U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Pesticide Programs
Registration Division (7505C)
401 "M" St., S.W.
Washington, D.C. 20460

NOTICE OF PESTICIDE:

XX Registration

____ Reregistration

(under FIFRA, as amended)

EPA Reg. Number:	Date of Issuance:
41246-4	JUL 1 1999

Term of Issuance: Conditional

Name of Pesticide Product:

Liquid Copper Sulfate

Name and Address of Registrant (include ZIP Code):

Ms. Sharon Bailey Lewis
Bay Chemical and Supply Co.
P. O. Box 1160
Odem, Texas 78370

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, the above named pesticide is hereby registered/reregistered under the Federal Insecticide, Fungicide and Rodenticide Act.

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 sec. 3(c)(7)(A) provided that you:

1. Submit and/or cite all data required for registration/reregistration of your product under FIFRA sec. 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:

   a. Revise the EPA Registration Number to read,"EPA Reg.No.41246-4".

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA sec. 6(e). Your release for shipment of the product constitutes acceptance of these conditions.

A stamped copy of the label is enclosed for your records.

Signature of Approving Official:	Date:
Carl Scheffe for Cynthia Giles-Parker, Product Manager (22) Fungicide Branch, Registration Division (7505C)	JUL 1 1999

EPA Form 8570-6

LIQUID COPPER SULFATE

KEEP OUT OF REACH OF CHILDREN

DANGER!

STATEMENT OF PRACTICAL TREATMENT

IF IN EYES: Hold eyelids open and flush with a steady, gentle stream of water for 15 minutes. Get medical attention.

IF SWALLOWED: Do not induce vomiting. Drink promptly a large quantity of milk, egg whites, gelatin solution, or if these are not available, drink large quantities of water. Call a physician or Poison Control Center.

IF ON SKIN: Wash with plenty of soap and water.

IF INHALED: Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth to mouth. Ge medical attention.

Consult MSDS for additional information.

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

Product is toxic to fish UNLESS used specifically according to directions. See side panel for specific pesticide use directions.

SHIP TO

PO#:
Plant Name
Street Address
City, State Zip

Lot Number:
Net Weight:

ACCEPTED with COMMENTS In EPA Letter Dated:

JUL 1 1999

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

41246-4

This product manufactured by Bay Chemical and Supply Company Odem, Texas 78370

EPA REG. NO.
EPA EST. NO. 41246-TX-001

Environmentally Hazardous Substances, liquid, n.o.s. (Cupric sulfate) UN3077, RQ

Active Ingredient:	
Copper sulfate pentahydrate*	**25.0%**
Inert Ingredient:	**75.0%**
Total:	**100.0%**

***COPPER AS METALLIC NOT LESS THAT 6.30%**

Density **9.85 pounds per gallon**

CAS #7758-99-8

PRECAUTIONARY STATEMENTS
HAZARDOUS TO HUMANS AND DOMESTIC ANIMALS

DANGER

CORROSIVE: Causes eye damage and irritation to the skin and mucous membrane. Harmful or fatal if swallowed. Do not get in eyes, on skin or on clothing. Do not breathe dust or spray mist. May cause skin sensitization reactions to certain individuals. Applicators and other handlers must wear: long-sleeved shirt and long pants, waterproof gloves, shoe plus socks, and protective eyewear.

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 Laws 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 with these counties:

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

PLEASE NOTEBefore using this product in the above counties you must obtain the EPA Bulletin specific to your area. This 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 Endangered 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.

Storage and Disposal

PROHIBITIONS: Do not contaminate water, food or feed by storage or disposal. Open burning and dumping is prohibited. Do not re-use empty container.
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.
CONTAINER DISPOSAL: Empty drums in accordance with use directions. Reseal and offer for reconditioning or triple rinse (or equivalent). Then offer for reconditioning or recycling. Consult federal, state or local disposal authorities for approved alternative methods.

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. Larger 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 ⅛ to ½ 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 in feet 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:

$$0.000008 \times 2{,}720{,}000 = 21.75 \text{ pounds} \times \frac{1 \text{ gal LCS}}{9.86} = 2.2 \text{ gal LCS}$$

This product manufactured by
Bay Chemical and Supply Company
Odem, Texas 78370

EPA Reg. No.
EPA Est. No. 41246-TX-001

SPECIFIC RESTRICTIONS

MAXIMUM USE FOR POTABLE WATER APPLICATION IS 16 MILLIGRAMS 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 1/2 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 by which 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 reservior. Bulk Copper sulfate tank should be metered and regulated to coincide with the start of the irrigation pump. Dosage not to exceed ½ ppm CuSo4.

LIQUID COPPER SULFATE (LCS) 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 that 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.

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

*1 - 2 = 0.28 - 0.55 gals/acre ft *4 - 6 = 1.10 - 1.66 gals/acre ft

*2 - 4 = 0.55 - 1.10 gals/acre ft *6 - 8 = 1.66 - 2.21 gals/acre ft

NOTICE: BAY CHEMICAL AND SUPPLY COMPANY warrants that this product in its unopened package conforms to the chemical description on the label. THERE ARE NO OTHER WARRANTIES EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE. This warranty does not extend to the handling or use of this product contrary to label instructions or under abnormal conditions or under conditions not reasonably foreseeable to seller and buyer assumes all risk of any such use.