



MATERIAL SAFETY DATA SHEET

SECTION 1 CHEMICAL PRODUCT & COMPANY IDENTIFICATION

Product Name: Metalaxyl + Mancozeb

Active Ingredient (%): Mancozeb (64%).

Chemical Name: Zinc ion and manganese-ethylene-bis-dithio carbamate.

Chemical Class: Fungicide.

Active Ingredient (%): Metalaxyl (8%).

Chemical Name: N-(2,6-dimethylphenyl)-N-(methoxyacetyl)-alanine methyl ester.

Chemical Class: Acetanilide fungicide.

SECTION 2 COMPOSITION/INFORMATION ON INGREDIENTS

| Composition | Percent, % | CAS RN |
|-------------|------------|------------|
| Metalaxyl | 8 | 57837-19-1 |
| Mancozeb | 64 | 8018-01-7 |

SECTION 3 HAZARDS IDENTIFICATION

Health Effects:

No specific data is available for the product for chronic exposure symptoms. The ingredients are not listed as carcinogenic in Worksafe's document "Exposure Standards for Atmospheric Contaminants in the Occupational Environment" (May 1995)

Acute Effects:

Swallowed: Data suggests that this product is harmful if swallowed.

Eye: This product may irritate eyes. However, it is unlikely to cause any more than mild transient discomfort. It is also unlikely to cause any significant lasting effects.

Skin: This product may irritate skin. However, it is unlikely to cause any more than mild transient discomfort. It is also unlikely to cause any significant lasting effects.

Inhalation: Data indicates that this product may be irritating if inhaled. May lead to minor discomfort which should quickly disappear once exposure has ceased.

SECTION 4 FIRST AID MEASURES

If poisoning is suspected, immediately contact a physician, the nearest hospital, or the

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nearest Poison Control Center. Tell the person contacted the complete product name and the type and amount of exposure. Describe any symptoms and follow the advice given.

Ingestion: If victim is fully conscious, immediately give 1 or 2 glasses of water to drink and induce vomiting. Never give anything by mouth to an unconscious person.

Eye Contact: Immediately rinse eyes with a large amount of running water. Hold eyelids apart to rinse the entire surface of the eyes and lids. Do not apply any medicating agents except on the advice of a physician.

Skin Contact: Wash with plenty of soap and water, including hair and under fingernails. Do not apply any medicating agents except on the advice of a physician. Remove contaminated clothing and decontaminate prior to use.

Inhalation: Move victim from contaminated area to fresh air. Apply artificial respiration if necessary.

Notes to Physician: There is no specific antidote if this product is ingested. If a large amount has been ingested and emesis is inadequate, lavage stomach. An aqueous suspension of activated charcoal can be administered to absorb remaining toxicant.

Medical Condition Likely to be Aggravated by Exposure: Individuals with asthma or other preexisting respiratory conditions should use extra care in handling this product.

SECTION 5 FIRE FIGHTING MEASURES

Fire and Explosion

Flash Point (Test Method): Not applicable.

Flammable Limits (% in Air): Lower: %; Upper: % Not applicable.

Autoignition Temperature: 115 C (Technical).

Flammability: Not flammable.

Unusual Fire, Explosion, and Reactivity Hazards: Exposure to excessive heat or ignition source presents a definite ignition hazard. Fire can occur in closely packed, unventilated piles of bags. Exposure to moisture promotes decomposition which can cause spontaneous combustion. Thermal decomposition products may include, but are not limited to, carbon disulfide, hydrogen sulfide, and oxides of sulfur, nitrogen, or carbon.

In Case of Fire: Use dry chemical, foam, or CO₂ extinguishing media. Wear full protective clothing and self-contained breathing apparatus. Evacuate nonessential personnel from the area to prevent human exposure to fire, smoke, fumes, or products of combustion. Prevent use of contaminated buildings, area, and equipment until decontaminated.

SECTION 6 ACCIDENTAL RELEASE MEASURES

In Case of Spill or Leak: Wear chemical safety glasses with side shields or chemical



goggles, rubber gloves, rubber boots, long-sleeved shirt, long pants, head covering, and a NIOSH-approved dust or pesticide respirator with dust prefilters. For small spills, sweep up, keeping dust to a minimum, and place in an approved chemical container. Wash the spill area with water containing a strong detergent, absorb with pet litter or other absorbent material, sweep up, and place in a chemical container. Seal the container and handle in an approved manner. Flush the area with water to remove any residue. Do not allow wash water to contaminate water supplies.

SECTION 7 HANDLING AND STORAGE

Store the material in a well-ventilated, secure area out of the reach of children and domestic animals. Do not store food, beverages, or tobacco products in the storage area. Prevent eating, drinking, tobacco usage, and cosmetic application in areas where there is a potential for exposure to the material. Always wash thoroughly after handling.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingestion: Prevent eating, drinking, tobacco usage, and cosmetic application in areas where there is a potential for exposure to the material. Always wash thoroughly after handling.

Eye Contact: To avoid eye contact, wear safety glasses with side shields or chemical goggles.

Skin Contact: To avoid skin contact, wear rubber gloves, rubber boots, long-sleeved shirt, long pants, and a head covering.

Inhalation: To avoid breathing dust, wear a NIOSH-approved dust or pesticide respirator with dust prefilters.

SECTION 9 PHYSICAL PROPERTIES

Appearance: Yellow powder

Melting Point: Not available.

Boiling Point: Not applicable.

pH: 6-9 (1% solution in H₂O at 25°C).

Solubility in H₂O

Mancozeb: Not available.

Metalaxyl: 8.4 g/L at 22°C.

Vapor Pressure

Mancozeb: Not available.

Metalaxyl: 7.50E-04 Pa at 25°C.

SECTION 10 STABILITY AND REACTIVITY

Stability: This product is unlikely to spontaneously decompose.

Hazardous Polymerization: Will not occur.

Conditions to Avoid: Strong acids, strong oxidizers, polar solvents, such as water or alcohol, high temperatures.

Decomposition Products: Carbon dioxide, and if combustion is incomplete, carbon monoxide and smoke. Nitrogen, and under some circumstances, oxides of nitrogen. Oxides of sulfur (sulfur dioxide is a respiratory hazard). Water.

SECTION 11 TOXICOLOGICAL INFORMATION

Acute Toxicity/Irritation Studies

Ingestion: Practically nontoxic.

Oral LD50 (Rat): 4,980 mg/kg body weight.

Dermal: Slightly toxic.

Dermal LD50 (Rabbit): > 2,020 mg/kg body weight.

Inhalation: Slightly toxic.

Inhalation LC50 (Rat): > 2.67 mg/l air--4 hours.

Eye Contact: Mildly irritating (rabbit).

Skin Contact: Slightly irritating (rabbit).

Skin Sensitization: Not a sensitizer (guinea pig).

Mutagenic Potential

Mancozeb: None observed.

Metalaxyl: None observed.

Reproductive Hazard Potential

Mancozeb: Birth defects: developmental malformations (rats).

Metalaxyl: None observed.

Chronic/Subchronic Toxicity Studies

Mancozeb: Thyroid, liver, and nervous system effects (lab animals). Inhibition of thyroid synthesis and disruption of hormonal balance (rats). Toxic effects arise from metabolism of small amounts to ETU. Other endocrine organs, the liver, and blood (dogs). Hind-leg paralysis and systemic toxicity (rats). Irritation of eyes, skin, and respiratory system.

Metalaxyl: Liver effects at high dose levels. Carcinogenic Potential

Mancozeb: Thyroid, pituitary, and liver tumors (rats).

Metalaxyl: None observed.

Other Toxicity Information: Not available.

SECTION 12 ECOLOGICAL INFORMATION

Summary of Effects

Mancozeb: Not available.

Metalaxyl: Metalaxyl is slightly toxic to birds and aquatic invertebrates. Metalaxyl is practically nontoxic to fish.

Eco-Acute Toxicity

Metalaxyl: Rainbow Trout 96-hour LC50 130 mg/L

Bluegill Sunfish 96-hour LC50 150 mg/L

Daphnia magna 48-hour LC50 28 mg/L

Mallard Oral LD50 1,466 mg/kg

Bobwhite 8-day Dietary LC50 >10,000 ppm

Mallard 8-day Dietary LC50 >10,000 ppm

Mancozeb: Rainbow Trout 96-hour LC50 1.9 mg/L

Bluegill Sunfish 96-hour LC50 1.63 mg/L

Daphnia magna 48-hour LC50 1.0 mg/L

Bobwhite Oral LD50 6,400 mg/kg

Mallard Oral LD50 >6,400 mg/kg

Eco-Chronic Toxicity

Metalaxyl: Fish (Fathead minnow) Early Life Stage MATC >9.1 mg/L

Invertebrate (Daphnia Magna) Life Cycle MATC 1.8 mg/L

Mallard Reproduction NOEC 300 ppm

Bobwhite Reproduction NOEC 900 ppm

Mancozeb: Not available.

Environmental Fate

Mancozeb: Not available.

Metalaxyl: Not available.

SECTION 13 DISPOSAL CONSIDERATIONS

Disposal: Do not reuse product containers. Dispose of product containers, waste containers, and residues according to local, state, and Federal health and environmental regulations.

Characteristic Waste: Not applicable.

Listed Waste: Not applicable.

SECTION 14 TRANSPORTATION INFORMATION

UN No: 3077

Toxic Class: 9

Packing group: III

SECTION 15 REGULATORY INFORMATION

R-phrase:

R-22: Harmful if swallowed.

S-phrase:

S-20: When using, do not eat or drink.

SECTION 16 OTHER INFORMATION

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