

Reg # 1109-32

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

APR 1 1994

ALICE WALKER, Ph. D  
BOLIDEN INTERTRADE INC.  
3379 PEACHTREE ROAD, N.E., SUITE 300  
ATLANTA, GEORGIA 30326

OFFICE OF  
PREVENTION, PESTICIDES AND  
TOXIC SUBSTANCES

Subject: Label Amendment Submission of 10/27/93 Response to PR Notice 93-7  
EPA Reg. No. 1109-32  
COPPER SULFATE SUPERFINE CRYSTALS

Dear Registrant:

The labeling cited above and submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended, is accepted subject to the comments reflected on the enclosed sheet. A copy of your proposed labeling stamped "ACCEPTED WITH COMMENTS" is enclosed.

**WHAT THIS ACCEPTANCE MEANS:**

Based on your certification, the Agency has accepted the labeling changes that are necessary to comply with the Worker Protection Standard (WPS) labeling requirements of 40 CFR part 156, subpart K, described in PR Notices 93-7 and 93-11. Any other labeling changes submitted in connection with this amendment application but not directly related to compliance with the WPS have not been reviewed or accepted by the Agency. If you wish to make such changes, you must submit a separate amendment application proposing them. If your product is currently suspended, the acceptance of this labeling amendment does not affect the suspension in any way.

**WHAT YOU NEED TO DO NEXT:**

By the next label printing make all the specified changes to your labeling. Send to EPA one (1) copy of the final printed labeling:

- BEFORE selling or distributing any product bearing the final printed labeling
- AND
- WITHIN one year from date of this acceptance.



Recycled/Recyclable  
Printed with Soy/Candia Ink on paper that  
contains at least 50% recycled fiber

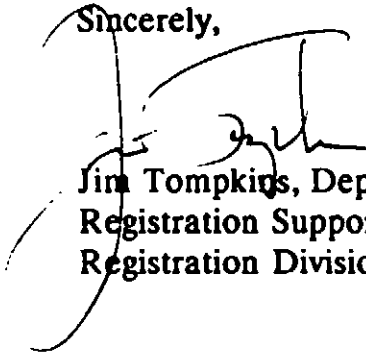
Submit the final printed labeling via the U.S. Postal Service to:

Document Processing Desk (FIN-LABEL)  
Office of Pesticide Programs (7505C)  
U.S. Environmental Protection Agency  
401 M Street, SW  
Washington, D.C. 20460-0001

Hand or courier deliveries of final printed labeling may be made to:

Document Processing Desk (FIN-LABEL)  
Office of Pesticide Programs  
Room 266A, Crystal Mall 2  
1921 Jefferson Davis Highway  
Arlington, VA 22202

Sincerely,



Jim Tompkins, Deputy Chief  
Registration Support Branch  
Registration Division (7505W)

Attachment

APR 1 1994

Under the Federal Insecticide,  
Fungicide, and Rodenticide Act  
as amended, for the pesticide  
registered under EPA Reg. No.

1109-32

# COPPER SULFATE SUPERFINE CRYSTALS

<b>ACTIVE INGREDIENT:</b>	
Copper Sulfate (Pentahydrate)*.....	99.0%
<b>INERT INGREDIENTS:</b> .....	1.0%
<b>TOTAL</b>	<b>100.0%</b>

METALLIC COPPER EQUIVALENT 25.2%

## FOR

See back for specific use directions.

- Algae control in impounded waters, lakes, ponds and reservoirs.
- Algae and Pondweed control in irrigation conveyance systems.
- Tadpole shrimp and algae control in rice fields.
- Also for manufacturing, repackaging, formulation of algaecides, fungicides, and other non-pesticidal uses.
- Use as a trace mineral in mixing animal feeds in accord with good manufacturing procedures as prescribed by FDA and at levels consistent with good feeding practices.

KEEP OUT OF REACH OF CHILDREN

## DANGER

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

### STATEMENT OF PRACTICAL TREATMENT

**If in Eyes:** Flush with plenty of water. Call a physician.

**If on Skin:** Wash with plenty of soap and water. Get medical attention.

**If Swallowed:** Drink promptly a large quantity of milk, egg white, gelatin solution, or, if these are not available, large quantities of water. Avoid alcohol.

**NOTE TO PHYSICIAN:** Probable mucosal damage may contraindicate the use of gastric lavage. Measures against circulatory shock, respiratory depression and convulsion may be needed.

See back panel for additional  
Precautionary Statements.

Manufactured for:  
**BOLIDEN INTERTRADE, INC.**  
3379 Peachtree Rd. NE, Suite 300  
Atlanta, GA 30326

EPA Reg. No. 1109-32  
EPA Est. No. 1109-TN-1

Form No. 9-32A88

NET WEIGHT: 50 LBS.

**PRECAUTIONARY STATEMENTS**

**DANGER**

**HAZARDS TO HUMANS AND DOMESTIC ANIMALS**

Causes severe eye and skin irritation. Harmful if absorbed through skin or inhaled. May cause skin sensitization reactions in certain individuals. Avoid contact with the skin, eyes, or clothing. Avoid breathing dust. ~~Protective clothing, including goggles, should be worn. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse.~~

**PERSONAL PROTECTIVE EQUIPMENT**

**Applicators and other handlers must wear:**

- Long-sleeved shirt and long pants,
- Shoes plus socks,
- Protective eyewear.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. 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.

**USER SAFETY RECOMMENDATIONS:**

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. Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

**ENVIRONMENTAL HAZARDS**

**SPECIAL PRECAUTIONS** when applying this product directly to water as an algicide or herbicide: This pesticide is toxic to fish. Direct application of copper sulfate to water may cause a significant reduction in population of aquatic invertebrates, plants and fish. Do not treat more than one-half of a lake or pond at one time in order to avoid depletion of oxygen from decaying vegetation. Allow 1 to 2 weeks between treatment for oxygen levels to recover. Trout and other species of fish may be killed at application rates recommended on this label, especially in soft or acid waters. However, fish toxicity generally decreases when the hardness of water increases. Do not contaminate water by cleaning of equipment or disposal of wastes.

**FOR MANUFACTURING USE:** This pesticide is toxic to fish and aquatic organisms. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or public waters unless this product is specifically identified and addressed in an NPDES permit. Do not discharge effluent containing this product to sewer systems without previously notifying the sewage treatment plant authority, except when product is labeled for use in sewers and bears such use instructions. For guidance contact your State Water Board or Regional Office of the EPA.

NOTE: If treated water is to be used as potable water, the residual copper content must not exceed 1 ppm (4 ppm copper sulfate pentahydrate).

**DIRECTIONS FOR USE**

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

**AGRICULTURAL USE REQUIREMENTS**

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 24 hours.

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,
- Waterproof gloves,
- Shoes plus socks,
- Protective eyewear.

**NON-AGRICULTURAL USE REQUIREMENTS**

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

Use as a trace mineral in mixing feeds in accordance with good manufacturing procedures as prescribed by FDA and added at levels consistent with good feeding practices.

**STORAGE AND DISPOSAL**

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

**STORAGE:**

Store product in a secure dry place. Keep product dry as product is water soluble. ~~When opening, closing or handling open packages, or pouring product, wear goggles~~

~~to prevent dusting into eyes.~~ Spilled product should be swept up, used if clean, or disposed in accord with the disposal procedures below. Store product only in original container. During storage, store pesticide separately to prevent cross-contamination of other pesticides, fertilizers, food and feed.

**DISPOSAL:**

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

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

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.

**GENERAL INSTRUCTIONS FOR USE**

Copper sulfate effectively controls many species of both filamentous (mat forming green) and planktonic (single cell blue-green) algae. The dose of copper sulfate and control are affected by algae species, water hardness, water temperature, and concentration as well as whether water is clear, turbid, flowing, or static. Preferably water should be clear and above 60° F with treatment made in late morning on a sunny day. Static water usually requires less copper sulfate than flowing water. The harder the water or the greater the algae concentration, the higher the required dose of copper sulfate. If floating mats of green algae are present, it is advisable to especially treat the surface of these mats for best control. Algae will absorb the copper sulfate within hours after treatment, and death should be evident within 3 to 5 days. If there is some doubt about the concentration to apply, it is generally preferable to begin with a lower dose and increase the dose until algae are killed. (A few algae species are resistant to copper sulfate and may not be killed.) Repeat treatments within a season may be needed to keep algae under control to the desired level.

NOTE: Note the above fish toxicity precautionary statement under Environmental Hazards. Treatment of algae can also result in oxygen loss from the water caused by the decay of dead algae. This loss can cause fish suffocation. To minimize this hazard treat 1/3 to 1/2 of water area in a single operation and wait 10 to 14 days between treatments. Begin treatments along the shore and proceed outwards in bands to allow fish to move into untreated water.

When a water solution of copper sulfate is prepared, preferably mix in a plastic or glass container. When using a metal container use one that is painted, enameled, or copper lined. Copper sulfate solutions will slowly react or corrode galvanized containers and brass parts.

**SPECIFIC DIRECTIONS FOR USE**

1. To control Tadpole Shrimp in rice fields: Make application to the flooded fields any time the pest appears and repeat treatment as needed to provide adequate control.

Apply 5 to 15 pounds of this product per acre. Treatment rate depends on the water depth and flow. Use a lower rate when water depth is shallow and flow is slow and increase dose as water depth increases and/or under higher flow rates.

2. To control algae in rice fields: Apply 10-15 pounds of this product per acre as needed to control algae in flooded rice fields or dissolve in water and make a surface spray. Repeat treatment if needed. Control is best obtained if application is made when algae are still growing on flooded soil surface before they begin to float. Use higher rate in deeper water (6 inches or greater).

3. To control algae in impounded waters, lakes, ponds, and reservoirs: When to Apply: Early treatment is essential for most satisfactory algae control at the lowest dosage levels. Early growth is usually confined to shallower shore areas. Begin treatment when not over 5 to 10% of the water surface area is covered with algae growths which is usually nearest the shoreline. Delaying treatment until heavy algae growths are present usually requires a higher dose and may result in fish distress or death since rapid decomposition of heavy growths greatly reduces the oxygen content of the water. Several repeat treatments are usually necessary to control algae each season.

Dosage Rates to Control Algae: Accurately determine the surface acres of water to be treated at one time and multiply this by the average depth in feet of this water area to determine the acre feet of water to be treated. One acre foot = one surface acre (43,560 sq. ft.) X one foot of depth. Each acre foot of water contains 326,000 gallons, or 2,720,000 pounds of water. If the problem algae genera is known, use the table below and its equivalence to determine the approximate dosage of this product needed to control that genera. (A dose of 1 ppm equals 1 pounds of this product for each million pounds of water). If the genera of either filamentous or planktonic algae is not known, apply 0.8 to 1.75 pounds of this product per acre foot of water, using the lower rate in soft water and the higher rate in hard water. For control of bottom-attached algae Chara and Nitella use 1.75 to 2.3 pounds per acre foot of water to be treated. If control is not achieved or in very adverse waters, a higher rate may be needed, but consider the fish caution. Dose should not exceed 4 ppm of this product (1 ppm of copper as metallic) when water is used for drinking.

### COPPER SULFATE REQUIRED FOR TREATMENT OF DIFFERENT GENERA OF ALGAE

The genera of algae listed below are commonly found in waters of the United States. Use the lower recommended rate in soft waters (less than 50 ppm methyl orange alkalinity) and the higher concentration in hard water (above 50 ppm alkalinity). Always consult State Fish and Game Agency before applying this product to public waters.

<u>Organism</u>	<u>Dose</u>	<u>Algae Species</u>
Cyanophyceae (Blue-green)	1/4 to 1/2 ppm*	Anabaena, Anacystis, Aphanizomenon, Gloeotrichia, Gomphosphaeria, Polycystis, Rivularia

	1/2 to 1 ppm*	Cylindrospermum, Oscillatoria, Plectonema
	1 to 1-1/2 ppm*	Nostoc, Phormidium
	1-1/2 to 2 ppm*	Calothrix, Symploca
Chlorophyceae (Green)	1/4 to 1/2 ppm*	Closterium, Hydrodictyon, Spirogyra, Ulothrix
	1/2 to 1 ppm*	Botryococcus, Cladophora, Coelastrum, Droparnaldia, Enteromorpha, Gloeocystis, Microspora, Tribonema, Zygnema
	1 to 1-1/2 ppm*	Chlorella, Crucigenia, Desmidium, Golenkinia, Occystis, Palmella, Pithophora, Staurastrum, Tetradron
	1-1/2 to 2 ppm*	Ankistrodesmus, Chara, Nitella, Scenedesmus
Diatomaceae (Diatoms)	1/4 to 1/2 ppm*	Asterionella, Fragilaria, Melosira, Navicula
	1/2 to 1 ppm*	Gomphonema, Nitzschia, Stephanodiscus, Synedra, Tabellaria
	1 to 1-1/2 ppm*	Achnanthes, Cymbella, Neidium
Protozoa (Flagellates)	1/4 to 1/2 ppm*	Dinobryon, Synura, Uroglena, Volvox
	1/2 to 1 ppm*	Ceratium, Cryptomonas, Euglena, Glenodinium, Mallomonas
	1 to 1-1/2 ppm*	Chlamydomonas, Haematococcus, Peridinium
	1-1/2 to 2 ppm*	Eudorina, Pandorina



- \*1/4 to 1/2 ppm = 0.67-1.3 lbs./acre ft.
- \*1/2 to 1 ppm = 1.3-2.6 lbs./acre ft.
- \*1 to 1-1/2 ppm = 2.6-3.9 lbs./acre ft.
- \*1-1/2 to 2 ppm = 3.9-5.32 lbs./acre ft.

**How to Apply:** Copper sulfate can be applied to impounded water by several methods to control algae. Fine crystals are usually broadcast on the water surface using a properly equipped boat, or a water solution may be prepared and sprayed on the water surface. Mix copper sulfate in sufficient water to thoroughly spray the water surface. While the volume per surface acre depends on the type of spray equipment being used, spray volume should be approximately 20 to 500 or more gallons per acre of surface water. Broadcast applicators for Superfine Crystals may include, but not limited to use of a cyclone type spreader attached to a boat for small ponds or a specially equipped air blower to spread the fine crystals at the desired rate over the surface of the water.

4. **To Control Algae and the Potamogeton Pondweeds**, leafy and sago, in irrigation conveyance systems, use the continuous application method selecting proper equipment to supply copper sulfate Superfine Crystals as follows: **For Algae Control:** Begin continuous addition of copper sulfate Superfine Crystals when water is first turned into the system and continue throughout the irrigation season applying 0.1 to 0.2 lbs. per cubic foot per second per day. **For Leafy and Sago Pondweed Control:** Use the same continuous feed applying 1.6 to 2.4 lbs. per cubic foot per second per day. Note: For best control of leafy and sago pondweed, it is essential to begin copper sulfate additions when water is first turned into the system or ditch to be treated and continued throughout the irrigation season. Copper sulfate becomes less effective as the bicarbonate alkalinity increases. Its effectiveness is significantly reduced when the bicarbonate alkalinity exceeds about 150 ppm as CaCO<sub>3</sub>. Should copper sulfate fail to control pondweeds satisfactorily, it may be necessary to treat the ditch with either a suitable approved herbicide or use mechanical means to remove excess growth. In either case resume copper sulfate addition as soon as possible.

**NOTICE TO BUYER:** Seller warrants that this product conforms to the chemical description on this label and is reasonably fit for purpose stated on this label only when used in accordance with directions under normal use conditions. This warranty does not extend to use of this product contrary to label directions, or under abnormal use conditions, or under conditions not reasonably foreseeable to seller; buyer assumes all risk of any such use. Seller makes no other warranties, either expressed or implied.