



# Bonide Mancozeb Flowable with Zinc Concentrate

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1. Product identifier

Product name : Bonide Mancozeb Flowable with Zinc Concentrate  
Product code : 627193964

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Fungicide

#### 1.3. Details of the supplier of the safety data sheet

Bonide Products, Inc.  
6301 Sutliff Road  
Oriskany, NY 13424  
T (315) 736-8231  
[www.bonide.com](http://www.bonide.com)

#### 1.4. Emergency telephone number

Emergency number : CHEMTREC - 1 (800) 424-9300 and/or 1 (703) 527-3887

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

##### Classification (GHS-US)

Skin Sens. 1 H317

#### 2.2. Label elements

##### GHS-US labeling

Hazard pictograms (GHS-US) :



GHS07

Signal word (GHS-US) : Warning  
Hazard statements (GHS-US) : H317 - May cause an allergic skin reaction  
Precautionary statements (GHS-US) : P261 - Avoid breathing mist  
P272 - Contaminated work clothing should not be allowed out of the workplace  
P280 - Wear protective gloves and eye protection  
P302+P352 - IF ON SKIN: Wash with plenty of soap and water  
P321 - Specific treatment (see first aid on this label)  
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention  
P362+P364 - Take off contaminated clothing and wash it before reuse  
P501 - Dispose of contents/container to in accordance with local/national regulations

#### 2.3. Other hazards

No additional information available

#### 2.4. Unknown acute toxicity (GHS-US)

No data available

### SECTION 3: Composition/information on ingredients

#### Mixture

| Name                            | Product identifier | %  | Classification (GHS-US)                     |
|---------------------------------|--------------------|----|---|
| Mancozeb                        | (CAS No) 8018-01-7 | 37 | Skin Sens. 1, H317<br>Aquatic Acute 1, H400 |
| <b>Balance Total including:</b> |                    | 63 |   |
| Calcium Lignosulfonate          | (CAS No) 8061-52-7 |    | Not classified                              |
| Ethylene Thiourea               | (CAS No) 96-45-7   |    | Acute Tox. 4 (Oral), H302                   |
| Hexamethylene Tetramine         | (CAS No) 100-97-0  |    | Flam. Sol. 2, H228<br>Skin Sens. 1, H317    |

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### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
- First-aid measures after inhalation : Assure fresh air breathing. Allow the person to rest.
- First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. Wash with plenty of soap and water. Get medical advice/attention. Wash contaminated clothing before reuse. If irritation occurs and persists see a doctor.
- First-aid measures after eye contact : Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist.
- First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

#### 4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries after inhalation : May cause an allergic skin reaction.

#### 4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

- Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.
- Unsuitable extinguishing media : Do not use a heavy water stream.

#### 5.2. Special hazards arising from the substance or mixture

No additional information available

#### 5.3. Advice for firefighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Avoid (reject) fire-fighting water to enter environment.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

##### 6.1.1. For non-emergency personnel

- Emergency procedures : Evacuate unnecessary personnel.

##### 6.1.2. For emergency responders

- Protective equipment : Equip cleanup crew with proper protection.
- Emergency procedures : Ventilate area.

#### 6.2. Environmental precautions

Prevent entry to sewers and public waters.

#### 6.3. Methods and material for containment and cleaning up

- Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

#### 6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

- Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eat, drink or smoke and when leaving work. Provide good ventilation in process area to prevent formation of vapor.
- Hygiene measures : Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse.

#### 7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Store in original container. Keep container closed when not in use.
- Incompatible products : Strong bases. Strong acids.
- Incompatible materials : Sources of ignition.

#### 7.3. Specific end use(s)

No additional information available

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### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

No additional information available

#### 8.2. Exposure controls

|                               |   |
|-------------------------------|---|
| Personal protective equipment | : Avoid all unnecessary exposure.         |
| Hand protection               | : Wear protective gloves.                 |
| Eye protection                | : Chemical goggles or safety glasses.     |
| Respiratory protection        | : Wear approved mask.                     |
| Other information             | : When using, do not eat, drink or smoke. |

### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

|   |                           |
|---|---------------------------|
| Physical state                              | : Liquid                  |
| Appearance                                  | : Yellowish thick liquid. |
| Color                                       | : Yellow.                 |
| Odor  | : Sulfur like.            |
| Odor threshold                              | : No data available       |
| pH  | : 5 - 7                   |
| Relative evaporation rate (butyl acetate=1) | : No data available       |
| Melting point                               | : 0 °C                    |
| Freezing point                              | : No data available       |
| Boiling point                               | : 212 °F                  |
| Flash point                                 | : No data available       |
| Self ignition temperature                   | : No data available       |
| Decomposition temperature                   | : No data available       |
| Flammability (solid, gas)                   | : No data available       |
| Vapor pressure                              | : No data available       |
| Relative vapor density at 20 °C             | : No data available       |
| Relative density                            | : 1.3 - 1.4               |
| Solubility                                  | : No data available       |
| Log Pow                                     | : No data available       |
| Log Kow                                     | : No data available       |
| Viscosity, kinematic                        | : No data available       |
| Viscosity, dynamic                          | : No data available       |
| Explosive properties                        | : No data available       |
| Oxidizing properties                        | : No data available       |
| Explosive limits                            | : No data available       |

#### 9.2. Other information

No additional information available

### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

No additional information available

#### 10.2. Chemical stability

Stable under normal conditions.

#### 10.3. Possibility of hazardous reactions

Not established.

#### 10.4. Conditions to avoid

Extremely high or low temperatures.

#### 10.5. Incompatible materials

Strong acids. Strong bases.

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### 10.6. Hazardous decomposition products

Carbon monoxide. Carbon dioxide.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Not classified

| Mancozeb (8018-01-7) |                     |
|----------------------|---------------------|
| LD50 oral rat        | 5000 mg/kg (Rat)    |
| LD50 dermal rat      | 10000 mg/kg (Rat)   |
| LD50 dermal rabbit   | 5000 mg/kg (Rabbit) |

| Ethylene Thiourea (96-45-7) |                  |
|-----------------------------|------------------|
| LD50 oral rat               | 1832 mg/kg (Rat) |

| Hexamethylen Tetramine (100-97-0) |                    |
|-----------------------------------|--------------------|
| LD50 oral rat                     | > 5000 mg/kg (Rat) |

Skin corrosion/irritation : Not classified  
pH: 5 - 7

Serious eye damage/irritation : Not classified  
pH: 5 - 7

Respiratory or skin sensitization : May cause an allergic skin reaction.

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

| Ethylene Thiourea (96-45-7) |                      |
|-----------------------------|----------------------|
| IARC group                  | 3 - Not Classifiable |

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

Potential Adverse human health effects and symptoms : Based on available data, the classification criteria are not met.

Symptoms/injuries after inhalation : May cause an allergic skin reaction.

## SECTION 12: Ecological information

### 12.1. Toxicity

| Mancozeb (8018-01-7)    |  |
|-------------------------|--|
| LC50 fish 1             | 0.074 mg/l (96 h; Salmo gairdneri (Oncorhynchus mykiss); Measured concentration) |
| EC50 Daphnia 1          | 0.073 mg/l (48 h; Daphnia magna; Measured concentration)                         |
| Threshold limit algae 1 | 0.044 mg/l (120 h; Selenastrum capricornutum)                                    |

| Ethylene Thiourea (96-45-7) |   |
|-----------------------------|---|
| LC50 fish 1                 | > 1000 mg/l (48 h; Oryzias latipes)           |
| EC50 Daphnia 1              | 26.4 mg/l (48 h; Daphnia magna)               |
| LC50 fish 2                 | 7500 mg/l (96 h; Poecilia reticulata)         |
| Threshold limit algae 1     | 6600 mg/l (96 h; Chlorella sp.; Reproduction) |

| Hexamethylen Tetramine (100-97-0) |   |
|-----------------------------------|---|
| LC50 fish 1                       | 49800 mg/l (96 h; Pimephales promelas; Measured concentration)  |
| EC50 Daphnia 1                    | 36000 mg/l (48 h; Daphnia magna)                                |
| EC50 other aquatic organisms 1    | 3 g/l (336 h; Selenastrum capricornutum; Growth rate)           |
| LC50 fish 2                       | 49000 mg/l (96 h; Cyprinodon variegatus; Nominal concentration) |
| EC50 Daphnia 2                    | 92.500 mg/l (96 h; Crustacea)                                   |
| Threshold limit algae 1           | 1500 mg/l (336 h; Selenastrum capricornutum)                    |

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### 12.2. Persistence and degradability

| Bonide Mancozeb Flowable with Zinc Concentrate |  |
|--|--|
| Persistence and degradability                  | Not established.   |
| Mancozeb (8018-01-7)                           |  |
| Persistence and degradability                  | Hydrolysis in water. Biodegradable in the soil. No inhibition of biodegradation process in the soil. |
| Ethylene Thiourea (96-45-7)                    |  |
| Persistence and degradability                  | Not readily biodegradable in water. Biodegradable in the soil.                                       |
| Hexamethylen Tetramine (100-97-0)              |  |
| Persistence and degradability                  | Hydrolysis in water.   |
| Biochemical oxygen demand (BOD)                | 0.026 g O <sub>2</sub> /g substance  |
| ThOD   | 1.37 g O <sub>2</sub> /g substance (NH <sub>3</sub> )  |
| BOD (% of ThOD)                                | 0.01897 % ThOD   |

### 12.3. Bioaccumulative potential

| Bonide Mancozeb Flowable with Zinc Concentrate |  |
|--|--|
| Bioaccumulative potential                      | Not established.                                 |
| Mancozeb (8018-01-7)                           |  |
| Log Pow  | 1.33 (Experimental value)                        |
| Bioaccumulative potential                      | Low potential for bioaccumulation (Log Kow < 4). |
| Ethylene Thiourea (96-45-7)                    |  |
| BCF fish 1                                     | < 0.2 (Cyprinus carpio; Test duration: 6 weeks)  |
| BCF fish 2                                     | < 1.8 (Cyprinus carpio; Test duration: 6 weeks)  |
| Log Pow  | -0.66  |
| Bioaccumulative potential                      | Bioaccumulation: not applicable.                 |
| Hexamethylen Tetramine (100-97-0)              |  |
| Log Pow  | -4.15 - -2.13                                    |
| Bioaccumulative potential                      | Bioaccumulation: not applicable.                 |

### 12.4. Mobility in soil

No additional information available

### 12.5. Other adverse effects

Other information : Avoid release to the environment.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.  
Ecology - waste materials : Avoid release to the environment.

## SECTION 14: Transport information

In accordance with DOT  
No dangerous good in sense of transport regulations

### Additional information

Other information : No supplementary information available.

## SECTION 15: Regulatory information

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

### CAUTION

Harmful If Inhaled, Swallowed Or Absorbed Through The Skin. Causes Moderate Eye Irritation. Avoid contact with skin, eyes or clothing. Avoid breathing spray mist.

### 15.1. US Federal regulations

No additional information available

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### 15.2. International regulations

No additional information available

### 15.3. US State regulations

No additional information available

## SECTION 16: Other information

Other information : None.

Full text of H-phrases: see section 16:

|                     |  |
|---------------------|--|
| Acute Tox. 4 (Oral) | Acute toxicity (oral) Category 4                               |
| Aquatic Acute 1     | Hazardous to the aquatic environment - Acute Hazard Category 1 |
| Flam. Sol. 2        | Flammable solids Category 2                                    |
| Skin Sens. 1        | Skin sensitization Category 1                                  |
| H228                | Flammable solid  |
| H302                | Harmful if swallowed   |
| H317                | May cause an allergic skin reaction                            |
| H400                | Very toxic to aquatic life                                     |

SDS US (GHS HazCom 2012) - Pesticides

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*