



TWIGALAXYL

United Phosphorus Ltd.

UNIPHOS HOUSE,
MADHU PARK,
11th ROAD, KHAR (W),
MUMBAI - 400 052. INDIA.

Phone : (91-22) 2646 800
Fax : (91-22) 2604 101

Regd. Office :
3-11, GIDC, Vapi - 396 195
Gujarat

UNITED PHOSPHORUS LIMITED MANCOZEB 64% + METALAXYL 8% WP (TWIGALAXYL72 WP)

MATERIAL SAFETY DATA SHEET

SECTION 1 – CHEMICAL NATURE

PRODUCT : METALAXYL+MANCOZEB 72 WP – Agricultural Fungicide

CHEMICAL NAME : METALAXYL -methyl N-(methoxyacetyl)-N-(2,6-xylyl)-DL-alaninate

MANCOZEB -Manganese ethylenebis(dithiocarbamate)(polymeric)

Complex with Zinc salt.

CHEMICAL FAMILY : Acylalanini & Dithiocarbamate

CHEMICAL FORMULA : $C_{15}H_{21}NO_4$

$[SCSNHCH_2CH_2NHCSSMn-]_x (Zn)_y$

MOLECULAR WEIGHT : Metalxyl – 279.3

Mancozeb -Not applicable

SECTION 2 – COMPOSITION, INFORMATION OF INGREDIENTS COMPONENT

	Percent Purity	CAS NO.
Metalaxyl A.I.	8%	57837-19-1
Mancozeb A.I.	64%	8018-01-7
Other ingredients	28%	

SECTION 3 – HAZARDS IDENTIFICATION SUMMARY

Emergency Overview

Yellowish green powder with musty odor.
Can cause slight to moderate skin irritation.
Avoid breathing dust or spray mist.
Keep out of reach of children.

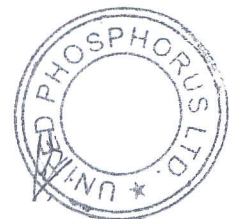
Potential Health Hazards:

EYE : Contact will cause moderate eye irritation

SKIN : Prolonged or repeated skin contact may cause irritation.

INHALATION: Mist or dust concentration may be irritating to respiratory tract and eyes.

INGESTION: This material may cause liver abnormalities on prolonged or excess.





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SECTION 4 – FIRST AID MEASURES

IF INHALED : Remove person from exposure area to fresh air, Keep patient at most comfort level and keep warm. Get medical attention.

IF ON SKIN : Remove contaminated clothing and wash skin with plenty of soap and water. Call doctor if irritation persists.

IF SWALLOWED : Do not induce vomiting. Give water to drink. Do not give anything by mouth if patient is unconscious. Seek medical attention.

IF IN EYES : Wash eyes with fresh water for 15 minutes. If irritation continues, see a doctor.

ANTIDOTE & NOTE TO PHYSICIAN : Treat symptomatically..

SECTION 5 – FIRE FIGHTING MEASURES

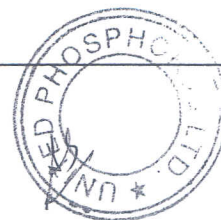
FLASH POINT - Not applicable

SPECIFIC HAZARDS : Product is combustible but not considered highly flammable

FIRE AND EXPLOSION HAZARD: Oxides of carbon, nitrogen and sulfur, hydrogen sulfides and carbon sulfides.

EXTINGUISHING INSTRUCTION: Use foam, Water fog/water spray ,dry agents (Carbon dioxide, dry chemical powder).

FIRE FIGHTING EQUIPMENT: Wear self-contained breathing apparatus pressure –demand, MSHA/NIOSH and full protective gear.





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SECTION 6 – ACCIDENTAL RELEASE MEASURES

Clean up spills immediately, observing precautions. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Vacuum or sweep up material and place in properly labeled disposal container. Large spills may be neutralized with dilute solutions of soda ash or lime. After removal, flush contaminated area thoroughly with water. Do not allow any material to run off in soil, drainage systems or bodies of water. Notify and consult with proper regulatory authorities.

SECTION 7 – HANDLING AND STORAGE

KEEP OUT OF REACH OF CHILDREN

Handling : Use only in well ventilated area. Follow all MSDS/label precautions even after container is emptied because they may retain product residues.

Storage : Store in a cool dry place in original container and protect from sunlight. Keep away from food, animal feed and drinking water.

SECTION 8 – EXPOSURE CONTROLS, PERSONAL PROTECTION

ENGINEERING CONTROL: Local exhaust ventilation may be necessary to control any air contaminants to within their TLV's during the use of this product. Facilities storing or utilizing this material should be equipped with eyewash facility and safety shower.

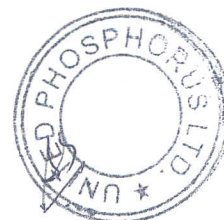
PERSONAL PROTECTIVE EQUIPMENT:

EYE PROTECTION - Safety glasses

CLOTHING – Long sleeved shirt and long pants, shoes plus socks, chemical resistant headgear for overhead exposures.

GLOVES – Waterproof gloves.

USER SAFETY RECOMMENDATIONS – Wash hands before eating, drinking, and chewing gum, using tobacco or using the toilet. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change in to clean clothing.





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SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES (Technical)

PHYSICAL DESCRIPTION: Yellowish powder.

ODOR: Weak uncharacteristic.

MELTING POINT: Not applicable

DENSITY: 0.39 g/cm³

VAPOR PRESSURE: Not available

WATER SOLUBILITY: Practically insoluble

SECTION 10 – STABILITY AND REACTIVITY

CHEMICAL STABILITY: Usually Stable

CONDITIONS TO AVOID: Protect from moisture, heat, open flames or other source of ignition.

INCOMPATIBILITY WITH OTHER CHEMICALS: Oxidizing agents, acids, polar solvents such as alcohol.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon disulfide, hydrogen sulfide.

HAZARDOUS POLYMERISATION: Product may undergo polymerization.

SECTION 11 – TOXICOLOGICAL INFORMATION

ACUTE TOXICITY: Oral LD₅₀ (rat,) - >5000 mg/kg body weight
Dermal LD₅₀ (rat) - >2000mg/kg body weight
Inhalation LC₅₀ (rat) - > 5 mg/l of air
Eye Irritation (rabbit) - Moderate- irritant
Skin Irritation (rabbit) - Slight irritant
Sensitization (guinea pig) - Dermal-sensitizer

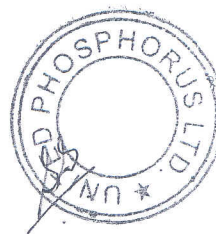
SECTION 12 – ECOLOGICAL INFORMATION

Environmental Summary – This pesticide is practically non toxic to birds and honey bees. It practically non toxic to fish and aquatic invertebrates. But Mancozeb is toxic to fish.

SECTION 13 – DISPOSAL CONSIDERATIONS

Waste – Dispose of in accordance with applicable Federal, State, local laws and regulations.

Container – Empty the containers inner with equipment. Do not re-use the container. Dispose of empty containers in a sanitary landfill or incineration so as to avoid environmental or water pollution.





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SECTION 14 – TRANSPORT INFORMATION

IATA / Air Transport –

Proper Shipping Name - Environmentally Hazardous Substance, Solid, N.o.s. (Metalaxyl+Mancozeb 72 WP)

UN No – UN 3077

Packaging Class and Group – 9 and III

Label – M.P.

EMS No. NONE

SECTION 15 - MANUFACTURE'S / SUPPLIER'S DATA

Name of Firm: UNITED PHOSPHORUS LIMITED

Mailing: UNIPHOS HOUSE, MADHU PARK,
KHAR (WEST), MUMBAI-400 52.,
MAHARASHTRA (INDIA)

Tel. 0091-22 - 2640 1111

Fax 0091-22- 2640 1010

Local Bodies Involved

Collector of Ankaleswar
Gujarat, India

Manufacturing Site

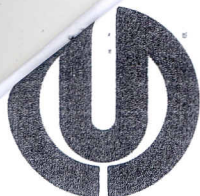
United Phosphorus Limited,
117, GIDC,
Ankaleswar Gujarat, - 393002
Tel. 0091 - 02646 – 50336
Fax 0091- 02646 –50297

SECTION 16 - DISCLAIMER

The Information contained in this material data sheet is believed to be reliable but no representation, guarantee or warranties, of any kind are made as to its accuracy, suitability for a particular application or results to be obtained from them. It is however ensured that the information contained in the material safety data sheet is relevant to the product manufactured / handled or sold as the case may be by us. **United Phosphorus Limited.** Makes no warranty expressed or implied in respect of the adequacy of this document for any particular purpose.

Date: 14/09/2012





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11th ROAD, KHAR (W),
MUMBAI - 400 052. INDIA.

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UNITED PHOSPHORUS LIMITED

MANCOZEB ANALYTICAL STANDARD

MATERIAL SAFETY DATA SHEET

SECTION 1 – CHEMICAL NATURE

PRODUCT : MANCOZEB ANALYTICAL (REF.) STANDARD – Agricultural Fungicide

CHEMICAL NAME : Manganese ethylenebis(dithiocarbamate)(polymeric)
complex with Zinc salt.

CHEMICAL FAMILY : Dithiocarbamate

CHEMICAL FORMULA : $[\text{SCSNHCH}_2\text{CH}_2\text{NHCSSMn-}]_x (\text{Zn})_y$

SECTION 2 – COMPOSITION, INFORMATION OF INGREDIENTS COMPONENT

	Percent Purity	CAS NO.	OSHO PEL	ACIGH TLV
Mancozeb	85% Min	8018-01-7	not listed	not listed

SECTION 3 – HAZARDS IDENTIFICATION SUMMARY

Emergency Overview

Yellowish green powder with musty odor.
Can cause slight to moderate skin irritation.
Avoid breathing dust or spray mist.
Keep out of reach of children.

Potential Health Hazards:

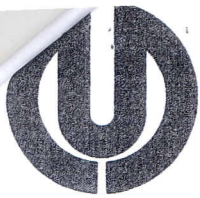
EYE : Contact will cause eye irritation

SKIN : Prolonged or repeated skin contact may cause irritation.

INHALATION: Mist or dust concentration may be irritating to respiratory tract.

INGESTION: This material may cause vomiting, nausea, diarrhoea and abdominal cramps.





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MANCOZEB ANALYTICAL STANDARD

SECTION 4 – FIRST AID MEASURES

IF INHALED : Remove person from exposure area to fresh air, Keep patient at most comfort level and keep warm. Get medical attention.

IF ON SKIN : Remove contaminated clothing and wash skin with plenty of soap and water.

IF SWALLOWED : rinse mouth with water. Avoid giving alcohol. if vomiting occurs give more water. Seek medical attention.

IF IN EYES :Wash eyes with fresh water for 15 minutes. If irritation continues, see a doctor.

ANTIDOTE & NOTE TO PHYSICIAN : Treat symptomatically..

SECTION 5 – FIRE FIGHTING MEASURES

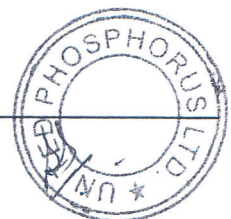
FLASH POINT - Not applicable

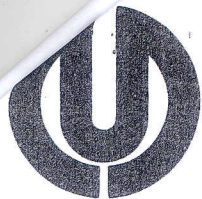
SPECIFIC HAZARDS: Non – combustible solid.

FIRE AND EXPLOSION HAZARD: On burning may emit toxic fumes.

EXTINGUISHING INSTRUCTION: Use foam, Water fog/water spray ,dry agents (Carbon dioxide,dry chemical powder).

FIRE FIGHTING EQUIPMENT: Wear self-contained breathing apparatus pressure –demand, MSHA/NIOSH and full protective gear.





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MANCOZEB ANALYTICAL STANDARD

SECTION 6 – ACCIDENTAL RELEASE MEASURES

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SECTION 7 – HANDLING AND STORAGE

KEEP OUT OF REACH OF CHILDREN

Handling : Use only in well ventilated area. Follow all MSDS/label precautions even after container is emptied because they may retain product residues.

Storage : Store in a cool dry place in original container and protect from sunlight. Keep away from food, animal feed and drinking water.

SECTION 8 – EXPOSURE CONTROLS, PERSONAL PROTECTION

ENGINEERING CONTROL: Local exhaust ventilation may be necessary to control any air contaminants to within their TLV's during the use of this product. Facilities storing or utilizing this material should be equipped with eyewash facility and safety shower.

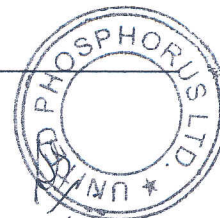
PERSONAL PROTECTIVE EQUIPMENT:

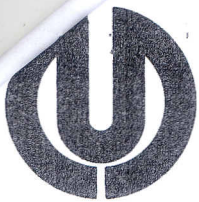
EYE PROTECTION - Safety glasses

CLOTHING – Long sleeved shirt and long pants, shoes plus socks, chemical resistant headgear for overhead exposures.

GLOVES – Waterproof gloves.

USER SAFETY RECOMMENDATIONS – Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing immediately if pesticide gets inside . Then wash thoroughly and put on clean clothing. Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible , wash thoroughly and change in to clean clothing.





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MANCOZEB ANALYTICAL STANDARD

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES(Technical)

PHYSICAL DESCRIPTION: Yellowish powder.

ODOR: Musty odor

CHEMICAL FORMULA: $[SCSNHCH_2CH_2NHCSSMn]_x (Zn)_y$

MOLECULAR WEIGHT : Not applicable

MELTING POINT: 192 –204 °C

DENSITY: 1.92 g/cc

VAPOR PRESSURE: Negligible at 20 °C

WATER SOLUBILITY: Practically insoluble

SECTION 10 – STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable

CONDITIONS TO AVOID: May cause explosive reaction on contact with oxidizing agents.

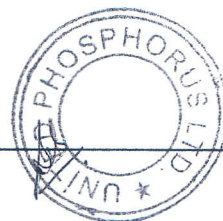
INCOMPATIBILITY WITH OTHER CHEMICALS: Finally divided metals, Alkaline metals and mineral acids.

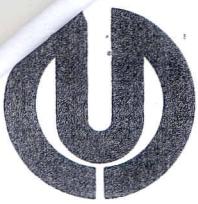
HAZARDOUS DECOMPOSITION PRODUCTS: Not available.

HAZARDOUS POLYMERISATION: Product may undergo polymerization.

SECTION 11 – TOXICOLOGICAL INFORMATION (Technical)

ACUTE TOXICITY: Oral LD ₅₀ (rat,)	- >5000 mg/kg body weight
Dermal LD ₅₀ (rat)	- >2000mg/kg body weight
Inhalation LC ₅₀ (rat)	- > 5.14 mg/l of air
Eye Irritation (rabbit)	- Moderate- irritant
Skin Irritation (rabbit)	- Slight irritant
Sensitization (guinea pig)	- Weak-sensitizer





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MANCOZEB ANALYTICAL STANDARD

SECTION 12 – ECOLOGICAL INFORMATION

Environmental Summary – This pesticide is less toxic to birds.

Do not apply directly to water and areas where surface water is present as product is marine pollutant.

This pesticide is not toxic to bees.

SECTION 13 – DISPOSAL CONSIDERATIONS

Waste – Dispose of in accordance with applicable Federal, State, local laws and regulations.

Container – Empty the container with equipment. Do not re-use the container. Dispose of empty containers in a sanitary landfill or incineration so as to avoid environmental or water pollution.

SECTION 14 – TRANSPORT INFORMATION

IATA / Air Transport –

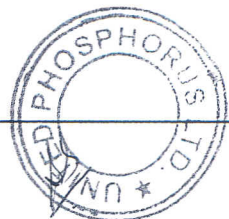
Proper Shipping Name - Environmentally Hazardous Substance, Solid, N.o.s. (Mancozeb Analytical Standard)

UN No – UN 3077

Packaging Class and Group – 9 and III

Label – M.P.

EMS No. NONE





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MANCOZEB ANALYTICAL STANDARD

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MAHARASHTRA (INDIA)

Tel. 0091-22 - 2640 1111

Fax 0091-22- 2640 1010

Local Bodies Involved

Collector of Ankaleswar
Gujarat, India

Manufacturing Site

United Phosphorus Limited,
117, GIDC,
Ankaleswar Gujrat, - 393002
Tel. 0091 - 02646 - 50336
Fax 0091- 02646 -50297

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Date: 14/09/2012

