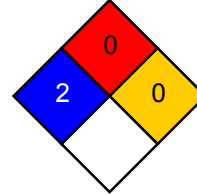


MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: FORTUNA™ 75 WDG FUNGICIDE
GENERAL USE: Agricultural Fungicide
PRODUCT DESCRIPTION: Light green granules
EPA Registration Number: 89333-1
MSDS No.: 1
MSDS Revision Date: Dec. 12, 2012



MANUFACTURER: Agria SA
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EMERGENCY TELEPHONE
NUMBERS:
CHEMTREC: 1-800-424-9300

2. COMPOSITION/INFORMATION ON INGREDIENTS

| COMPONENT | Typical % | CAS No. |
|---------------------------------------|-----------|-----------|
| Mancozeb | 75% | 8018-01-7 |
| Lignosulfonate dispersants | 12 - 17 % | 8061-51-6 |
| Ethylene thiourea | < 0.061% | 96-45-7 |
| Other Non-hazardous Inert Ingredients | < 10% | |

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

Fortuna 75 WDG Fungicide is a granular product that is not flammable, combustible, or explosive and has low acute oral and dermal toxicity. Mancozeb may cause sensitization in some individuals after prolonged or repeated exposure.

POTENTIAL HEALTH EFFECTS

ROUTE(S) OF EXPOSURE: Dermal exposure is not usually a concern because mancozeb is poorly absorbed through intact skin. Inhalation or ingestion is unlikely to occur in occupational use.

Eye contact: Fortuna WDG causes slight and reversible irritation to the eyes.

Skin contact: Fortuna WDG causes slight and reversible irritation to intact skin.

Ingestion: Products containing mancozeb are **not** intended for ingestion. Fortuna WDG has a low acute toxicity. Small amounts (e.g., a tablespoon) swallowed accidentally are not likely to cause effects; swallowing amounts larger than that may cause gastrointestinal symptoms.

Cancer: Ethylene thiourea (ETU), a trace contaminant, is listed as a "probable human carcinogen" by US EPA, and mancozeb and ETU are listed by the State of California as carcinogenic (Proposition 65). ETU is listed by California as having the potential to cause reproductive harm.

See Section 11 for additional toxicological information.

4. FIRST AID MEASURES

IF SWALLOWED:

- Call poison control center or doctor immediately for treatment advice.
- Have person sip a glass of water if able to swallow.

- Do not induce vomiting unless told to do so by the poison control center or doctor.
Do not give anything by mouth to an unconscious person

IF INHALED:

- Move person to fresh air.
- If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible.

Call a poison control center or doctor for further treatment advice.

IF IN EYES:

- Hold eye open and rinse slowly and gently with water or 15 to 20 minutes.
- Remove contact lenses, if present, after the first minutes, then continue rinsing eye.

Call a poison control center or doctor for treatment advice.

IF ON SKIN OR CLOTHING:

- Take off contaminated clothing.
- Rinse skin immediately with plenty of water for 15 to 20 minutes.

Call a poison control center or doctor for treatment advice.

5. FIRE FIGHTING MEASURES

GENERAL HAZARD: None, because Fortuna WDG is not flammable, combustible or explosive.

FLAMMABILITY CLASSIFICATION (29 CFR 1910.1200): Non-flammable solid.

HAZARDOUS COMBUSTION PRODUCTS: carbon disulfide, ethylene thiourea

EXTINGUISHING MEDIA: Any fire extinguishing media (water, foam, dry chemical, CO₂) may be used on nearby fires.

6. ACCIDENTAL RELEASE MEASURES

LAND SPILL:

Large spill: Dyke around spill as necessary. If wet, absorb product with a clay-based absorbent. Remove dry product, absorbent and contaminated soil for disposal in accordance with applicable local regulations.

Small spill: Remove contaminated soil and place in containers for disposal in accordance with applicable local regulations.

Avoid contamination of water bodies during cleanup and disposal. Personal protective equipment is **not** needed to cleanup land spills.

SPILLAGE ONTO HARD SURFACES: Limit area of spillage by barricading if necessary. Sweep up or vacuum, and place product into containers for disposal in accordance with applicable local regulations. Clean surface with water. [NOTE: Wood surfaces will not be harmed nor present a future hazard after rinsing and drying.]

SPILLAGE INTO WATER: Where possible, remove any intact containers from the water. Advise local water authority that none of the affected water should be used for irrigation or for the abstraction of potable water until natural dilution returns the mancozeb value to a negligible level.

7. HANDLING AND STORAGE

HANDLING: Fortuna 75 WDG is a stable product. No special handling precautions are required. Observe label directions.

STORAGE: No special storage conditions are required. Keep out of reach of children.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Enclosed Cockpits: Pilots must use an enclosed cockpit that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d) (4-6)].

Mechanical Flagging Engineering Controls: Human flagging is prohibited. Flagging to support aerial application is limited to use of the Global Positioning System (GPS) or mechanical flaggers.

PERSONAL PROTECTION: Mixers, loaders, applicators and other handlers must wear:

- long-sleeved shirt
- long pants
- shoes and socks
- chemical-resistant gloves made of any waterproof material.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|--------------------------------|---|
| Physical State: | Solid (granular) |
| Appearance: | Greenish granules |
| Odor: | Musky / rotten egg |
| Bulk Density: | 36 - 38 lb per cubic foot |
| Vapor Pressure (mm/Hg): | Negligible @ 20°C |
| Solubility in Water: | dispersible in water, negligible dissolution in water |
| Melting Point: | Not applicable |
| pH @ 20°C: | not soluble in water |

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY (Conditions to avoid): Stable

INCOMPATIBILITY: Strong acids, strong oxidizing agents, water, quaternary ammonium salts, EBDC sequestering agents

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon disulfide, ethylene thiourea

HAZARDOUS POLYMERIZATION: Will not occur

11. TOXICOLOGICAL INFORMATION

The following information is available for the formulation:

| | | |
|-----------------------|---|------------------------------|
| INGESTION: | Oral LD ₅₀ (rat) | >5000 mg/kg |
| DERMAL: | Dermal LD ₅₀ (rat) | >2000 mg/kg |
| INHALATION: | Inhalation LC50 (rat) | 5.3 - 7.38 mg / L |
| SENSITIZATION: | Skin sensitization (guinea pig) | weak sensitizer |
| IRRITATION: | Primary eye irritation (rat) Primary skin irritation (rat) | slight reversible irritation |

CARCINOGENICITY: ETU, a potential microcontaminant is considered to be a probable human carcinogen by EPA, IARC, and NTP. The State of California (Proposition 65) has listed mancozeb and ETU as carcinogenic.

12. ECOLOGICAL INFORMATION

ECOTOXICITY DATA

General: Mancozeb is minimally toxic to mammals, birds, and aquatic organisms.

Environmental fate: Mancozeb has minimal solubility in water, is not expected to bioconcentrate in aquatic organisms, is rapidly degraded in soil (DT50 1 -20 days), and is slightly mobile in soil.

13. DISPOSAL CONSIDERATIONS

DISPOSAL: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. Consult state and local authorities for disposal guidelines.

14. TRANSPORTATION INFORMATION

DOT Class (USA) : Not regulated in USA (49 CFR)
UN :UN3077 Environmentally hazardous substance, solid, nos (mancozeb). Hazard class 9. PG III

PACKAGING

General description : Paper bag or HDPE drum

15. REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS: This product is registered with the EPA (EPA Reg. No. 89333-1) in accordance with Section 3 of FIFRA, as a pesticide product.

OSHA/Cal OSHA: This MSDS document meets the requirements of both OSHA (29 CFR 1910.1200 and Cal OSHA (Title 8 CCR 5194 (g)) hazard communication standards. Refer to Sections 2 and 8 for regulatory exposure limits.

CHEMICAL INVENTORY LISTING: Mancozeb appears on several chemical inventory lists (including the EPA TSCA inventory, Canadian DSL, European EINECS, Japanese MITI, Australian and Korean lists) under the CAS No. 8018-01-7

SARA TITLE III DATA

Sections 311 & 312 Hazard Categories:

| | |
|---------------------------------|-----|
| Immediate Health Hazard: | yes |
| Delayed Health Hazard: | yes |
| Fire Hazard: | No |
| Reactive Hazard: | No |
| Sudden Pressure Release Hazard: | No |

Section 302 Extremely Hazardous Substances: None

Section 313 Toxic Chemicals:

Ethylene thiourea CAS 96-45-7 <0.1%
mancozeb CAS 8018-01-7 75%

CERCLA/EHS Reportable Quantities (RQ):

| | | |
|-------------------------------|----------------|-------------------------|
| Ethylene thiourea CAS 96-45-7 | RQ 10 lb | Amount in product <0.1% |
| mancozeb CAS 8018-01-7 | 75% RQ 5000 lb | Amount in product <75 % |

RCRA Category: US EPA Hazardous Waste Number U114 (ethylenebisdithiocarbamic acid)

STATE REGULATIONS:

CALIFORNIA (Proposition 65): This product contains trace levels of of a component known to the State of California to cause cancer, birth defects, or reproductive harm: ethylene thiourea CAS 96-45-7). This product contains a substance known to the State of California to cause cancer, mancozeb (CAS 8018-01-7

16. OTHER INFORMATION

MSDS Status:

Date of this Revision: Feb. 26, 2013

Date of Previous Revision: Dec. 12, 2012

Person Responsible for Preparation: Don O'Shaughnessy, Ph.D., DABT, President DOC Inc.

Reasons for Revision: Address correction

DISCLAIMER:

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ABBREVIATIONS:

| | | |
|--------|---|---|
| a.i. | - | Active ingredient |
| ACGIH | - | American Conference of Governmental Industrial Hygienists |
| CERCLA | - | Comprehensive Environmental Response, Compensation, and Liability Act |
| EPA | - | Environmental Protection Agency |
| FIFRA | - | Federal Insecticide, Fungicide, and Rodenticide Act |
| IARC | - | International Agency for Research on Cancer |
| NTP | - | National Toxicology Program |
| SARA | - | Superfund Amendments and Reauthorization Act |
| TSCA | - | Toxic Substances Control Act |
| DOT | - | Department of Transportation |
| IMDG | - | International Maritime Dangerous Goods |
| IATA | - | International Air Transport Association |

This is the last page of this MSDS. There should be 5 pages.