

Material Safety Data Sheet



Transportation and Medical Emergency Phone: **1-800-535-5053 (INFOTRAC)**

General Phone: 317-580-8282

EPA Reg. Number: 67690-35

Creation Date: 10/13/2005

Revision Date: 03/01/2006

Junction* Fungicide/Bactericide

SePRO Corporation Carmel, IN 46032

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT: Junction* Fungicide/Bactericide

COMPANY IDENTIFICATION:

SePRO Corporation

11550 North Meridian Street, Suite 600

Carmel, IN 46032

www.sepro.com

Information Phone: 317-580-8282 (Monday - Friday, 8:00 am to 5:00 pm EST)

2. HAZARDOUS IDENTIFICATIONS

EMERGENCY OVERVIEW

Dark green granule. Odor not determined.

- Corrosive. Do not get in eyes or on clothing.
- Causes irreversible eye damage.
- Harmful if swallowed or inhaled.
- Avoid inhaling dust or spray mist.
- Prolonged and repeated dermal contact may cause allergic reactions in some individuals.

EMERGENCY PHONE NUMBER: 800-535-5053

3. COMPOSITION / INFORMATION ON INGREDIENTS

Mancozeb†	CAS# 8018-01-7	15.0%
Copper Hydroxide	CAS# 20427-59-2	46.1%
(Metallic Copper Equivalent – 30%)		
Inert Ingredients		38.9%

†Mancozeb, a coordination product of zinc ion and manganese ethylenedisithiocarbamate in which the ingredients are:

• Manganese	3.0%
• Zinc	0.4%
• Ethylenedisithiocarbamate ion	11.6%

4. FIRST AID MEASURES

EYES: Hold eyes open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes. Call a poison control center or doctor for treatment advice.

INHALATION: Move person to fresh air. If person is not breathing, call 911 or ambulance, then give artificial respiration, preferably by mouth to mouth. Call a poison control center or doctor for further treatment advice.

INGESTION: Call a 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. Never give anything by mouth to an unconscious person.

SKIN OR CLOTHING: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

NOTE TO PHYSICIAN: Probably mucosal damage may contraindicate use of gastric lavage.

5. FIRE FIGHTING MEASURES

FLASH POINT: Not determined

METHOD USED: Not determined

FLAMMABLE LIMITS:

LFL: Not determined

UFL: Not determined

AUTO-IGNITION TEMPERATURE: Not determined

EXTINGUISHING MEDIA: Use dry chemical, carbon dioxide, or foam.

FIRE AND EXPLOSION HAZARDS: Negligible fire hazard when exposed to heat or flame. Prevent human exposure to fire, smoke, fumes or products of combustion.

FIREFIGHTING EQUIPMENT: Wear self-contained breathing apparatus and full protective clothing.

FIREFIGHTING INSTRUCTIONS: Use standard organic chemical fire fighting techniques in extinguishing fires involving this material.

HAZARDOUS COMBUSTION PRODUCTS: Not determined

6. ACCIDENTAL RELEASE MEASURES

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

ACTION TO TAKE FOR SPILLS AND LEAKS:

Land Spills: Prevent runoff. Contain and sweep up small spills. Dispose of as waste in a suitable (fiberboard) containers.

Water Spills: If feasible, copper may be precipitated / ultra filtrated with caustics or other chemicals and resulting sludge disposed of in a chemical landfill.

Report large spills to INFOTRAC and consult SePRO Corporation for assistance.

7. HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

HANDLING (Personnel): Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing

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immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

STORAGE: Store in a clean, dry area. Do not store near feed or food.

Keep out of reach of children.

8. EXPOSURE CONTROL/PERSONAL PROTECTION

These precautions are suggested for conditions where the potential for exposure exists. Emergency conditions may require additional precautions.

EXPOSURE GUIDELINES:

	OSHA (PEL)	ACGIH (TLV)	AEL*
Copper hydroxide	1 mg/m ³ , dusts and mists, as CU, 8 Hr. TWA	1 mg/m ³ , dusts and mists, as CU, 8 Hr. TWA	1.5 mg/m ³ , 8 & 12 Hr. TWA (approximately 1 mg/m ³ , as Cu.)
Mancozeb	Not Established	Not Established	1 mg/m ³ , 8 Hr. TWA, SEN

*AEL is manufacturer's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

PERSONAL PROTECTIVE EQUIPMENT (PPE): Some of the materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for category A on an EPA chemical-resistant category selection chart.

Applicators and other handlers must wear:

- Coveralls over long-sleeved shirt and long pants.
- Chemical-resistant apron during mixing and loading.
- Chemical-resistant gloves made of any waterproof material.
- Shoes plus socks.
- Protective eyewear.

Discard clothing and other absorbent materials that have been heavily contaminated with this product's concentrate.

Follow manufacturer's instructions for cleaning / maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water is:

- Coveralls over long-sleeved shirt and long pants.
- Chemical-resistant gloves made of any waterproof material.
- Shoes plus socks.
- Protective eyewear.

9. PHYSICAL AND CHEMICAL PROPERTIES

COLOR: Dark Green

PHYSICAL STATE: Granule

ODOR: Not determined

VAPOR PRESSURE: Negligible

DENSITY: 0.5485 g/mL

SOLUBILITY IN WATER: Technical copper hydroxide has a solubility of 0.1 – 5 ppm

pH: 9.63

BOILING POINT: Not determined

MELTING POINT: Not determined

10. STABILITY AND REACTIVITY

STABILITY: Stable under normal storage conditions.

INCOMPATIBILITY (Specific materials/conditions to avoid): Not determined.

HAZARDOUS DECOMPOSITION PRODUCTS: Not determined.

HAZARDOUS POLYMERIZATION: Material not known to polymerize.

11. TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS: This section includes possible adverse effects, which could occur if this material is not handled in the recommended manner.

EYES: Eye contact with this product may cause severe irritation with tearing, pain or blurred vision, eye corrosion or ulceration; blindness may result. Severely irritating to corrosive to the eyes of a rabbit.

SKIN: Skin contact with this product may cause slight irritation with itching, redness, or swelling. Not a skin irritant or skin sensitizer. Dermal LD₅₀ > 5,000 mg/kg in rabbits.

INGESTION: Ingestion of this product may cause nonspecific discomfort, such as nausea or weakness, central nervous system depression which if severe enough, may lead to death. Repeated oral ingestion of copper hydroxide via gavage produced reduced body weight and food consumption at 15 mg/kg/day and mortality at 30 mg/kg/day in rabbits. Oral LD₅₀ = 2,535 mg/kg in rats.

INHALATION: Inhalation of this product may be irritating to the respiratory system. Excessive exposure may cause cough, mucous production, shortness of breath, reflecting metal fume fever. The effects in animals from repeated high inhalation doses of mancozeb (dust) equivalent to 150-250 times the AEL include reduced body weight, inflammation of the lungs, and abnormal thyroid function. Inhalation 4 hour LC₅₀ > 1.266 mg/L in rats.

SUBCHRONIC: Repeated ingestion of this product for 28 days produced no adverse effects in rats at 1000 mg/kg.

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CHRONIC: Increased incidences of thyroid tumors and ocular lesions (retinopathy) were observed in rats administered 750 ppm (equivalent to approximately 35 mg/kg/day) of mancozeb in their diet for two (2) years.

SYSTEMIC (OTHER TARGET ORGAN EFFECTS): Toxic effects in animals from repeated ingestion of high doses of mancozeb include reduced body weight and thyroid effects. In a different study, repeated dosing caused toxic and neuropathological effects in male and female rats which included compounded-related mortality, decreased body weight, impaired hind limb motor activity and histopathological evidence of nerve damage. The no-observable-effect level was 125 ppm.

Mancozeb is in the ethylenebisdithiocarbamate (EBDC) class of fungicides. EBDCs, including mancozeb, which are metabolized to ethylene thiourea (ETU), have produced thyroid tumors in animal studies.

MUTAGENICITY: Mancozeb does not produce genetic damage in bacterial or most mammalian cell culture systems. It has been reported to produce genetic damage in some, but not all, animal tests. It has not been tested adequately for heritable genetic damage.

TERATOLOGY (BIRTH DEFECTS): Tests in some animals indicate that mancozeb may produce embryo and fetal toxicity, but only at maternally toxic doses. Animal data show developmental effects only at exposure levels producing other toxic effect in the adult animal.

REPRODUCTIVE EFFECTS: Multi-generation studies in animals demonstrate no reproductive toxicity.

CARCINOGENICITY: None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSH or ACGIH as a carcinogen. Mancozeb is considered to show weak carcinogenic activity.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL FATE:

EC₅₀ (respiration rate) – activated sludge: 71 mg/L

ECOTOXICOLOGY INFORMATION:

Mancozeb:

Test Type	Species	Value
Aquatic LC ₅₀ (96 hr)	Rainbow Trout	0.073 mg/L
Aquatic LC ₅₀ (96 hr)	Fathead Minnow	0.57 mg/L
Aquatic LC ₅₀ (96 hr)	Bluegill sunfish	0.84 mg/L
Aquatic EC ₅₀ (72 hr) growth inhibition	Freshwater algae	0.43 mg/L

Copper Hydroxide

Test Type	Species	Value
Aquatic EC ₅₀ (48 hr)	Daphnia magna	70.16 ug/L
Avian LC ₅₀ (8 day)	Bobwhite Quail	3400 ppm
Avian LC ₅₀ (8 day)	Mallard Duck	>5,000 ppm
LD ₅₀ (48 hr)	Honeybee	68.3 ug/bee

13. DISPOSAL CONSIDERATIONS

Do not contaminate water, food, or feed by disposal.

PESTICIDE DISPOSAL: Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

ENVIRONMENTAL HAZARDS: This pesticide is toxic to fish and aquatic organisms. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Drift and runoff from treated areas may be hazardous to fish and aquatic organisms in adjacent aquatic sites. Do not allow rinsate from cleaning of equipment or disposed material to enter surface or groundwater.

CONTAINER DISPOSAL:

Paper and Plastic Bags: Completely empty bag into application equipment. Then dispose of empty bag in sanitary landfill, or by incineration, or if allowed by State and local authorities, by burning. If burned, stay out of smoke.

Plastic Containers: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or if allowed by state and local authorities, by burning. If burned, stay out of smoke.

14. TRANSPORT INFORMATION

Department of Transportation (DOT) Not Regulated unless shipped in bulk package or by water.†

International Air Transport Association (IATA) Not Regulated if less than 5,000 pounds mancozeb per package.†

International Maritime Organization (IMO) Regulated.†

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*Note: If regulated,

Proper Shipping Name	Environmentally Hazardous Substance, Solid, n.o.s., (Mancozeb 15%)
Class	9
Identification No.	UN 3077
Packing Group	III
Marine Pollutant	Yes
Reportable Quantity	Yes – add RQ if 5,000 or more pounds mancozeb in a single package.

For additional shipping information contact SePRO Corporation at 317-580-8282 and speak with the Logistics Manager.

15. REGULATORY INFORMATION

NOTICE: The information herein is presented in good faith and believed to be accurate as of the effective date shown above. However, no warranty, expressed or implied, is given. Regulatory requirements are subject to change and may differ from one location to another; it is the buyer's responsibility to ensure that its activities comply with federal, state or provincial, and local laws. The following specific information is made for the purpose of complying with numerous federal, state or provincial, and local laws and regulations.

U.S. REGULATIONS

SARA TITLE III, SECTION 313: This product contains the following substance(s) subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

CHEMICAL NAME	CAS NO.	CONCENTRATION
Metallic copper† (*from Copper hydroxide)	7440-50-8	30.0%

SARA HAZARD CATEGORY: This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendments and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

- An Immediate Health Hazard

CALIFORNIA PROPOSITION 65: This product contains mancozeb and ethylene thiourea (ETU), chemicals known to the State of California to cause cancer in laboratory animals. ETU is also known to the State of California to cause birth defects or other reproductive harm in laboratory animals.

TOXIC SUBSTANCES CONTROL ACT (TSCA): All ingredients are on the TSCA inventory or are not required to be listed on the TSCA inventory.

STATE RIGHT-TO-KNOW: The following product component(s) are cited on the hazardous substance list(s) in the states indicated below.

Chemical Name

Metallic copper†
(*from Copper hydroxide)

CAS Number

7440-50-8

- New Jersey – listed as copper on the New Jersey Environmental Hazardous Substances list (NJ Department of Environmental Protection, Title 7 New Jersey Administrative Code (NJAC) Chapter 1G.
- Massachusetts – listed as copper and copper-based pesticide, solid, toxic.
- Pennsylvania – listed as copper fume or dust as an environmental hazard.

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA 701) and HAZARDOUS MATERIALS IDENTIFICATION SYSTEM (HMIS): (4=Extreme; 3=High; 2=Moderate; 0=Insignificant)

Category	Rating
Health	2
Flammability	1
Reactivity	0

OSHA HAZARD COMMUNICATION STANDARD: This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard (29 CFR §1910.1200).

COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY ACT

(CERCLA, OR SUPERFUND): Releases of a component of this material (metallic copper) to air, land, or water are reportable to the National Response Center under CERCLA or to state and local emergency planning committees under the Superfund Amendments and Reauthorization Act (SARA) Title III Section 304.

RESOURCE CONSERVATION AND RECOVERY ACT (RCRA):

When a decision is made to discard this material as supplied, it does not meet RCRA's characteristic definition of ignitability, corrosivity or reactivity and is not listed in 40 CFR §261.33.

16. OTHER INFORMATION, USES AND RESTRICTIONS

MSDS STATUS: New – 10/13/05
Revised – 03/01/06: All Sections

The information in this Material Safety Data Sheet relates to this specific material. It may not be valid for this material if used in combination with any other materials or in any process. It is the users' responsibility to satisfy themselves as to the suitability and completeness of this information for their own particular use.

The Information Herein Is Given In Good Faith, But No Warranty, Express or Implied, Is Made. Consult SePRO Corporation for Further Information.