

Material Safety Data Sheet

Solan MZ

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1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product name: Solan MZ Potato ST Fungicide**Norac Concepts Inc.**
P.O. Box 31097, Guelph, ON N1H 8K1
T: 519-821-3633**Emergency telephone number:** All hours, 613-787-5620, **ONLY** for health and environmental information.

2. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous ingredients	% (w/w)	ACGIH TLV	CAS No.
Mancozeb	16	Not listed	8018-01-7
Dolomitic limestone	40 – 60	10 mg/m ³	Mixture
Crystalline Silica - Quartz	< 1	10 mg/m ³	14808-60-7

Synonyms: Mancozeb – Manzate, Dithane.**Chemical name:** Manganese ethylenebis(dithiocarbamate) polymer with zinc.**Chemical family:** Dithiocarbamate.**Product use:** Agricultural fungicide.**Registration number:** 29377 Pest Control Products Act.

3. HAZARDS IDENTIFICATION

Physical Properties: Light tan powder with a musty odour.**Route of entry:** Eyes, skin, Ingestion and inhalation.**Symptoms of acute exposure:** May cause irritation to the eyes, skin and respiratory tract. Crystalline Silica is possible carcinogenic to humans. Moisture and elevated temperatures may cause mancozeb to decompose, resulting in toxic fumes and potential fire.**Effects of chronic exposure:** Repeated exposure to Mancozeb at high doses affects the thyroid, liver and nervous systems.

4. FIRST AID MEASURES

Inhalation: Move person to fresh air. Call 911 **IMMEDIATELY** for medical assistance. Give artificial respiration **ONLY** if breathing has stopped. Give cardiopulmonary resuscitation (CPR) if there is no breathing **AND** no pulse.**Skin contact:** Remove contaminated clothing immediately. Flush skin with running water for a minimum of 20 minutes. If irritation persists obtain medical attention.**Eye contact:** Immediately flush eyes with running water for a minimum of 20 minutes. Hold eyelids open during flushing. If irritation persists obtain medical attention.**Ingestion:** Call 911 **IMMEDIATELY** for medical assistance. If person is alert and not convulsing, rinse mouth out and give 1 cup of water to dilute material. If spontaneous vomiting occurs, have victim lean forward with head down to avoid breathing in vomit, rinse mouth and administer more water.**Notes to Physician:** There is on specific antidote, treat symptomatically

5. FIRE FIGHTING MEASURES

Flash point: Not applicable.**Autoignition temperature:** No data.

Flammable limits (lower): No data

Flammable limits (upper): No data

Extinguishing media: For large fires, apply aqueous film forming foam or water in the form of a fog. For small fires, use carbon dioxide or dry chemical.

Fire-fighting procedures: Wear self-contained breathing apparatus and impervious clothing. Minimize the amount of water used and contain the run-off from entering water supplies or the environment by dyking.

Other fire and explosion hazards: Thermal decomposition may produce toxic fumes of hydrogen sulphide, carbon disulphide and oxides of carbon, nitrogen and sulphur. Dusts at sufficient concentrations can form explosive mixtures with air.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Wear personal protective equipment as described in Section 8.

Environmental precautions: Stop any further release to land or water. For water, utilize damming and/or water diversion to minimize spread of contamination to the environment.

Spills, leaks or releases: Wash hard surfaces with detergent and water, then absorb with absorbent. Collect any spilled material, contaminated soil, water and absorbent and place in a waste container for proper disposal. Notify applicable government authority if release is reportable or could adversely affect the environment.

Deactivating chemicals: None known.

7. HANDLING AND STORAGE

Handling procedures: Use only with adequate ventilation. Avoid breathing dusts, and contact with eyes, skin and clothing. Wear appropriate personal protective equipment. Wash thoroughly after use. If clothing becomes contaminated, wash thoroughly before re-use.

Storage requirements: Store in a cool, well-ventilated area. Keep containers closed. Keep out of reach of children and pets. Keep away from heat, sparks, flames and moisture. Do not allow product to become wet or overheated during storage as product may decompose resulting in toxic fumes and potential fire.

Storage temperature: Ideal storage temperature is 10°C to 30°C. Do not expose product to temperatures above 40°C.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Eye protection: Use chemical safety goggles when there is a potential for eye contact.

Skin protection: Chemical-resistant gloves and protective clothing that is impervious under conditions of use.

Respiratory protection: NIOSH/MSHA-approved respirator equipped with pesticide cartridges, if required.

Other protective equipment: None required.

Engineering controls: Provide local exhaust and/or adequate ventilation.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Light tan powder.

Odour: Slight musty odour.

Bulk density: 44 g / 100 mL

Boiling point: No data.

Melting point: No data.

Solubility (water): Insoluble.

Solubility (other): No data.

pH: 6.5

% volatile: Negligible.

Evaporation rate (ether=1): Not applicable.

Vapour pressure (mm Hg at 20°C): Not applicable.

Vapour density (air=1): Not applicable.

10. STABILITY AND REACTIVITY

Chemical stability: Stable at room temperature and storage conditions.

Hazardous polymerization: Will not occur.

Conditions to avoid: Keep away from elevated temperatures, heat and sources of ignition. Avoid moisture and humidity in storage.

Incompatibility with other substances: Strong oxidizing and reducing agents, acids and moisture.

Hazardous decomposition products: Mancozeb decomposes at 192°C to 204°C. Decomposition generates toxic fumes of hydrogen sulphide, carbon disulphide and oxides of carbon, nitrogen and sulphur. Elevated temperatures or moisture may cause the product to decompose, resulting in toxic fumes and potential of fire.

11. TOXICOLOGICAL INFORMATION

Mancozeb

Oral LD₅₀ (rat) = > 5000 mg/kg

Dermal LD₅₀ (rabbit) = > 5000 mg/kg

Inhalation LC₅₀ (rat) = > 5.14 mg/L/4 hrs

Inhalation: High concentrations of this product may cause irritation to the respiratory tract.

Skin contact: Prolonged or repeated exposure may cause skin irritation. Mancozeb has been infrequently associated with sensitization in humans.

Eye contact: Direct contact may cause moderate eye irritation.

Ingestion: Ingestion may cause irritation to the gastrointestinal tract.

Subchronic effects: Sensitization is the process whereby a biological change occurs in the individual because of previous exposure to a substance and, as a result, the individual reacts more strongly when subsequently exposed to the substance.

Chronic effects: Repeated exposure to Mancozeb at high doses affects the thyroid, liver and nervous systems and causes hind leg paralysis in test animals. The thyroid and liver effects are due to its metabolism in small amounts to ethylenethiourea (ETU). These effects are reversible when exposure is brief or intermittent.

Carcinogenicity: Studies have indicated that ETU has caused thyroid effects and thyroid, pituitary and liver tumours in test animals. Product contains Crystalline Silica, which is listed as an IARC Group 2B - possibly carcinogenic to humans.

Mutagenicity: There is no evidence that mancozeb or ETU has mutagenic potential.

Reproductive effects: No reproductive effects have been indicated below adult toxic levels in two generation reproduction studies with Mancozeb and ETU.

Teratogenicity: There is no evidence that this product has teratogenic potential below adult toxic levels.

12. ECOLOGICAL INFORMATION

Ecotoxicological information: Mancozeb is toxic to fish and aquatic life.

Environmental effects: Do not contaminate domestic or irrigation water supplies, lakes, streams, ponds, or rivers.

13. DISPOSAL CONSIDERATIONS

Container Disposal: Non-refillable container. Do not reuse. Dispose of in a sanitary landfill, or by other procedures approved by provincial and local authorities.

Waste Disposal: Dispose of waste material at an approved (hazardous) waste treatment/disposal facility in accordance with applicable local, provincial and federal regulations. Do not dispose of waste with normal garbage or to sewer systems.

14. TRANSPORT INFORMATION

Canadian TDG classification: Not regulated.

Transportation emergency telephone number: 613-787-5620.

15. REGULATORY INFORMATION

WHMIS classification: This product is registered under the *Pest Control Product Act* and is exempt from the requirements of WHMIS.

16. OTHER INFORMATION

The information contained herein is offered only as a guide to the handling of this specific material and has been prepared in good faith by technically knowledgeable personnel. It is not intended to be all-inclusive and the manner and conditions of use and handling may involve other and additional considerations. No warranty of any kind is given or implied and Norac Concepts Inc. will not be liable for any damages, losses, injuries or consequential damages which may result from the use of or reliance on any information contained herein. This Material Safety Data Sheet is valid for three years.

Prepared by: Norac Concepts Inc.
Technical Department