAFETY DATA SHEET

1. IDENTIFICATION OF PRODUCT AND COMPANY

Product Name: PALLADIUM 960 EC
 Herbicide
UN No. 3082
Supplier: Villa Crop Protection (Pty) Ltd.
 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. COMPOSITION / INFORMATION ON INGREDIENTS

Common Name: S-METOLACHLOR
Chemical Name: A mixture of (aRS, 1S)-2-chloro-6'-ethyl-N-(2-methoxy-1-methylethyl)aceto-o-toluidide and (aRS, 1R)-2-chloro-6'-ethyl-N-(2-methoxy-1-methylethyl)aceto-o-toluidide in the proportion 80–100% to 20–0% (IUPAC)
Chemical Abstracts name: A mixture of (S)-2-chloro-N-(2-ethyl-6-methylphenyl)-N-(2-methoxy-1-methylethyl)acetamide and (R)-2-chloro-N-(2-ethyl-6-methylphenyl)-N-(2-methoxy-1-methylethyl)acetamide in the proportion 80–100% to 20–0%
CAS No.: [51218-45-2]
Chemical Family: chloroacetamide
Chemical Formula: C₁₅H₂₂ClNO₂ (Mol. wt.: 283.8)
Formulation: S-Metolachlor: 960 g/l
 Emusifiable concentrate
Use / Mode of Action: Selective herbicide, absorbed by the hypocotyls and roots. Inhibits germination. Cell division inhibitor.
Hazardous Ingredient: S-Metolachlor

SYMBOLS: Xn, Xi, N
RISK-PHASE(S): R 22, 36/38, 43, 50

3. HAZARD IDENTIFICATION

Toxicity class: WHO II (a.i.), EPA II (formulation). Slightly hazardous.
Likely routes of exposure: Skin contact, ingestion, and inhalation.
Ingestion: ADI: 0.006 mg/kg b.w. Moderately toxic by ingestion.
Inhalation: Harmful by inhalation. May cause irritation to respiratory tract.
Eye and Skin contact: May cause irritation to the skin and eyes. Mild irritant. Skin (allergic) reaction may occur. May cause skin sensitisation.

4. FIRST AID MEASURES AND PRECAUTIONS

Irritant effects on skin and mucous membrane are the most common reactions. Large ingestions can cause nausea, vomiting, abdominal distress and diarrhoea.
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 off 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.
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: Do not induce vomiting. 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. Get medical attention immediately. Qualified medical personnel should perform administration of gastric lavage or oxygen.
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. Ingestion of less than 10 mg per kg body weight are probably treated best by administering 30 to 60 g activated charcoal in 150 to 300 ml water. If diarrhoea

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has not already developed, follow the charcoal administration in 4 hours with sodium sulphate catharsis.

5. FIRE FIGHTING MEASURES

Fire/Explosion hazard: **Non-flammable, non-explosive. Combustible. Flash point:** > 100 °C.

Combustion products are toxic and/or irritant. Inhalation of material could be harmful.

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.

Firefighting: 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 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: **S-Metolachlor** 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 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 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.

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

Storage: 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:

Respirator: An approved full-face respirator suitable for protection from spray or mists of pesticides is required.

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Limitations of respirator use specified by the approved agency and the manufacturer must be observed.

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 to prevent contact with this substance.

Eye protection: The use of chemical resistant goggles or a 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: Light Brown emulsifiable liquid.

Odour: Aromatic Hydrocarbon odour.

Relative density: 1.104 g/cm³ at 20 °C.

Solubility in water: Emulsifiable in water.

Flash point: Non-flammable.

pH: 4.

pH of 1 % aqueous dilution: 4.7.

10. STABILITY AND REACTIVITY

Stability: Stable under normal, dry storage conditions for a period of 2 years.

Storage stability: Separation after 7 days at 0 °C – No crystals.

After 7 days and within 1 hour after seeding: - No crystals.

Active ingredient content before start of test – 959.9 g/l.

Active ingredient content after 14 days at 54 °C – 959.2 g/l.

11. TOXICOLOGICAL INFORMATION

Formulation (calculated):

Acute oral LD₅₀: 1855 mg/kg in rats.

Acute dermal LD₅₀: > 2240 mg/kg in rabbits.

Acute inhalation LC₅₀: Technical: 4 mg/l/4 hours.

Acute skin irritation: May cause irritation to the skin.

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

Acute eye irritation: May cause irritation to the eyes.

ADI: 0.1 mg/kg b.w.

No case of human poisoning has been recorded.

12. ECOLOGICAL INFORMATION

In rats **S-Metolachlor** is rapidly oxidised by liver microsomal oxygenases via dechlorination, O-demethylation and side-chain oxidation.

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.

Half-life in soil is: DT₅₀ is about 20 days (field).

ECOTOXICOLOGY: (Technical material)

Birds: Moderately toxic to birds.

LD₅₀: Bobwhite quail: > 2150 mg/kg

Mallard ducks: > 2150 mg/kg

Fish: Toxic to fish.

LC₅₀ (96 hours): Bluegill: 3.16 mg/l

Rainbow trout: 1.23 mg/l

Daphnia: Very toxic to Daphnia.

Daphnia magna: 48-hour LC₅₀: 11.24 to 26.00 mg/l

Bees:

Slightly toxic to bees.

LD₅₀ (oral & contact): >0.085 µg/bee

Earthworms:

LC₅₀ (14 days): 570 mg/kg soil

Algae: Very toxic to algae.

Selenastrum capricornutum 0.008 mg/l

Skeletonema costatum 0.11 mg/l.

Other aquatic spp.:

LC₅₀ (96 h) for Mysid shrimps (*Mysidopsis bahia*) 1.4 mg/l.

E_dC₅₀ (14 d) and

Lemna gibba 0.023 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 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 draining 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.

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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: 9
 Packing group: III
 Shipping name: Environmentally hazardous substance, liquid, N.O.S. (S-Metolachlor 960 g/l)

Air Transport ICAO/IATA:
 Class: 9
 Packing group: III
 Shipping name: Environmentally hazardous substance, liquid, N.O.S. (S-Metolachlor 960 g/l)

Maritime Transport IMDG/IMO:
 Class: 9
 Packing group: III
 Shipping name: Environmentally hazardous substance, liquid, N.O.S. (S-Metolachlor 960 g/l)

15. REGULATORY INFORMATION

Symbol: Xn, Xi, N
Indication of danger: Harmful, Irritating substance, Environmentally Hazardous Substance

Risk phrases:
 R 22 Harmful if swallowed.
 R 36/38 Irritation to eyes and skin.
 R 43 May cause skin sensitisation by skin contact.
 R 50 Very toxic to aquatic organisms.

Safety phrases:
 S 1/2 Keep under lock and key and out of reach of children.
 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.

16. OTHER INFORMATION

Packing and Labelling: Packed in 1, 5, 10, 20 & 25 litres 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 but without guarantee in respect of accuracy, and no responsibility is accepted for errors and omissions or the consequence thereof.

END OF DOCUMENT

Compiled: September 2011
Revised: March 2019
Revision no: (3)
Next revision: March 2024

For detailed information on revisions, contact the Registration holder.