

**1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**

**Product Name:** **Champ® Formula 2 Flowable**  
**Synonyms:** Copper Hydrate, Cupric Hydroxide  
**EPA Reg. No.:** 55146-64

**Company Name:** Nufarm Americas Inc. AGT Division  
150 Harvester Drive, Suite 200  
Burr Ridge, IL 60527

**Telephone Numbers:** **For Chemical Emergency, Spill, Leak, Fire, Exposure, or Accident,**  
**Call CHEMTREC Day or Night: 1-800-424-9300**  
**For Medical Emergencies Only, Call 1-877-325-1840**

**Date of Issue:** June 5, 2012 **Supersedes:** March 1, 2012  
**Sections Revised:** 14

**2. HAZARDS IDENTIFICATION****Emergency Overview:**

**Appearance and Odor:** Blue to blue-green colored liquid with slight copper odor.

**Warning Statements:** Keep out of reach of children. WARNING. Causes substantial but temporary eye injury. Harmful if swallowed.

**Potential Health Effects:**

**Likely Routes of Exposure:** Inhalation, eye and skin contact

**Eye Contact:** Mildly irritating based on acute toxicity studies.

**Skin Contact:** Slightly toxic and slightly irritating to skin based on acute toxicity studies. Excessive exposure, especially if prolonged, may cause skin irritation. Repeated exposure may cause allergic contact dermatitis.

**Ingestion:** Slightly toxic if swallowed. This material may produce toxicity if ingested in large quantities. Symptoms of overexposure may include nausea and vomiting, abdominal pain, and central nervous system depression, which, if severe enough, may lead to death.

**Inhalation:** Low inhalation toxicity. Overexposure by inhalation may cause cough, mucous production, shortness of breath, reflecting metal fume fever.

**Medical Conditions Aggravated by Exposure:** 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.

See Section 11: TOXICOLOGICAL INFORMATION for more information.

**Potential Environmental Effects:**

This product is toxic to fish and aquatic organisms. Drift and runoff from treated areas may be hazardous to fish and aquatic organisms in adjacent aquatic sites.

See Section 12: ECOLOGICAL INFORMATION for more information.

**3. COMPOSITION / INFORMATION ON INGREDIENTS**

COMPONENT	CAS NO.	% BY WEIGHT
Copper Hydroxide	20427-59-2	37.5
Other Ingredients		62.5

**4. FIRST AID MEASURES**

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

**If Swallowed:** 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. 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 by mouth-to-mouth, if possible. Call a poison control center or doctor for further 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**

**Flash Point:** Not applicable due to aqueous formulation

**Autoignition Temperature:** Not determined

**Flammability Limits:** Not determined

**Extinguishing Media:** Use dry chemical, carbon dioxide, water spray or foam.

**Special Fire Fighting Procedures:** Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full fire-fighting turn out gear. Dike area to prevent runoff and contamination of water sources. Dispose of fire control water later.

**Unusual Fire and Explosion Hazards:** If water is used to fight fire, contain runoff, using dikes to prevent contamination of water supplies. Dispose of fire control water later.

**Hazardous Decomposition Materials (Under Fire Conditions):** Decomposes to CuO and water above 140°F (60°C).

**National Fire Protection Association (NFPA) Hazard Rating:**

**Rating for this product:** Health: 2      Flammability: 1      Reactivity: 0

Hazards Scale: 0 = Minimal    1 = Slight    2 = Moderate    3 = Serious    4 = Severe

**6. ACCIDENTAL RELEASE MEASURES**

**Personal Precautions:** Wear appropriate protective gear for the situation. See Personal Protection information in Section 8.

**Environmental Precautions:** Prevent material from entering public sewer systems or any waterways. Do not flush to drain. Large spills to soil or similar surfaces may necessitate removal of topsoil. The affected area should be removed and placed in an appropriate container for disposal.

**Methods for Containment:** Dike spill using absorbent or impervious materials such as earth, sand or clay. Collect and contain contaminated absorbent and dike material for disposal.

**Methods for Clean-Up and Disposal:** Pump any free liquid into an appropriate closed container. If feasible, copper may be precipitated/ultrafiltrated with caustics or other chemicals and resulting sludge disposed of in a chemical landfill. Decontaminate tools and equipment following cleanup. See Section 13: DISPOSAL CONSIDERATIONS for more information.

**Other Information:** Large spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies.

**7. HANDLING AND STORAGE**

**Handling:**

Causes substantial but temporary eye injury. Harmful if swallowed. Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

**Storage:**

Store in a cool, dry place. Do not store near feed, food or within the reach of children. Do not contaminate water, food, or feed by storage or disposal.

**8. EXPOSURE CONTROLS / PERSONAL PROTECTION****Engineering Controls:**

Where engineering controls are indicated by specific use conditions or a potential for excessive exposure, use local exhaust ventilation at the point of generation.

**Personal Protective Equipment:**

**Eye/Face Protection:** To avoid contact with eyes, wear chemical goggles or shielded safety glasses. An emergency eyewash or water supply should be readily accessible to the work area.

**Skin Protection:** To avoid contact with skin, wear long pants, long-sleeved shirt, socks, shoes and chemical-resistant gloves made of any waterproof material such as polyvinyl chloride, nitrile rubber, or butyl rubber. An emergency shower or water supply should be readily accessible to the work area.

**Respiratory Protection:** Not normally required. If vapors or mists exceed acceptable levels, wear NIOSH approved air-purifying respirator with cartridges/canisters approved for use against pesticides.

**General Hygiene Considerations:** Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this material: 1) do not store, use and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored; 2) wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics or using the toilet.

**Exposure Guidelines:**

Component	OSHA		ACGIH		Unit
	TWA	STEL	TWA	STEL	
Copper Hydroxide	1*	NE	1*	NE	mg/m <sup>3</sup>

\*As copper dusts or mists (CAS No. 7440-50-8)

NE = Not Established

**9. PHYSICAL AND CHEMICAL PROPERTIES**

**Appearance and Odor:** Blue to blue-green colored liquid with slight copper odor.

**Boiling Point:** Not determined

**Solubility in Water:** Dispersible

**Density:** 1.371 gm/cm<sup>3</sup>

**Specific Gravity:** Not determined

**Evaporation Rate:** Not determined

**Vapor Density:** Not determined

**Freezing Point:** Not determined

**Vapor Pressure:** Not determined

**pH:** 8.7 (1% Solution)

**Viscosity:** Not determined

**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.

**10. STABILITY AND REACTIVITY**

**Chemical Stability:** This material is stable under normal handling and storage conditions.

**Conditions to Avoid:** Excessive heat.

**Incompatible Materials:** Acids and sulfur.

**Hazardous Decomposition Products:** Decomposes to CuO and water above 140°F (60°C).

**Hazardous Reactions:** Hazardous polymerization will not occur.

**11. TOXICOLOGICAL INFORMATION****Toxicological Data:**

Data from laboratory studies conducted on a similar, but not identical, formulation:

**Oral:** Rat LD<sub>50</sub>: 1,630 mg/kg

**Dermal:** Rabbit LD<sub>50</sub>: >5,000 mg/kg

**Inhalation:** Rat 4-hr LC<sub>50</sub>: >2.15 mg/l

**Eye Irritation:** Rabbit: Mildly irritating

**Skin Irritation:** Rabbit: Slightly irritating

**Skin Sensitization:** Not a contact sensitizer in guinea pigs following repeated skin exposure.

**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.

**Carcinogenicity / Chronic Health Effects:** 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:** Copper hydroxide is not known to exhibit reproductive effects.

**Developmental Toxicity:** Copper hydroxide is not known to exhibit teratogenic (birth defect) effects.

**Genotoxicity:** There was no evidence of mutagenicity in *in vitro* and *in vivo* studies.

**Assessment Carcinogenicity:** None listed with ACGIH, IARC, NTP or OSHA.

See Section 2: HAZARDS IDENTIFICATION for more information.

**12. ECOLOGICAL INFORMATION****Ecotoxicity:**

Data on Copper Hydroxide:

96-hour LC <sub>50</sub> Bluegill:	180 mg/l	Bobwhite Quail Oral LC <sub>50</sub> :	>3400 mg/kg
96-hour LC <sub>50</sub> Rainbow Trout:	0.023 mg/l	Mallard Duck 8-day Dietary LD <sub>50</sub> :	>10,000 ppm
48-hour EC <sub>50</sub> Daphnia:	0.0065 mg/l		

**Environmental Fate:**

Copper is a chemical element and therefore cannot be degraded or transformed into related metabolites.

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 the air is negligible due to the low vapor pressure of copper salts.

**13. DISPOSAL CONSIDERATIONS****Waste Disposal Method:**

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 Environmental Protection Agency Regional Office for guidance.

**Container Handling and Disposal:**

**Nonrefillable Containers 5 Gallons or Less:** Nonrefillable container. **DO NOT** reuse or refill this container. Offer for recycling if available. Triple rinse container (or equivalent) promptly after emptying.

**Triple rinse as follows:** Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10

seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities. Plastic containers are also disposable by incineration, or, if allowed by State and local authorities, by burning. If burned stay out of smoke.

**Nonrefillable containers larger than 5 gallons: Nonrefillable container. DO NOT** reuse or refill this container. Offer for recycling if available. Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse as follows:** Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Pressure rinse as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

**Refillable containers larger than 5 gallons: Refillable container.** Refill this container with pesticide only. **DO NOT** reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or a mix tank. Fill the container about 10% full with water and, if possible, spray all sides while adding water. If practical, agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

**Refillable containers for return to Nufarm: Refillable container.** Refill this container with pesticide only. **DO NOT** reuse this container for any other purpose. Close all openings and replace all caps. Contact Nufarm's Customer Service Department at 1-800-345-3330 to arrange for return of the empty refillable container.

#### 14. TRANSPORTATION INFORMATION

Follow the precautions indicated in Section 7: HANDLING AND STORAGE of this MSDS.

##### DOT

##### **< 119 gallons per completed package:**

Not regulated by DOT unless shipped by water. See IMO / IMDG description.

##### **≥ 119 gallons per completed package:**

UN3082, Environmentally hazardous substance, liquid, n.o.s.,  
(Copper Hydroxide), 9, III, Marine Pollutant

##### IMO / IMDG

UN3082, Environmentally hazardous substance, liquid, n.o.s.,  
(Copper Hydroxide), 9, III, Marine Pollutant

##### IATA

Not regulated

<b>15. REGULATORY INFORMATION</b>
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**U.S. Federal Regulations:**

**TSCA Inventory:** This product is exempted from TSCA because it is solely for FIFRA regulated use.

**SARA Hazard Notification/Reporting:**

**Hazard Categories Under Criteria of SARA Title III Rules (40 CFR Part 370):**

Immediate

**Section 313 Toxic Chemical(s):**

Copper- (CAS No. 7440-50-8), 24.4% equivalent by weight in product

**Reportable Quantity (RQ) under U.S. CERCLA:**

Copper- (CAS No. 7440-50-8) 5,000 pounds

**RCRA Waste Code:**

None

**State Information:**

Other state regulations may apply. Check individual state requirements.

**California Proposition 65:** Listed under copper (CAS No 7440-50-8) with footnotes referencing above federal standards.

<b>16. OTHER INFORMATION</b>
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This Material Safety Data Sheet (MSDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-ACCEPTED PRODUCT LABELING (attached to and accompanying the product container). This MSDS provides important health, safety and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specifically for product use in the ordinary course.

Use, storage and disposal of pesticide products are regulated by the EPA under the authority of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) through the product labeling, and all necessary and appropriate precautionary, use, storage, and disposal information is set forth on that labeling. It is a violation of Federal law to use a pesticide product in any manner not prescribed on the EPA-accepted label.

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