



## MATERIAL SAFETY DATA SHEET

### SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Buehler Fungicide  
 IDENTIFICATION NUMBER: 49-2540  
 PRODUCT USE/CLASS: Fungicide

SUPPLIER:  
 BUEHLER, a division of Illinois Tool Works Inc.  
 41 WAUKEGAN ROAD  
 LAKE BLUFF, IL 60044

EMERGENCY: 800-424-9300  
 INFORMATION: 847-295-6500  
 PREPARER: Technical Department, 847-295-6500  
 PREPARE DATE: 7/26/2011, 26 July 2011

### SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS

| ITEM | CHEMICAL NAME                | CAS NUMBER     | WT/WT%       |                    |                 |      |
|------|------------------------------|----------------|--------------|--------------------|-----------------|------|
| 01   | zinc dimethyldithiocarbamate | 137-30-4       | 96           |                    |                 |      |
| 02   | inert ingredients            | ---            | 4            |                    |                 |      |
| ITEM | ACGIH TLV-TWA                | ACGIH TLV-STEL | OSHA PEL-TWA | OSHA PEL - CEILING | COMPANY TLV-TWA | SKIN |
| 01   | N.E.                         | N.E.           | N.E.         | N.E.               | N.E.            | NO   |
| 02   | N.E.                         | N.E.           | N.E.         | N.E.               | N.E.            | NO   |

(SEE SECTION 16 FOR ABBREVIATION LEGEND)

### SECTION 3 – HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Harmful to aquatic organisms. Harmful if swallowed. May cause target organ or system damage. Refer to chronic health effects section. Causes eye irritation. May cause skin irritation.

ACUTE EFFECTS – EYE CONTACT: Contact may cause injury to eye tissue if not removed promptly.

ACUTE EFFECTS - SKIN CONTACT: Substance may cause slight skin irritation.

ACUTE EFFECTS – INHALATION: Not expected to present a hazard in normal industrial use (room temperature processing).

ACUTE EFFECTS - INGESTION: Moderately toxic. May cause nausea and vomiting.

CHRONIC OVEREXPOSURE EFFECTS: Pre-existing skin disorders may be aggravated by over-exposure to this product.

OTHER INFORMATION: No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

PRIMARY ROUTE(S) OF ENTRY: KIN CONTACT, EYE CONTACT.

### SECTION 4 – FIRST AID MEASURES

EYE CONTACT: Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.

SKIN CONTACT In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.

INHALATION: Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel

INGESTION: Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

NOTES TO PHYSICIAN: In case of inhalation of decomposition products in a fire, symptoms may be delayed.

The exposed person may need to be kept under medical surveillance for 48 hours.

## SECTION 5 – FIRE FIGHTING MEASURES

FLASH POINT: 200 F (PENSKY-MARTENS C.C.)

LOWER EXPLOSIVE LIMIT: N.A.

UPPER EXPLOSIVE LIMIT: N.A.

AUTOIGNITION TEMPERATURE: No data

EXTINGUISHING MEDIA: ALCOHOL FOAM, CO<sub>2</sub>, DRY CHEMICAL, FOAM, WATER FOG

UNUSUAL FIRE AND EXPLOSION HAZARDS: Does not burn.

SPECIAL FIREFIGHTING PROCEDURES: Wear a NIOSH approved positive pressure self-contained breathing apparatus with full protective clothing. Do not release runoff from fire control methods to sewers or waterways.

As with any dry material, pouring or allowing to free-fall or to be conveyed through chutes or pipes can accumulate and generate electrostatic sparks, potentially causing ignition of the material itself, or of any flammable materials which may come in contact with the material or its container.

## SECTION 6 – ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe dust. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

SMALL SPILL: Move containers from spill area. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal Contractor .

LARGE SPILL: Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labeled waste container. Avoid creating dusty conditions and prevent wind dispersal. Dispose of via a licensed waste disposal contractor.

## SECTION 7 – HANDLING AND STORAGE

**HANDLING:** Put on appropriate personal protective equipment. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not breathe dust. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container

**STORAGE:** Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

## SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

**ENGINEERING CONTROLS:** Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits

**RESPIRATORY PROTECTION:** Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Recommended: Dust respirator

**SKIN PROTECTION:** Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Recommended: Protective gloves should be worn under normal conditions of use

**EYE PROTECTION:** Safety eyewear complying with an approved standard should be used when a riskassessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts. If operating conditions cause high dust concentrations to be produced, use dust goggles. Recommended: safety glasses with side-shields.

**OTHER PROTECTIVE EQUIPMENT:** Accessible eye wash and safety shower.

**HYGIENIC PRACTICES:** Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location

## SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

|  |                  |                   |                              |
|--|------------------|-------------------|------------------------------|
| BOILING RANGE:                         | N.A.             | VAPOR DENSITY:    | Is heavier than air          |
| ODOR:                                  | Faint ammoniacal | ODOR THRESHOLD:   | No data                      |
| APPEARANCE:                            | White to cream   | EVAPORATION RATE: | Is slower than Butyl Acetate |
| SOLUBILITY IN H <sub>2</sub> O:        | Appreciable      |                   |                              |
| FREEZE POINT:                          | No data          | SPECIFIC GRAVITY: | 1.0705                       |
| VAPOR PRESSURE:                        | No data          | pH @ 0.0%:        | N.A.                         |
| PHYSICAL STATE:                        | Powder           | VISCOSITY:        | Low                          |
| COEFFICIENT OF WATER/OIL DISTRIBUTION: | No data          |                   |                              |

(SEE SECTION 16 FOR ABBREVIATION LEGEND)

## SECTION 10 – STABILITY AND REACTIVITY

CONDITIONS TO AVOID: No specific data.

INCOMPATIBILITY: No specific data.

HAZARDOUS DECOMPOSITION PRODUCTS: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

HAZARDOUS POLYMERIZATION: Under normal conditions of storage and use, hazardous polymerization will not occur.

CONDITIONS OF REACTIVITY: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

STABILITY: This product is stable under normal storage conditions.

## SECTION 11 – TOXICOLOGICAL PROPERTIES

### ACUTE TOXICITY

| Product/ingredient name      | Result           | Species      | Dose                       | Exposure     |
|------------------------------|------------------|--------------|----------------------------|--------------|
| zinc dimethyldithiocarbamate | .....LD50 Dermal | ..... Rabbit | ..... >2000 mg/kg          | ..... --     |
|                              | LD50 Oral        | ..... Rat    | ..... 320 mg/kg            | ..... --     |
|                              | LC50 Inhalation  | .. Rat       | ..... 81 mg/m <sup>3</sup> | .....4 hours |

Conclusion/Summary Eye irritation (Rabbit): Irritant, severe ocular lesions produced.

Skin irritation (Rabbit): Slight irritant.

CARCINOGENICITY: Conclusion/Summary: Long term feeding study (2 years) showed no carcinogenic response in rats fed a daily diet of 0.025% ziram. Ziram was carcinogenic to male rats causing an increase in thyroid cancer. Results from female mice are inconclusive due to virus infections during the study period. There is no known human carcinogen association after more than thirty years of application

## SECTION 12 – ECOLOGICAL INFORMATION

### AQUATIC ECOTOXICITY

| Product/ingredient name            | Result                  | Species                                  | Exposure |
|------------------------------------|-------------------------|--|----------|
| zinc dimethyldithiocarbamate ..... | Acute EC50 - 0.048 mg/L | Daphnia                                  | 48 hours |
|                                    | Acute LC50 -            | Fish - Bluegill                          | 96 hours |
|                                    | 0.0097 mg/L Fresh water | Lepomis macrochirus -<br>3.3 cm - 1.01 g |          |
|                                    | Acute LC50 - 1.7 mg/L   | Fish – Trout                             | 96 hours |

Other adverse effects: No known significant effects or critical hazards.

## SECTION 13 – DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any byproducts should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

## SECTION 14 – TRANSPORTATION INFORMATION

DOT PROPER SHIPPING NAME: Pesticides, solid, toxic, n.o.s. (ziram)

DOT TECHNICAL NAME: (ziram)

DOT HAZARD CLASS: 6.1

HAZARD SUBCLASS: N.A.

DOT UN/NA CLASS: 2588

PACKAGING GROUP: II

RESP. GUIDE PAGE:

INTERNATIONAL SHIPPING NAME: Pesticides, solid, toxic, n.o.s. (ziram)

INTERNATIONAL ID NUMBER: N.A.

IMDG CLASS (1°, 2°): 2588

IMDG PAGE NUMBER: II

IMDG EMS: N.A.

IATA CLASS (1°, 2°): N.A.

ADR ITEM NO.: N.A.

ADR TREMCARD: N.A.

SUPPLEMENTAL INFORMATION: No information.

## SECTION 15 – REGULATORY INFORMATION

OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200)

CERCLA – SARA HAZARD CATEGORY: THIS PRODUCT HAS BEEN REVIEWED, AND IS CONSIDERED, UNDER APPLICABLE DEFINITIONS, TO MEET THE FOLLOWING CATEGORIES: IMMEDIATE HEALTH HAZARD CHRONIC HEALTH HAZARD

SARA SECTION 313: THIS PRODUCT CONTAINS THE FOLLOWING SUBSTANCES SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 AND 40 CFR PART 372:

| CHEMICAL NAME -----                | CAS NUMBER ----- | WT/WT % IS LESS THAN |
|------------------------------------|------------------|----------------------|
| zinc dimethyldithiocarbamate ..... | 137-30-4 .....   | 96                   |

TOXIC SUBSTANCE CONTROL ACT: THE CHEMICAL SUBSTANCES IN THIS PRODUCT ARE ON THE TSCA SECTION 8 INVENTORY. THIS PRODUCT CONTAINS THE FOLLOWING CHEMICAL SUBSTANCES SUBJECT TO THE REPORTING REQUIREMENTS OF TSCA 12(B) IF EXPORTED FROM THE UNITED STATES:

| CHEMICAL NAME -----                | CAS NUMBER |
|------------------------------------|------------|
| zinc dimethyldithiocarbamate ..... | 137-30-4   |

NEW JERSEY RIGHT-TO-KNOW: THE FOLLOWING MATERIALS ARE NON-HAZARDOUS, BUT ARE AMONG THE TOP 5 COMPONENTS IN THIS PRODUCT:

| CHEMICAL NAME -----                | CAS NUMBER |
|------------------------------------|------------|
| zinc dimethyldithiocarbamate ..... | 137-30-4   |

PENNSYLVANIA RIGHT-TO-KNOW: THE FOLLOWING NON-HAZARDOUS INGREDIENTS ARE PRESENT IN THE PRODUCT AT GREATER THAN 3%:

| CHEMICAL NAME -----                | CAS NUMBER |
|------------------------------------|------------|
| zinc dimethyldithiocarbamate ..... | 137-30-4   |

CALIFORNIA PROPOSTION 65: zinc dimethyldithiocarbamate 137-30-4

CANADIAN WHMIS: THIS MSDS HAS BEEN PREPARED IN COMPLIANCE WITH CONTROLLED PRODUCT REGULATIONS EXCEPT FOR USE OF THE 16 HEADINGS.

CANADIAN WHMIS CLASS: D2B

COMPONENT RCRA CLASSIFICATIONS: Toxic

COMPONENT RCRA CODES: U238

CERCLA RQ VALUE (MINIMUM): 100 lbs

## SECTION 16 – OTHER INFORMATION

### HMIS RATINGS

HEALTH: 4

FLAMMABILITY: 1

REACTIVITY: 0

PREVIOUS MSDS REVISION DATE: 3/23/2009, 23 March 2009

REASON FOR REVISION: Administrative change for new format. Revised section(s): 2,3, 4, 6, 7, 8, 11, 12, 13

VOLATILE ORGANIC COMPOUNDS: 0 grams/ltr

### LEGEND:

N.A. – NO INFORMATION

N.E. – NOT ESTABLISHED

N.D. – NOT DETERMINED

ABBREVIATIONS: ACGIH = AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS; OSHA = OCCUPATIONAL HEALTH AND SAFETY ADMINISTRATION; TLV-TWA = THRESHOLD LIMIT VALUE – TIME WEIGHTED AVERAGE (8 HOURS); STEL = SHORT-TERM EXPOSURE LIMIT (15 MINUTES); C = CEILING VALUE; PEL = PERMISSIBLE EXPOSURE LIMIT

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