

VILLA METHOMYL 90 SP

MATERIAL SAFETY DATA SHEET

1. IDENTIFICATION OF PRODUCT AND COMPANY

Product Name: METHOMYL 90 SP
 Insecticide
UN No. 2757
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:

Bateleur: +27 86 199 9071

(Client: Villa Crop Protection)

Poisoning:

Griffon Poison Information Centre +27 82 446 8946

Western Cape Poisons +27 861 555 777

Tygerberg Hospital +27 21 931 6129

2. COMPOSITION/INFORMATION ON INGREDIENTS

Common Name: Methomyl
Chemical Name: S-methyl N-(methylcarbamoyloxy) thioacetimidate (IUPAC)
CAS No.: 16752-77-5
Chemical family: Oxime carbamate
Chemical formula: C₅H₁₀N₂O₂S
Molecular weight: 162.2
Use: Systemic insecticide with contact and stomach action. Cholinesterase inhibitor.
Formulation: Methomyl 900 g/kg: Water Soluble Powder
Hazardous ingredients: Methomyl
Symbol: T+
Indication of danger: Very Toxic
Risk Phrases: R26/27/28, R36

3. HAZARD IDENTIFICATION

Toxicity class: WHO Ib; EPA I

Methomyl is a carbamate compound, which inhibits cholinesterase. It is of very high toxicity. Contact with skin, inhalation of dust or spray, or swallowing may be fatal. Toxic to fish and bees.

Likely routes of exposure: Ingestion, dermal absorption, inhalation and eye contact.

Eye contact: May cause moderate pain, redness or tears.

Skin contact: Highly toxic. May cause mild irritation.

Ingestion: Highly toxic by ingestion. See point 4 for symptoms.

Inhalation: Highly toxic by inhalation. See point 4 for symptoms.

4. FIRST AID MEASURES AND PRECAUTIONS

Proper care should be taken during occupational use to avoid any contact or inhalation of spray particles or dust, and to prevent accidental contamination of food products and water. Carbamate: Cholinesterase inhibitor.

The first effects are usually respiratory and may include nasal hyperemia and watery discharge, chest discomfort, dyspnea, and wheezing due to increased bronchial secretions and bronchoconstriction.

Other systemic effects may begin within a few minutes or several hours of exposure. Symptoms may include nausea, vomiting, diarrhoea, abdominal cramps, headache, vertigo, tightness of the chest, anxiety, ocular pain, ciliary muscle spasm, blurring or dimness of vision, miosis, or in some cases mydriasis, lacrimation, salivation, sweating, and confusion.

In severe cases, there may also be involuntary defecation and urination, bradycardia, hypotension, pulmonary oedema, convulsions, coma, and death from respiratory failure or cardiac arrest.

Does not accumulate in mammalian tissue and the cholinesterase inhibition reverses rather rapidly. In non-fatal cases, the illness generally lasts less than 24 hours.

Inhalation: Remove from exposure area to fresh air immediately. If breathing has stopped, give mechanical artificial respiration (not direct mouth-to-mouth). Maintain airway and blood pressure and administer oxygen if available. Keep affected person warm and at rest. Treat symptomatically and supportively. Qualified personnel should perform administration of oxygen. Get medical attention immediately.

Skin contact: Remove contaminated clothing immediately. Wash contaminated areas with soap and water followed by alcohol. Emergency personnel should wear gloves and avoid contamination. Treat respiratory difficulty with mechanical artificial respiration. Get medical attention immediately.

Eye contact: Flush eyes with lukewarm, gently flowing water for at least 20 minutes or until the product is removed, while holding the eyelid(s) open. Take care not to rinse contaminated water into the unaffected eye or onto the face. If symptoms of poisoning occur, treat respiratory difficulty with mechanical artificial respiration and oxygen. Observe patient for at least 24 to 36 hours. Get medical attention immediately. Qualified medical personnel should administer oxygen.

Ingestion: If swallowed, rinse mouth thoroughly with water and immediately get medical attention. If person is alert and respiration is not depressed, give syrup of Ipecac followed by water or activated charcoal if instructed. If

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vomiting occurs, keep head below hips to prevent aspiration.

Establish and maintain airway. Treat respiratory difficulty with artificial respiration and oxygen. Apply mouth-to-nose respiration. Qualified medical personnel should administer oxygen.

Do not give anything by mouth to an unconscious person. Take the person to a physician immediately.

Advice to physician: If consciousness level declines or vomiting has not occurred in 15 minutes empty stomach by gastric lavage with the aid of cuffed endotracheal tube using isotonic saline or 5 % sodium bicarbonate followed with activated charcoal. Establish and maintain airway. Treat respiratory difficulty with artificial respiration and oxygen.

Do not give morphine, aminophylline, phenothiazines, reserpine, furosemide, or ethacrynic acid. Pralidoxime (2-PAM, Protopam) and other oximes are contra-indicated AND THEY SHOULD NOT BE USED.

Antidote:

Establish clear airway and tissue oxygenation by aspiration of secretions, and if necessary, by assisted pulmonary ventilation with oxygen.

Administer atropine sulphate intravenously or intramuscularly if iv injection is not possible. In moderately severe poisoning administer atropine sulphate, 0.4 to 2.0 mg repeated every 15 minutes, until atropinization is achieved (tachycardia, flushing, dry mouth, mydriasis). Maintain atropinization by repeated doses for 2 to 12 hours, or longer, depending on the severity of poisoning.

Severely poisoned individuals may exhibit remarkable tolerance to atropine. Two or more times the dosages suggested above may be needed. Observe treated patients closely at least 24 hours to ensure that symptoms (possibly pulmonary oedema) do not recur as atropinization wears off. In very severe poisonings, metabolic disposition of toxicant may require several hours or days during which atropinisation must be maintained. Markedly lower levels of urinary metabolites indicate that atropine dosage can be tapered off. As dosage is reduced, check the lung bases frequently for rales. If rales are heard or other symptoms return, re-establish atropinisation promptly.

5. FIRE FIGHTING MEASURES

Fire and explosion hazard: Slight fire hazard when exposed to heat or flame. Dust-air mixtures may ignite or explode.

Hazardous decomposition products: Decomposes in fire to emit very toxic fumes of NO_x and SO_x.

Extinguishing agents: Extinguish fires with carbon dioxide, dry powder, or alcohol-resistant foam. Water spray can be used for cooling of unaffected stock. Contain water used for fire fighting for later disposal. Do not get

water inside the containers. Runoff to sewers could create fire or explosion hazard.

Firefighting: Keep upwind. Remove container from fire area if possible. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Contain fire control agents for later disposal. Use a recommended extinguishing agent for the type of surrounding fire. Avoid inhaling hazardous vapours. Keep upwind. Consider evacuation of downwind area if material is leaking.

Personal protective equipment: Fire may produce irritating or poisonous vapours (sulphoxides), 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 dust 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 flush with water. For dry spills, preferably vacuum with an industrial vacuum cleaner with a 0.3 m filter, or sweep up with damp earth or sand or other suitable absorbent, taking care not to raise a dust cloud. In situations where product comes in contact with water, contain contaminated water for later disposal. Do not flush spilled material into drains. Keep spectators away.

7. HANDLING AND STORAGE REQUIREMENTS

Handling: Toxic if swallowed. Avoid contact with eyes and skin, and inhalation of dust and vapour. Use with adequate ventilation. Wash hands before eating, drinking, hewing gum, smoking, or using the toilet. Operators should change and wash clothing daily. Remove clothing immediately if the insecticide gets inside. Then wash skin thoroughly using a non-abrasive soap and put on clean clothing. 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: Stable for up to 2 years when stored under dark, dry warehouse conditions.

The product must be kept under lock and key. Keep out of reach of unauthorised persons, children and animals. Store in its original labelled container in isolated, dry, cool and well-ventilated area. Not to be stored next to

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foodstuffs and water supplies. Local regulations should be complied with.

Decomposes in fire to emit very toxic fumes of NO_x and SO_x.

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: An approved respirator suitable for protection from dusts and mists of pesticides is required. Limitations of respirator use specified by the approving agency and the manufacturer must be observed.

Clothing: Employee must wear appropriate protective (impervious) clothing and equipment to prevent skin contact with the substance.

Gloves: Employee must wear appropriate synthetic protective gloves to prevent contact with this substance.

Eye protection: The use of full-face protection is recommended.

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: White soluble powder.

Odour: Slightly sulphurous.

Specific gravity: 1.2946 at 25°C

Storage stability: Stable at normal temperatures and storage conditions. Incompatible with strong bases.

10. STABILITY AND REACTIVITY

Stability: Stable for up to 2 years in the dry form and in aqueous solutions pH 7.0 or less, but rapidly decomposes in alkaline solutions and in moist soils.

Corrosiveness: Corrosive to iron.

Incompatibility: The product is compatible with most other pesticides when used at normal rates. Do not physically mix concentrate directly with other herbicides or pesticide concentrates; always dilute first. A compatibility test is required before using with other products. Incompatible with strong bases and oxidising agents.

Hazardous decomposition products:

11. TOXICOLOGICAL INFORMATION

Acute oral LD₅₀:

17 mg/kg a.i. in male and 24 mg/kg a.i. in female rats.

Acute dermal LD₅₀:

> 5000 mg/kg active ingredient (male rabbits)

Acute inhalation LC₅₀:

0.3 mg/ℓ of air over 4 hours (male rats).

Acute skin irritation: The product was found to be non-irritating to guinea pig skin.

Acute eye irritation: Caused pupillary constriction and other effects associated with anti-cholinesterase activity.

Carcinogenicity: Animal studies did not detect carcinogenic activity. No human information available.

Teratogenicity: Animal studies did not detect any teratogenic effects. No human information available.

Mutagenicity: In a number of assays, **Methomyl** was not mutagenic. No evidence that **Methomyl** is a mutagenic or genotoxic.

12. ECOLOGICAL INFORMATION

Degradability: The product degrades rapidly in the soil, degradation-taking place primarily through microbial activity, with CO₂ as the principal end product.

Mobility: The product dissolves readily in water and is mobile in soil.

Accumulation: Animals: In rats, **Methomyl** was rapidly converted to **Methomyl** methylol, oxime, sulfoxide and sulfoxide oxime. These unstable intermediates were converted to acetonitrile and CO₂, which were eliminated primarily via respiration and in the urine.

Plants: After leaf application of **Methomyl**, DT50 was approximately 3 to 5 days. **Methomyl** was rapidly degraded to CO₂ and acetonitrile, with incorporation into natural plant components.

ECOTOXICOLOGY:

Birds:

LD ₅₀ :	mallard ducks:	15.9 mg/kg
	Pheasants:	15.4 mg/kg

Fish: Extremely toxic to fish.

LC ₅₀ (96 hr):	rainbow trout:	3.4 mg/ℓ
	Bluegill sunfish:	0.9 mg/ℓ

Bees: Toxic to bees.

Contact LD₅₀: 0.1 µg/bee.

Methomyl is not hazardous once spray has dried.

Daphnia:

LC₅₀ (48 hours): 28.7 µg/ℓ

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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 should be disposed of in a landfill approved for pesticide disposal. Do not contaminate rivers, dams or any other water sources with the product or used containers.

Package product wastes: Emptied containers retain vapour and product residues. Observe all labelled safeguards until container is destroyed. Empty the container of excess product into the container of the applicator. Destroy the emptied containers by perforation and flattening. Bury in an approved, designated landfill. Do not re-use the empty container for any other purpose. Comply with any local legislation applying to disposal.

14. TRANSPORT INFORMATION

UN NUMBER: 2757
ADR/IRD: 6.1
IMDG/IMO: 6.1
ICAO/IATA: 6.1
PACKING GROUP: II
ROAD/RAIL: 613, Y613
 carbamate pesticide, solid, toxic, n.o.s. (**Methomyl**).
AIR/IATA: 613, Y613 (IATA).
 carbamate pesticide, solid, toxic, n.o.s. (**Methomyl**).
SEA: 613, Y613
 carbamate pesticide, solid, toxic, n.o.s. (**Methomyl**).

Considered a marine pollutant.

15. REGULATORY INFORMATION

Symbol: T+
Indication of danger: Very toxic.
Risk phrase(s):
R 26/27/28 Very toxic by inhalation, in contact with skin and if swallowed.
R 36 Irritating to eyes.
Safety phrases:
S 1/2 Keep locked up and out of reach children.
S 22 Do not breathe dust.
S 25 Avoid contact with 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).

16. OTHER INFORMATION

Packaging: Packed in 1 kg water-soluble sachets and then 10 x 1 kg water-soluble sachets are packed within 3-ply paper box 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 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.