

 <b>U.S. ENVIRONMENTAL PROTECTION AGENCY</b> Office of Pesticide Programs Registration Division (7505C) 1200 Pennsylvania Ave., N.W. Washington, D.C. 20460	EPA Reg. Number: <b>70264-5</b>	Date of Issuance: <b>MAR 25 2004</b>
	Terms of Issuance: Conditional	
	Name of Pesticide Product: <b>Liquid Copper Sulfate</b>	

**NOTICE OF PESTICIDE:**  
XX Registration  
     Reregistration  
(under FIFRA, as amended)

Name and Address of Registrant (include ZIP Code):  
**Altiva Corporation**  
**1100 Louisiana, Ste. 3160**  
**Houston, TX 77002**

**Note:** Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.

On the basis of information furnished by the registrant, this product is conditionally registered under the Federal Insecticide, Fungicide and Rodenticide Act as amended. Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is conditionally registered in accordance with FIFRA Section 3(c)(7)(A) provided that you:

1. Submit and/or cite all data required for registration of your product under FIFRA Section 3(c)(5) when the agency requires all registrants of similar products to submit such data; and submit acceptable responses required for reregistration of your product under FIFRA Section 4.
2. Make the following label changes before you release the product for shipment:
  - A. Revise the EPA Registration Number to read "EPA Reg. No. 70264-5"
  - B. In the section just below the signal word, change "16 mg per liter (1 ppm ...)" to "1 ppm metallic copper equivalent (16 mg product per liter)"
  - C. Change the "Hazards to Humans and Domestic Animals" section to read: "Danger. Corrosive. Causes irreversible eye damage and skin burns. Do not get in eyes, on skin or on clothing. May be fatal if swallowed. Harmful if inhaled. Do not breath spray mist. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco."
  - D. Add the following section below the "Hazards to Humans..." section: "PERSONAL PROTECTIVE EQUIPMENT (PPE). Applicators and other handlers must wear coveralls over long-sleeved shirt and long pants, chemical resistant gloves made of any waterproof material, protective eyewear, and chemical resistant footwear with socks. When mixing and loading wear a chemical resistant apron. Wash outside of gloves before removing. Follow the 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."
  - E. Add the following statement to the bottom block in the FIRST AID section: "Note to physician: Probable mucosal damage may contraindicate the use of gastric lavage."
  - F. In the list of genera of algae (page 3), change "Eugiena" to "Euglena".
3. Submit one copy of the revised final printed label before releasing the product for shipment.

A copy of your label stamped "Accepted with comments" is included for your records.

Signature of Approving Official:  <i>/s/ ijm</i>  Cynthia Giles-Parker, Product Manager (22) Fungicide Branch, Registration Division	Date:  MAR 25 2004
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# LIQUID COPPER SULFATE

Industrial Use Only

Active Ingredient:  
Copper sulfate pentahydrate\*..... 25.0%  
Inert Ingredients: ..... 75.0%  
TOTAL: ..... 100.0%

\*Copper as Metallic Not Less Than 6.30%

KEEP OUT OF REACH OF CHILDREN

## DANGER

Consult MSDS for additional information.  
Maximum use for potable water application is 16 mg per liter (1 ppm metallic copper equivalent).  
Product is toxic to fish UNLESS used specifically according to use directions.  
See side panel for specific pesticide use directions.

See [Side] [Back] Panel for [Additional] [Precautions] [Precautionary Statements] and First Aid [Treatment]

Net Contents:

Manufactured by:  
ALTIVIA Corporation  
1100 Louisiana, Ste. 3160  
Houston, TX 77002  
USA

ACCEPTED EPA Reg. No. 70264-  
with COMMENTS EPA Est. No.  
In EPA Letter Dated:  
MAR 25 2004

Under the Federal Insecticide,  
Fungicide, and Rodenticide Act,  
this product is a pesticide  
EPA Reg. No. 70264-5

## PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS

**DANGER. Corrosive:** Causes irreversible eye damage and skin irritation. Do not get in eyes, on skin or on clothing. Applicators and other handlers must wear: long-sleeved shirt and long pants, waterproof gloves, shoes plus socks, and protective eyewear. May be fatal if swallowed. Prolonged or frequently repeated skin contact may cause allergic reactions in certain individuals. Do not breath spray mist. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash clothing before reuse.

(Note to Reviewer: Boxed format or bullets may be used in First Aid Section if label space permits.)

FIRST AID	
IF IN EYES:	<ul style="list-style-type: none"><li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li><li>• Remove contact lenses if present, after the first 5 minutes, then continue rinsing.</li><li>• Call a poison control center or doctor for treatment advice.</li></ul>
IF SWALLOWED:	<ul style="list-style-type: none"><li>• Call a poison control center or doctor immediately for treatment advice.</li><li>• Have person sip a glass of water if able to swallow.</li><li>• Avoid alcohol.</li><li>• Do not induce vomiting unless told to do so by a poison control center or doctor.</li><li>• Do not give anything by mouth to an unconscious person.</li></ul>
IF ON SKIN OR CLOTHING:	<ul style="list-style-type: none"><li>• Take off contaminated clothing.</li><li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li><li>• Call a poison control center or doctor for treatment advice.</li></ul>
IF INHALED:	<ul style="list-style-type: none"><li>• Move person to fresh air.</li><li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.</li><li>• Call a poison control center or doctor for further treatment advice.</li></ul>
Have the product container or label with you when calling a poison control center or doctor, or going for treatment.	

## ENVIRONMENTAL HAZARDS

This product is toxic to fish. Direct application of copper sulfate to water may cause a significant reduction in populations of aquatic invertebrates, plants and fish. Fish toxicity generally decreases when the hardness of water increases. Do not contaminate water by cleaning of equipment or disposal of wastes. Consult your local State Fish and Game Agency before applying this product to public waters. Permits may be required before treating such waters.

## ENDANGERED SPECIES RESTRICTIONS

It is a violation of Federal law to use any pesticide in a manner that results in the death of an endangered species or adverse modification of their habitat. The use of this product may pose a hazard to certain Federally designated endangered species known to occur in specific areas of this country:

California	Solano grass	EPA/ES-85-13	Solano
Tennessee	Slackwater Darter	EPA/ES-85-04	Lawrence
			Wayne
			Hancock
	Freshwater Mussels	EPA/ES-85-07	Clairborne
			Hawkins
			Sullivan
Alabama	Slackwater Darter	EPA/ES-85-05	Lauderdale
			Limestone
			Madison
Virginia	Freshwater Mussels	EPA/ES-85-06	Grayson
			Smith
			Scott
			Washington
			Lee

\*\*\*\*PLEASE NOTE\*\*\*\* Before using this product in the above counties you must obtain the EPA bulletin specific to your area. The Bulletin identifies areas within these counties where the use of this pesticide is prohibited, unless specified otherwise. The EPA Bulletin is available from either your County Agricultural Extension Agent, the Environmental Species Specialist in your State Wildlife Agency Headquarters, or the appropriate Regional Office of the U.S. Fish and Wildlife Service. THIS BULLETIN MUST BE REVIEWED PRIOR TO PESTICIDE USE.

## 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 requirements specific to your State, consult the agency responsible for pesticide regulations.

## GENERAL INSTRUCTIONS FOR USE

Water hardness, temperature of the water, the type and amount of vegetation to be controlled, and the amount of water flow are to be considered in using Copper Sulfate to control algae. Begin treatment soon after plant growth has started. If treatment is delayed until a large amount of algae is present, larger quantities of Copper Sulfate will be required. Algae is difficult to control with Copper Sulfate when water temperatures are low or water is hard. Large quantities of Copper Sulfate will be required to kill and control algae in water which is flowing rather than in a body of stagnant water. If possible, curtail the flow of water before treatment and hold dormant for approximately three days after treatment or until the algae have begun to die. It is usually best to treat algae on a sunny day when the heavy mats of filamentary algae are most likely to be floating on the surface where it can be sprayed directly. If there is some doubt about the concentration to apply, it is generally best to start with a lower concentration and to increase this concentration until the algae is killed.

Treatment of algae can result in oxygen loss from decomposition of dead algae. This loss can cause fish suffocation. Therefore, to minimize this hazard, treat one-third to one-half of the water area in a single operation and wait 10 to 14 days between treatments. Begin treatments along the shore and proceed outward in bands to allow fish to move into untreated water. NOTE: If treated water is to be used as a source of potable water, the metallic copper residual must not exceed 1 ppm (4 ppm copper sulfate pentahydrate).

**CALCULATIONS FOR THE AMOUNT OF WATER IMPOUNDED AND FOR THE AMOUNT OF LIQUID COPPER SULFATE TO BE USED:** Calculate water volume as follows: 1) Obtain surface area by measuring of regular shaped ponds or mapping of irregular ponds or by reference to previously recorded engineering data or maps. 2) Calculate average depth by sounding in a regular pattern and taking the mean of these readings or by reference to previously obtained data. 3) Multiply surface area in feet by average depth to obtain cubic feet of water volume. 4) Multiply surface area in acres by average depth in feet to obtain total acre-feet of water volume.

**CALCULATE WEIGHT OF WATER TO BE TREATED AS FOLLOWS:** 1) Multiply volume in cubic feet by 62.44 to obtain total pounds of water, or 2) Multiply volume in acre feet by 2,720,000 to obtain pounds of water.

**CALCULATIONS OF ACTIVE INGREDIENT TO BE ADDED:** To calculate the amount of Liquid Copper Sulfate needed to achieve the recommended concentration, multiply the weight of water by the recommended concentration of Liquid Copper Sulfate. Since recommended concentrations are normally given in parts per million (ppm), it will first be necessary to convert the value in parts per million to a decimal equivalent. For example, 8 ppm is the same as 0.000008 when used in this calculation. Therefore, to calculate the amount of Liquid Copper Sulfate to treat 1 acre-foot of water with 8 ppm Liquid Copper Sulfate (LCS), the calculation would be as follows:

$$0.000008 \times 2,720,000 = 21.75 \text{ lbs} \times 1 \text{ gal LCS}/9.85 = 2.2 \text{ gal LCS}$$

## SPECIFIC INSTRUCTIONS

Maximum use for potable water applications is 16 mg per liter (1 ppm metallic copper equivalent).

The following applies for waters segregated for Municipal Water Utilities in treatment of potable water only.

Dosages to control algae in impounded waters, ponds, and reservoirs should be calculated per million gallons as follows:

1 MMg x 8.344 pounds per gallon x 8 ppm = 66.75 pounds liquid copper sulfate per MMg raw water (maximum use) x 1 gal per 9.85 pounds = 6.75 gallons Liquid Copper Sulfate per MMg raw water (recommended use). This is the equivalent of 8 parts per million (ppm) Liquid Copper Sulfate which delivers ½ ppm active copper. USEPA Lead and Copper Rule maximum is 1.3 ppm.

For flowing systems such as raw water intake, use same dosage ratio so that the maximum usage remains 6.75 gallons Liquid Copper Sulfate per day per MMg per day raw water.

Successful algae treatment can be accomplished at much lower dosages. Treatment dosages can be as low as 1/20 the maximum or 0.68 gallon per MMg water.

To control algae in impounded waters, lakes, ponds and reservoirs: There are several methods to apply Liquid Copper Sulfate to impounded water. The most satisfactory and simplest method is to pump injection at the intake pipes located between irrigation canal and reservoir. Bulk Copper sulfate tanks should be metered and regulated to coincide with the start of the irrigation pump. Dosage not to exceed ½ ppm CuSO<sub>4</sub>.

# LIQUID COPPER SULFATE (LCS) REQUIRED FOR TREATMENT

## FERENT GENERA OF ALGAE

The general algae that are 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 municipal waters.

Organisms	1-2 ppm LCS*	2-4 ppm LCS*	4-6 ppm LCS*	6-8 ppm LCS*
Cyanophyceae (Blue-green)	Anabaena Anacystis Aphanizomenon Gloeotrichia Gomphosphaeria Polycystis Rivularia	Cylindrospermum Oscillatoris Plectonema	Nostoc Phormidium	Calothrix Symploca
Chlorophyceae (Green)	Closterium Hydrodictyon Spyrogyra Ulothrix	Botryococcus Cladophora Coelastrum Draparnaldia Enteromorpha Gloeocystis Microspora Tribonema Zygnema	Chlorella Crucigenia Desmidium Golenkinia Oocystis Palmella Pithophora Staurostrum Tetraedron	Ankistrodesmus Chara Nitella Scenedesmus
Diatomaceae (Diatoms)	Asterionella Fragilaria Melosira Navicula	Gomphonema Nitzschia Stephanodiscus Synedra Tabellaria	Achnanthes Cymbella Nudum	
Protozoa (Flagellates)	Dinobryon Synura Uroglena Volvox	Ceratium Cryptomonas Euglena Glenodinium Mallomonas	Chlamydomonas Hawmatococcus Peridinium	Eudorina Pandorina

\*1-2 = 0.28 – 0.55 gals/acre ft

\*2-4 = 0.55 – 1.1 gals/acre ft

\*4-6 = 1.10 – 1.56 gals/acre ft

\*5-8 = 1.65 – 2.21 gals/acre ft

## STORAGE AND DISPOSAL

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

**PESTICIDE STORAGE:** Keep pesticide in original container. Do not put concentrate or dilutions of concentrate on food or drink containers.

**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.

(Plastic containers): **CONTAINER DISPOSAL:** 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.