



NUFARM AGRICULTURE INC.

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

SUPPLIED BY:

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PRODUCT:

PARASOL Flowable

PCP NUMBER:

25901

DATE PREPARED:

April 30, 2009

PREPARER:

Brent R. McLennan

CHEMICAL FAMILY/USE:

Copper Fungicide/Bactericide

FORMULA:

Cu(OH)₂

CHEMICAL SYNONYMS:

Copper hydroxide, Copper (II) hydroxide, Cupric hydroxide

2. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Ingredients	Wt. %	CAS NO.
Copper Hydroxide	37.5	20427-59-2

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: May cause irritation to the eyes. Slightly to non-toxic orally, dermally, and by inhalation. See below for route specific details.

EFFECTS OF ACUTE EXPOSURE:

INGESTION: Slightly toxic by oral exposure. This material may produce toxicity if ingested in large quantities. Symptoms of over-exposure may include nausea, and vomiting, abdominal pain, and central nervous system depression, which, if sever enough, may lead to death.

SKIN CONTACT: Slight skin irritant. Excessive exposure, especially if prolonged, may produce skin irritation. Repeated exposure may cause allergic contact dermatitis. Not a skin absorption hazard.

INHALATION: Slightly toxic by inhalation. Excessive exposure may cause cough, mucous production, shortness of breath, reflecting metal fume fever.

EYE CONTACT: May cause irritation to the eyes.



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MEDICAL CONDITIONS AGGRAVATED: Copper-intolerant individuals should not be exposed to this material. No additional information is available on whether overexposure to this material would aggravate other existing special medical conditions.

SUBCHRONIC (TARGET ORGAN) EFFECTS: Repeated ingestion of copper salts may result in anemia, liver, and kidney damage. Chronic inhalation exposure may cause a metallic taste in the mouth, irritation of the upper respiratory tract such as the nasal mucosa that may progress to perforation of the nasal septum. Chronic cough may also occur. Copper hydroxide, which comprises 37.5% of this product, governs the toxicity of the product. The remaining components have low to negligible toxicity.

CHRONIC EFFECTS/CARCINOGENICITY: Low chronic toxicity unless excessive exposure is encountered. Excessive exposure to copper by inhalation may result in irritation of the upper respiratory tract which, if severe, may lead to perforation of the nasal septum after long periods of exposure.

REPRODUCTIVE TOXICITY: No information available.

DEVELOPMENTAL TOXICITY: No information available.

GENOTOXICITY: No information available.

PRINCIPLE ROUTES OF EXPOSURE: Inhalation, eye contact, skin absorption, oral ingestion.

TOXICOLOGICALLY SYNERGISTIC MATERIALS: None known.

OTHER: None known.

4. FIRST AID MEASURES

INGESTION: Take patient to nearest hospital or contact poison control centre. Take container, label booklet or product name and Pest Control Product Registration Number with you when seeking medical attention. Drink promptly a large quantity of milk, egg white, gelatin solution or if these are not available, large quantities of water. Unless extensive vomiting has occurred, empty the stomach by gastric lavage with water, milk, sodium bicarbonate solution of a 0.1 % solution of potassium ferrocyanide. (Gosselin, **Clinical Toxicology of Commercial Products, 5th Ed.**). Administration of gastric lavage should be performed by qualified medical personnel. Probable mucosal damage may contraindicate use of gastric lavage.

SKIN: Remove contaminated clothing and shoes. Wash with plenty of soap and water for 15-20 minutes until no evidence of chemical remains. Get professional medical attention.

INHALATION: Remove victim to fresh air. If not breathing, give artificial respiration preferably mouth-to-mouth. Get professional medical attention immediately.

EYES: Hold eyelids open and flush with water for 15-20 minutes until no evidence of chemical remains. Get professional medical attention.

NOTE TO PHYSICIAN: Treat symptomatically. Acute oral overexposure to copper hydroxide, a major component of this product, may cause hypotension, hemolysis, and, rarely, methemoglobinemia. Severe intoxication is associated with serum copper levels greater than 500 mcg/dl. Copper hydroxide is an emetic, however, dilution with fluids, adsorption with activated charcoal, or lavage may be indicated. Chelation therapy with BAL or D-penicillamine has proved useful in cases of acute overexposure.

5. FIRE FIGHTING MEASURES

FLASH POINT:Not determined

CONDITIONS OF FLAMMABILITY:.....Negligible fire hazard when exposed to heat or flame.

FLAMMABLE LIMITS IN AIR - Upper (%):Not determined

FLAMMABLE LIMITS IN AIR - Lower (%):.....Not determined

AUTOIGNITION TEMPERATURE:Not determined

SENSITIVITY TO MECHANICAL IMPACT (Y/N):N

SENSITIVITY TO STATIC DISCHARGE:Not determined

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

SPECIAL FIREFIGHTING PROCEDURES: Firefighters should wear self-contained breathing apparatus and full protective



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clothing when fighting chemical fires. Minimize and contain water runoff.

6. ACCIDENTAL RELEASE MEASURES

ACTION TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: Use safety equipment and procedures appropriate to the size of the spill. Keep unnecessary people away. Avoid runoff to natural waters and sewers. Surround and absorb spills with inert material such as perlite, sawdust, clay granules, vermiculite, sand or dirt. Contain all affected material in a closed, labeled container for proper disposal. Isolate from other waste materials. Clean contaminated area such as hard surfaces with detergent and water, collecting cleaning solution for proper disposal. Large spills to soil or similar surfaces may necessitate removal of top soil. In water, if feasible, copper may be precipitated/ultrafiltered with caustics or other chemicals, and resulting sludge collected.

7. HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Keep out of reach of children. Store in a clean, dry area, away from food and feed products. Store above 0°C and below 35°C. Average shelf life under proper storage conditions is 2 years.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE LIMITS:

Hazardous Ingredients	TWA	ACGIH TLV	STEL	Units
Copper hydroxide	1 *	1 *	N/E	mg/m ³

* As copper dusts or mists (CAS # 7440-50-8).

ENGINEERING CONTROLS: Use in a well ventilated area. General ventilation with a good source of make-up air recommended as minimum for indoor situations. Ventilation should be adequate to maintain air concentrations below exposure limits.

RESPIRATORY PROTECTION EQUIPMENT: In enclosed spaces where the TLV may be exceeded, wear NIOSH/MSHA approved dust or mist respirator.

PROTECTIVE GLOVES: Wear chemical resistant gloves during mixing, loading, clean-up and repair activities.

EYE AND FACE PROTECTION: Wear protective eyewear to prevent contact with this substance.

OTHER PROTECTIVE EQUIPMENT: Applicators and other handlers must wear long-sleeved shirt and long pants, and shoes plus socks.

VENTILATION: Control enclosed spaces with adequate ventilation to prevent exceedance of ACGIH TLV (1 mg/m³).

9. PHYSICAL AND CHEMICAL PROPERTIES

NOTE: Physical data are typical values, but may vary from sample to sample. A typical value should not be construed as a guaranteed analysis or as a specification.

- BOILING POINT:**Not determined
- VAPOR PRESSURE:**Not determined
- VAPOR DENSITY (air = 1):**.....Not determined
- FREEZING POINT:**Not determined
- MELTING POINT:**Decomposes above 140°C
- PHYSICAL STATE:**.....Liquid
- ODOUR:**Slight characteristic copper odour



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COLOUR:..... Bluish teal
ODOR THRESHOLD (ppm):..... Not determined
EVAPORATION RATE (butyl acetate = 1):..... Not determined
SPECIFIC GRAVITY (water = 1): Approximately 1.47 g/ml
DENSITY @ 25°C: Approximately 1.47 g/ml
pH:..... 8.0 – 8.5
SOLUBILITY IN WATER (20°C):..... Disperses in water
COEFFICIENT OF WATER/OIL DISTRIBUTION:..... Not determined

10. STABILITY AND REACTIVITY

STABILITY: Stable under normal conditions.

HAZARDOUS POLYMERIZATION: Not known to polymerize.

HAZARDOUS THERMAL DECOMPOSITION/COMBUSTION PRODUCTS: Decomposes to CuO and H₂O above 140°C.

INCOMPATIBILITY (MATERIALS TO AVOID): Acids and sulphur.

CONDITIONS TO AVOID: Excessive heat.

11. TOXICOLOGICAL INFORMATION

ACUTE ORAL LD₅₀ (mg/kg):..... 1630 mg/kg (Rat).

Ingestion of large doses of copper salts may result progressively in irritation of the gastrointestinal tract, nausea, vomiting, salivation, gastric pain, hemorrhagic gastritis, diarrhea, capillary damage, liver and kidney damage, and central nervous system stimulation followed by depression. Jaundice, pain in the liver, and hemolytic anemia have been reported following acute human poisonings.

ACUTE DERMAL LD₅₀ (mg/kg): >5000 mg/kg (Rat).

This product is slightly toxic by dermal exposure.

ACUTE INHALATION LC₅₀ (mg/l): >2.15 mg/L (Rat – 4 hour).

May cause irritation of the mucous membranes. Exposure to copper fume may result in metallic taste, nausea, vomiting, and metal fume fever with chills, fever, aching muscles, dry throat and headache.

OTHER: Slightly irritating to the skin. Considered as mildly irritating to the eye of a rabbit.

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION: (copper hydroxide)

96-HOUR LC₅₀ (mg/L): 0.023 (Rainbow Trout)

96-HOUR LC₅₀ (mg/L): 180 (Bluegill)

48-HOUR EC₅₀ (mg/L): 0.0065 (Daphnia)

ORAL LD₅₀ (mg/kg): >340 (Bobwhite Quail)

DIETARY LC₅₀ (ppm): >10,000 (Mallard Duck, 8 day)

CHEMICAL FATE INFORMATION: The degree of mobility of copper in the environment depends upon the pH of ambient soils and waters. The higher the acidity, the more soluble copper salts are and, hence, the more mobile. Partitioning of copper into air is negligible due to the low vapor pressure of copper salts.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: For information on disposal of unused, unwanted product, contact the manufacturer or the provincial regulatory agency. Disposal should be made in accordance with federal, provincial and local regulations. Contact the manufacturer



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and the provincial regulatory agency in case of a spill, and for clean up of spills.

Do not reuse container for any purpose. If applicable, return container in accordance with return program. If a recyclable container, dispose of at a container collection site. Contact local distributor, dealer or municipality for the location of the nearest collection site. Before taking the container to the collection site, triple or pressure rinse the empty container adding rinsings to spray tank, and make container unsuitable for further use. If there is no container collection site in your area, dispose of the container in accordance with provincial requirements.

14. TRANSPORT INFORMATION

CANADIAN TDG DESCRIPTION (Road & Rail): Not dangerous for transport by road/rail in Canada. Contact manufacturer for updates to transport information.

15. REGULATORY INFORMATION

WHMIS HAZARD CLASS: D2B Toxic Material

WHMIS TRADE SECRET: Exempt. (This product is regulated under the Pest Control Products Act - WHMIS exempt.)

CANADIAN INVENTORY: Copper hydroxide is listed on the Domestic Substances List (DSL)

HAZARD RATING SYSTEMS

HMIS: HEALTH – 1, FIRE – 1, REACTIVITY – 0

National Fire Protection Association (NFPA®) Hazard Ratings:

Ratings for This Product		Key to Ratings	
2	Health Hazard	0	Minimal
1	Flammability	1	Slight
0	Instability	2	Moderate
		3	Serious
		4	Severe

16. OTHER INFORMATION

REVISIONS:

The following has been revised since the last issue of this MSDS: Section 1 revision.

ADDITIONAL INFORMATION:

Abbreviations used throughout the MSDS are: NA = Not available
NAp = Not applicable
N/E = None Established.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

Company and public references utilized in preparation of the MSDS.

*****END OF MSDS*****