DIMETHOZEB 690 WP

SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: **DIMETHOZEB 690 WP**
Other identifier: **Dimethomorph Mancozeb 690 WP**
Recommended use: Fungicide
Restrictions on use: Agriculture

Supplier: **Universal Crop Protection (Pty) Ltd.**
Co. Reg. No.: 1983/008184/07
PO Box 801,
Kempton Park, 1620, South Africa
Telephone: (011) 3962233
Fax: (011) 3964666
Website: www.villacrop.co.za

Emergency telephone numbers:
24 Hr Transport / Spill emergency no:
Griffon Poison Information Centre +27 82 446 8946
(Client: Villa Crop Protection)
Poisoning:
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		
Dermal	Skin Sens. 1	H317
Inhalation	Acute Tox. 5	H333
Reproductive Toxicity	Repr. 2	H361d
Environment		
Aquatic acute	Aquatic Acute 1	H400
Aquatic chronic	Aquatic Chronic 3	H412

The most important adverse effects:
Physiochemical effects: None known
Human health effects:
May cause an allergic skin reaction. Suspected of damaging the unborn child.
Label elements:

Signal word: Warning
Hazard statements:
H317: May cause an allergic skin reaction.
H333: May be harmful if inhaled.
H361d: Suspected of damaging the unborn child.
H400: Very toxic to aquatic life.
H412: Harmful to aquatic life with long lasting effects.
Precautionary statements:
P202: Do not handle until all safety precautions have been read and understood.
P273: Avoid release into the environment.
P280: Wear impervious rubber gloves and boots, protective clothing and chemical safety goggles.
P302/352: IF ON SKIN: Wash with plenty of water and non-abrasive soap.
P308/313: If exposed or concerned: Get medical attention.
P333/313: If skin irritation or rash occurs: Get medical advice.
P391: Collect spillage.
P405: Store locked up.
P501: Dispose of contents/container to suitable landfill in accordance with local regulations.
Special labelling of certain mixtures:
None known.
Other hazards:
None known.
Toxicity:
Classification according to GHS: Category 5
Classification according to WHO: Category III
Classification according to GPIC: Unclassified

3. COMPOSITION / INFORMATION ON INGREDIENTS

Substance/Mixture: Mixture
Composition:

Chemical Name	CAS	Conc. (m/m %)	Classification EC 1272/2008
Mancozeb	8018-01-7	60	Skin Sens. 1 (H317) Repr. 2 (H361d) Aquatic Acute 1 (H400)
Dimethomorph	110488-70-5	9	Aquatic Chronic 2 (H411)

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. Treat symptomatically and supportively as and when required. Administration of oxygen should be performed by qualified personnel. Seek medical attention if irritation occurs.
Skin: Remove contaminated clothing and shoes. Gently wipe off excess chemical. Wash skin gently and

thoroughly with water and non-abrasive soap. Do not rub skin. Obtain medical attention if irritation persists. Persons who become sensitized may require specialised medical management with anti-inflammatory agents or cortisone-containing emulsions.
Eyes: Flush eyes with clean water for at least 15 – 20 minutes. Lift eyelids to facilitate irrigation. If present, remove contact lenses after 5 minutes and continue rinsing. Seek medical attention if irritation occurs.
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 and drink at least 2 glasses of water.
Anticipated acute effects: None known.
Anticipated delayed effects: None known.
Most important symptoms/effects: May cause an allergic skin reaction. Suspected of damaging the unborn child.
Advice to physician: No specific antidotes are available against dithiocarbamate poisoning. If a large amount of **Mancozeb** has been ingested in the last few hours, and if copious vomiting has not already occurred, the stomach must be emptied and steps taken to limit gastrointestinal absorption. If the patient is fully alert and nervous system depression is not anticipated, oral administration of Syrup of Ipecac is probably the best way to empty the stomach. If contact with the toxicant has been minimal, administration of charcoal without the cathartic, followed by careful observation of the patient, probably represent optimal management.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media: Dry powder, alcohol-resistant foam and water fog.
Unsuitable Extinguishing Media: Carbon dioxide and a high volume water jet. Use a water jet only to cool heated containers.
Specific hazards: Combustion may result in the release of the following gases: carbon disulphide, hydrogen sulphide, sulphur, nitrogen and carbon oxides.
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. Keep upwind. 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 not come into contact with the product and 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: Do not breathe in spray mist or dust. Avoid the formation of dust when using. Avoid contact with eyes. 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 to be very toxic to aquatic organisms and may cause harmful 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 or make use of a dust binding material.
Methods and Materials for Clean-up: Contain spilled product by picking up with an electrically protected vacuum cleaner or by wet-brushing and transfer to into a clean, dry, sealable container for disposal. Do not create a powder cloud by using a brush or compressed air. 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. 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. Collect washings and add to the drums already collected. See section 13 for disposal considerations.

7. HANDLING AND STORAGE

Handling:
Precautions for safe handling: May be harmful if inhaled. Avoid contact with skin and eyes. 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. Avoid excess heat and protect from direct sunlight. Preferably store at temperatures above -10˚C and 30˚C. Avoid dust formation. Protect against moisture. 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 containers or bags, 3-ply paper or plastic bags and polypropylene woven bags.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Permissible concentration

Components	Exposure limits	Type of exposure limit	Source
Mancozeb	2 mg/m^3 1.5 mg/m^3	TWA (8h) TWA (12h)	AEL

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: Wear an approved full-face respirator suitable for protection from dusts and mists is required. Limitations of respirator use specified by the approving agency and manufacturer must be observed.
Hand Protection: The employee must use chemically protective gloves to prevent against skin contact. Wash gloves after use.
Eye Protection: The use of chemical safety goggles or a face shield is recommended to prevent against eye contact. Contact lenses are not protective eye devices.
Skin and Body Protection: Employee must wear appropriate impervious clothing: 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: Fine to off-white wettable powder.
Odour: Not available.
pH (1% aqueous dilution): Not available.
Melting point: Not available.
Freezing Point: Not available.
Boiling Point: Not available.
Flammability: Not available.
Upper/lower explosion limits: Dust-air mixtures may explode when in contact with moisture.
Vapour Pressure (mm Hg): Not available.
Relative Vapour Density: Not available.
Density: Not determined.
Solubility: Disperses in water.
n-octanol/water partition coefficient: Not available.
Decomposition temperature: 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: Will not occur.
Conditions to Avoid: Extreme heat, exposure to flames, direct sunlight.
Incompatible Materials: Strong oxidizers, strong bases and strong acids.
Hazardous Decomposition Products: Thermal decomposition yield toxic oxides of carbon, nitrogen and sulphur. Avoid temperatures above 49˚C. Hydrogen sulphide, carbon disulphide, carbon oxides, sulphur oxides and nitrogen oxides form on heating. During processing, dust may form explosive mixture in air. Decomposition by contact with water may generate vapours, which can be ignited by heat or open flame.

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY:
Calculated according to GHS
Oral LD_{50} rat > 40 000 mg/kg
Dermal LD_{50} rat > 21 000 mg/kg
Inhalation LC_{50} rat > 5.9 mg/L
Skin Irritation/Corrosion: Not classified as a skin irritant.
Eye Damage/Irritation: Not classified as an eye irritant.
Skin Sensitization: May cause an allergic skin reaction.
Respiratory Sensitization: Not available.
Reproductive cell mutagenicity: Not available.
Carcinogenicity: Not available.
Reproductive toxicity: Suspected of damaging the unborn child.

Specific target organ toxicity – single exposure: Not available.
Specific target organ toxicity – repeated exposure: Not available.
Aspiration hazard: Not available
Chronic Effects (other targets e.g. developmental)**:** Not available.
POTENTIAL ADVERSE EFFECTS:
Inhalation: May be harmful if inhaled.
Skin contact: May cause an allergic skin reaction.
Eye contact: None known.
Ingestion: Not available.

12. ECOLOGICAL INFORMATION

This product is considered to be very toxic to aquatic organisms and harmful long lasting effects may be expected.

ECOTOXICITY DATA: Based on active ingredients

Fish:

Mancozeb		
LC_{50} (96 h)	Rainbow trout	>1.0 mg/ℓ
	Bluegill sunfish	>3.6 mg/ℓ
Dimethomorph		
LC_{50} (96h)	Bluegill sunfish	>25 mg/ℓ
	Carp	14 mg/ℓ
	Rainbow trout	6.2 mg/ℓ

Daphnia:

Mancozeb		
EC_{50} (48 h)		>3.8 mg/ℓ
Dimethomorph		
EC_{50} (48h)		>10.6 mg/l

Algae:

Mancozeb		
EC_{50} (120 h)	*S. capricornutum*	0.044 mg/ℓ
Dimethomorph		
EC_{50} (96h)	*S. subspicatus*	29.2 mg/ℓ

Birds:

Mancozeb		
Acute oral LD_{50} (10d)	Mallard ducks	>5500 mg/kg
	Japanese quail	5500 mg/kg
	English Sparrows	>1290 mg/kg
	European Starlings	>2400 mg/kg
Dietary LC_{50} (8 d)	Mallard ducks	>5200 mg/kg diet
	Bobwhite quail	
Dimethomorph		
Acute oral LD_{50}	Mallard ducks	>2000 mg/kg
	Bobwhite quail	>2000 mg/kg
Dietary LC_{50} (5 d)	Bobwhite quail	>5200 ppm

Bees:

Mancozeb	
LD_{50} contact	>400 mg/bee
LD_{50} oral	>209 mg/bee
Dimethomorph	
LD_{50} contact (48h)	>102 mg/bee
LD_{50} oral (48h)	>32.4mg/bee

Worms:

Mancozeb		
LC_{50} (14d)	*Eisenia foetida*	>1000 mg/kg soil
Dimethomorph		
EC_{50}	Earthworms	>1000 mg/kg soil

Plants:
Mancozeb
Extensively metabolised in plants, forming ethylenethiourea, ethylenethiuram monosulfide, ethylenethiuram disulphide and sulphur as transitory intermediates. Terminal metabolites are natural products, especially those derived from glycine.
Dimethomorph
The only significant component of the residue, when present, is the parent compound.
ENVIRONMENTAL EFFECTS: Based on active ingredients
Mancozeb
Mancozeb breaks down rapidly in soil, sediment and water; terminal metabolites are natural products and with mineralisation to carbon dioxide. It does not bioaccumulate. Animals: Poorly absorbed and rapidly excreted in animals. The spectrum of metabolites produced was similar in the laboratory and farm animals, pointing to two common metabolic pathways, which both lead ultimately to the formation of glycine and to incorporation of the metabolites into natural products. Soil: Rapidly degraded in the environment by hydrolysis, oxidation, photolysis and metabolism. Soil DT_{50} <1d (ave., 20˚C). K_{oc} 998 mℓ/g (ave., 4 soils).
Dimethomorph
Animals: In rats, it is extensively metabolised by demethylation of the dimethoxyphenyl ring and, to a smaller extent, by oxidation of the morpholine ring. The major route of excretion was the faeces. Soil: Moderately mobile (K_d 2.09 – 11.67 mℓ/g, K_{oc} 290 – 566). Aerobic soil metabolism DT_{50} 41 – 96d (20˚C); field dissipation DT_{50} 34 - 53d. Water/sediment DT_{50} 5 – 15d (water), 16 – 59d (total system).
Persistence and degradability: Not determined.
Bio-accumulative Potential: Not expected based on active ingredients.
Mobility in soil: Not determined.
Other adverse effects: Not determined.

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. Empty containers by inverting the empty container over the spray or mixing tank. Thereafter, rinse the container three times with a volume of water equal to a minimum of one third of that of the container. Destroy the container by perforating and flattening and dispose of through an approved waste dump site, incineration plant or recycling company. Observe all labelled safeguards until container is destroyed.

14. TRANSPORT INFORMATION

UN Number: 3077
Road Transport ADR/IRD:
Class: 9
Packaging group: III
UN Proper Shipping Name: Environmentally hazardous substance, Solid, N.O.S. (**Dimethomorph Mancozeb 690 WP**)
Maritime Transport IMDG/IMO:
Class: 9
Packaging group: III
UN Proper Shipping Name: Environmentally hazardous substance, Solid, N.O.S. (**Dimethomorph Mancozeb 690 WP**)
Marine Pollutant (Y/N): **Yes**
Air Transport IATA/ICAO:
Class: 9
Packaging group: III
UN Proper Shipping Name: Environmentally hazardous substance, Solid, N.O.S. (**Dimethomorph Mancozeb 690 WP**)
Special/Environmental Precautions: None known.
Transport in bulk (according to MARPOL 73/78, Annex II and the IBC code): Not available.

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 50, 200, 250, 500g, 1, 2, 5, 10, 20, 25, 50 kg plastic containers/bags, 3 ply paper/plastic bags, polypropylene woven bags, labelled according to South African regulations and guidelines.

Additional H statements (formulants):
H411: Toxic to aquatic life with long lasting effects.

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.

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For detailed information on revisions, contact the Registration holder.