

MATERIAL SAFETY DATA SHEET OF METALAXYL 8% + MANCOZEB 64% WP

1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION:

Common Name	Metalaxyl 8% + Mancozeb 64% WP
Chemical Name	a) Metalaxyl : Methyl N-(Methoxyacetyl)-N-(2,6-xylyl)-DL-alaninate; Methyl 2{ [2,6-dimethylphenyl methoxyacetyl] amino } propionate b) Mancozeb : Manganese ethylenebis(di thio carbanate) (polymeric) complex with Zinc Salt.
Intended Use	Herbicide
Pesticide Family	Mancozeb: ECDB Family Matalaxyl: acylalamine family.
Manufactured By	JAI SHREE RASAYAN UDYOG LTD. M-4, Aradhana Bhawan, Commercial Complex, Azadpur, Delhi-110 033 Telephone No. : 91-11- 45750100-40 Telefax : 91- 11- 45750140
Empirical Formula	a) Metalaxyl - $C_{15}H_{21}NO_4$, b) Mancozeb - $[Cu H_6 Mn N_2 S_4] Zny$
CAS NO.	a) Metalaxyl - 57837-19-1 b) Mancozeb - 8018-01-7
Molecular weight	a) Metalaxyl - 330.67 b) Mancozeb - 271.2

2. PHYSICAL & CHEMICAL PROPERTIES

Physical state	: Metalaxyl : Powder ; Mancozeb : Powder ;
Colour	: Metalaxyl : fine white Mancozeb : grayish yellow;
Acidity (As H_2SO_4)	: None;
Solubility	: Metalaxyl : In water 8.4g/l (22°C) ; In solvents : in ethanol 400, acetone 450, toluene 340, n-hexane 11 n-octanol 68 (all in g/l, 25°C). Mancozeb : In water :6.2 ppm (PH 7.5, 25°C) ; Insoluble in most organic solvents; dissolves in solutions of powerful

chelating agents but cannot be recovered from them

Stability	: Metalaxyl : stable up to 300°C, stable in natural and acidic media at room temperature; Mancozeb : stable under normal, dry storage conditions, slowly decomposed by heat and moisture;
Compatibility	: Metalaxyl : Can compatible with many common pesticides; Mancozeb : Can compatible with many common pesticides;
Odour	: Metalaxyl : Slight specific odour ; Mancozeb : Slight specific odor of hydrogen sulfide;
Acidity / Alkalinity or pH Value	: Metalaxyl : 0.5%by mass Max. Mancozeb : none
Boiling point / range	: Metalaxyl : 295.9°C / 101kPa; Mancozeb : none
Melting point / range	: Metalaxyl : 63.5 - 72.3°C Mancozeb : decompose at 172°C
Flash point	: Metalaxyl : 155°C Mancozeb : 137.8°C
Flammability	: Not flammable. Dust-air mixtures may ignite or explode
Oxidising properties	: Slight oxidizing (metalaxyl)
Vapour pressure	: Metalaxyl : 0.75mPa (25°C) Mancozeb : <0.0133mPa (20°C) ; /< 1.33 x 10 ⁻² mpa (20°C)
Bulk Density	: Not applicable
Water solubility	: Practically soluble in water.

3. COMPOSITION / INGREDIENTS

Matalaxyl(ai) -	8% m/m
Mancozeb(ai) -	64% m/m
Wetting agent -	1.4% m/m
Dispersing agent-	0.6% m/m
Silica -	0.6% m/m
Kaolin -	25.4% m/m

4. HAZARDS IDENTIFICATION

Toxicity Class	: A low Toxicity Fungicide EPA IV
Symptoms of poisoning	: Irritant
Skin	: Minimally toxic and not irritating.
Eyes	: Moderate eye irritation
Inhalation	: May be Irritating to the respiratory system
Ingestion	: Minimally Toxic
Other information	:
Physical/chemical effects	:
Environmental effects	:

5. FIRST AID

Skin contact	: Remove contaminated clothing, shoes and leather goods, Gently wipe off excess chemical. Wash skin gently and thoroughly with water and non-abrasive soap. Seek medical advice, if necessary. Persons who become sensitized may require specialized medical management with anti-inflammatory agents.
Eyes Contact	: Immediately flush the eyes with gently flowing, lukewarm water or saline solution for 20 minutes, occasionally lifting the upper and lower lids. Obtain medical attention if necessary.
Inhalation	: Remove source of contamination or move victim to fresh air. Keep victim warm and at rest. Treat symptomatically and Supportively. Obtain medical advice if necessary.
Ingestion	: Induce emesis, keeping head below hips to prevent aspiration. Following emesis, have victim drink a suspension of activated charcoal with water to bind toxicant remaining in the gastrointestinal tract. Follow charcoal with sodium or magnesium sulphate to induce catharsis. Seek medical advice if necessary.
Other information	: Treat symptomatically and supportively as and when required. Gastric leavage may be indicated. Administer charcoal slurry, aqueous or mixed with saline cathartic or sorbital.
Antidote	: No specific antidote is known, Treat symptomatically.

6. FIRE AND EXPLOSION DATA

Flash point	: 138 °C
Extinguishing media	: Preferred extinguishing media are Carbon Dioxide,dry chemical,Foam,water Fog.
Unsuitable extinguishing	
Special exposure hazards	: Fire may produce irritating or poisonous vapours(toxic oxides of carbon, nitrogen and sulphur) of combustion.
Special protective	

7. ACCIDENTAL RELEASE MEASURES

Personal Precautions	: Avoid Contact with skin and eyes .Do not breathe in fumes
Method of Cleaning Up	:
Environmental Precautions	: Do not allow entering drains or watercourses. When the product contaminates public waters, inform appropriate authorities immediately in accordance with local regulations
Occupational spill	: For small dry spills, sweep up with damp earth or sand or other suitable absorbents, such as sawdust, taking care not to raise a dust cloud. 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. Do not flush spilled material into drains. For large spills contact the manufacturer. Contain liquid far ahead of spill. Contain spillage and contaminated water and soil for subsequent disposal. Do not flush spilled material into drains. Keep spectators away and upwind.

8. HANDLING AND STORAGE

Handling	: Keep product in original tightly closed container. Remove sources of naked flame or sparks. Avoid contact with eyes, prolonged contact with skin, and inhalation of dust and vapour. Use with adequate ventilation. 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. Do not apply directly to areas where
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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

: Store bagged material only on pallets **no more than 3 metre high**. Provide access aisles for each 2 rows. Loose bags could not be stacked more than 2x2x2 meters. **Dense packaging of unvented stacks of bags or boxes may lead to product decomposition posing a fire hazard.** Decomposition produces a foul odor. Check for hot containers and immediately remove to open areas for disposal. Keep out of reach of unauthorised persons, children and animals. Store in its original labeled container in shaded, well-ventilated area, away from heat, sparks and other sources of ignition. Not to be stored next to foodstuffs and water supplies. Local regulations should be complied with.

9. EXPOSURE CONTROLS/ PERSONAL PROTECTION.

Occupational exposure limits : No occupational limits are established .

Engineering control measures : 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. . Only spark –resistant equipment should be used. Comply with occupational safety, environmental, fire and other applicable regulations.

PERSONAL PROTECTIVE EQUIPMENT:

Respirator

: An approved full-face 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. Comply with occupational safety, environmental, fire, and other applicable regulations.

Clothing

: Employee must wear appropriate protective (impervious) clothing, boots and equipment to prevent repeated or prolonged skin contact with this substance. Do not wear leather clothing.

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Gloves

: Employee must wear appropriate chemical resistant Protective gloves to prevent contact with this substance.

Eye protection

: The use of safety goggles is recommended. *Emergency eye wash:* 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.

10. STABILITY AND REACTIVITY

Stability	: Stable under normal, dry storage conditions. Slowly decomposed by heat and moisture
Conditions to avoid	: No special precautions other than good housekeeping of chemicals.
Incompatibility	: Incompatible with oxidation materials and acids. The Product is compatible with many 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.
Hazardous decomposition	: Thermal decomposition products may emit toxic fumes of hydrogen cyanide and oxides of carbon and nitrogen.

11. TOXICOLOGICAL INFORMATION (a.i.)

LD ₅₀ Acute Oral	>2000 mg/kg in rats.
LD ₅₀ Acute Dermal	>2000 mg/kg in rats & rabbits.
LC ₅₀ Acute Inhalation	>6,2 mg/L in rats.
Skin Irritation	Non – irritation to rabbit skin
Eye Irritation	Moderate irritation (M3) to rabbit eye.
Dermal sensitisation	The product provokes extreme dermal sensitization(Guinea Pigs)
Mutagenicity	Results taken from animal studies suggest that the product is not mугenic.

12. ECOLOGICAL INFORMATION (a.i.)

Bees	Non Toxic to bees
Birds	Japanese Quail LD50 : >2000 mg/kg
The Aquatic Organisms (Daphnia, Algae	Toxic to Daphnia Magna EC50 (48h) : > 0,900mg/L Alage (Selenastrum capricornutum): EbC50 (0-72h; biomass) : 0.49 mg/L ErC50 (0-72h; growth rate) : 5,74 mg/L
	Fishes : Very toxic to fish. Cyprinus carpio LC50 (96H) = 19 mg/L Rainbow Trout LC50 (96H) = 0,3 mg/L

13. TRANSPORT INFORMATION

UN No.	3077
IMCO Class	9
IMDG PG	3077
Packing Group	III
Proper Shipping Name	Environmentally hazardous substance, solid, n.o.s
Environmental risk	9 Marine pollutant

14. REGULATORY INFORMATION

Hazard Symbol	(Xi)
Risk phrases	R 37, R 43
Safety Phrases	S 2, S 8, S 24/25, S 36/37/39, S 46

15. DISPOSAL PROCEDURES

Pesticide disposal	Contaminated absorbents, used containers, surplus product, etc., should be burnt at > 1000oC in an incinerator, preferably designed for pesticide disposal, or buried in an approved landfill. Comply with local legislation applying to waste disposal.
Container disposal	<ol style="list-style-type: none">1. Emptied containers retain product residues. Observe all labelled safeguards until container is cleaned, reconditioned, or destroyed. Combustible containers should be disposed of in pesticide incinerators or buried in an approved landfill.2. Noncombustible containers must first be triple-rinsed with water.3. Containers that are not to be reused and should be punctured and transported to a scrap metal facility for recycling or disposal.

16. OTHER INFORMATION

It is excellent systemic fungicide composed of Metalaxyl 8% + Mancozeb 64% W/W effectively used to control of range of Omycete fungi in variety of crops.

The information contained in this safety data sheet is given in good faith. It is accurate to our best of knowledge and belief and represents the most upto date information. The information given in this data sheet does not constitute or replace the users own assessment of work place risk as required by other health and safety legislation. Jai Shree Rasayan Udyog Ltd. will not be liable for any claims or damages arising out of use of this information.

For JAI SHREE RASAYAN UDYOG LTD.

AUTHORISED SIGNATORYs