U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Pesticide Programs
Registration Division (7504P)
Ariel Rios Building
1200 Pennsylvania Ave., NW
Washington, D.C. 20460

NOTICE OF PESTICIDE:
___Registration
__X_Reregistration
(under FIFRA, as amended)

EPA Reg. Number:	Date of Issuance:
83918-4	AUG 24 2010

Term of Issuance:

Name of Pesticide Product:
Liquid Copper Sulfate

Name and Address of Registrant (include ZIP Code):
General Chemical, LLC
5302 County Road 2047
Odem, TX 78380

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 reregistered in accordance with FIFRA provided that you:

1) Submit and/or cite all data required for registration/reregistration review of your product when the Agency requires all registrants of similar products to submit data.

Signature of Approving Official:

Erik Kraft for

Tony Kish
Product Manager 22
Fungicide Branch
Registration Division (7504P)

Date:
AUG 24 2010

2) On the front page, active ingredients section, change the % of copper sulfate pentahydrate to "24.75%" and "other ingredients" to "75.25%". Change "inert ingredients" to "other ingredients". Change the metallic copper equivalent to "6.3%".

3) Place the First Aid section in the following order: If in Eyes, If on Skin or Clothing, If Swallowed, If Inhaled".

4) Change the Hazards to Humans and Domestic Animals section to "DANGER Corrosive. Causes irreversible eye damage. Causes skin burns. Do not get in eyes, on skin, or on clothing. Harmful if swallowed. Harmful if absorbed through skin."

5) Change the PPE section to:
"Mixers, loaders, applicators and other handlers must wear:
Coveralls over long-sleeved shirt and long pants,
Goggles or face shield,
Chemical-resistant footwear plus socks,
Chemical-resistant gloves made of any waterproof material,
Chemical-resistant apron for mixing, loading, and cleaning equipment,
and chemical-resistant headgear for overhead exposure."

6) Per the revised RED, Appendix A, the following rate restrictions must be added to the label for use of the product to control algae and any conflicting text such as "If treated water is to be used as a source of potable water, the metallic copper residual must not exceed 1 ppm" on page 4; and "USEPA Lead and Copper Rule maximum is 1.3 ppm" on page 5 must be deleted:

"The maximum application rate per application is 1 ppm.
The minimum retreatment interval is 14 days.
No more than ½ of the water body may be treated at one time. If the treated water is to be used as a source of potable water, the metallic copper concentration must not exceed 1 ppm."

7) The text "Product is toxic to fish unless used specifically according to directions" conflicts with the required text "This pesticide is toxic to fish and aquatic invertebrates" and must be deleted from the label.

8) Per the RED, the following spray drift text must be added to the label:

"Spray Drift Management

A variety of factors including weather conditions (e.g., wind direction, wind speed, temperature, relative humidity) and the method of application (e.g., ground, aerial, airblast, chemigation) can

influence pesticide drift. The applicator must evaluated all factors and make appropriate adjustments when applying this product.

Droplet Size
Apply only as a medium or coarser spray (ASAE standard 572) or a volume mean diameter of 300 microns or greater for spinning atomizer nozzles.

Wind Speed
Do not apply at wind speeds greater than 15 mph. Only apply this product if the wind direction favors on-target deposition (approximately 3 to 10 mph), and there are no sensitive areas within 250 feet downwind.

Temperature Inversions
If applying at wind speeds less than 3 mph, the applicator must determine if a) conditions of temperature inversion exist, or b) stable atmospheric conditions exist at or below nozzle height. Do not make applications into areas of temperature inversions or stable atmospheric conditions.

Other State and Local Requirements
Applicators must follow all state and local pesticide drift requirements regarding application of copper compounds. Where states have more stringent regulations, they must be observed.

Equipment
All aerial and ground application equipment must be properly maintained and calibrated using appropriate carriers or surrogates.

For aerial application:
The boom length must not exceed 75% of the wingspan or 90% of the rotor blade diameter. Release spray at the lowest height consistent with efficacy and flight safety. Do not release spray at a height greater than 10 feet above the crop canopy unless a greater height is required for aircraft safety.
When applications are made with a crosswind, the swath must be displaced downwind. The applicator must compensate for this displacement at the up and downwind edge of the application area by adjusting the path of the aircraft upwind.

For groundboom application:
Do not apply with a nozzle height greater than 4 feet above the crop canopy."

9) Per the RED, the text "For applications to waters destined for use as drinking water, those waters must receive additional and separate potable water treatment" must be added to the label.

10) To the Notice section, add "to the extent consistent with applicable law" in front of "there are no other".

A stamped copy of the label is enclosed for your records. You must submit one copy of the final printed label before you release the product for shipment. Products shipped after 12 months from the date of this letter or the next round of printing must bear the new revised label. If these EPA conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA. Your release for shipment of the product constitutes acceptance of these EPA Reg. conditions. This label supersedes all other previously accepted labels. If you have any questions please call Erik Kraft at 703-308-9358 or email at Kraft.Erik@epa.gov.

Enclosure: Product Chemistry Review
Acute Toxicology Review

LIQUID COPPER SULFATE

Certified to ANSI/NSF Standard 60

Active ingredient:
Copper sulfate pentahydrate* (CAS # 7758-99-8).....25.25%
Inert ingredient:..... 74.75%
TOTAL: 100.0%

***METALLIC COPPER EQUIVALENT, 6.36%**

Density **9.85 pounds per gallon**

KEEP OUT OF REACH OF CHILDREN

DANGER

FIRST AID	
If inhaled:	• Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably 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 15-20 minutes. • Call a poison control center or doctor for treatment advice.
If in eyes:	• Hold eye open and rinse slowly and gently with water for 15-20 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 a poison control center or doctor. • Do not give anything by mouth to an unconscious person.
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-424-9300 for emergency medical treatment information.	
NOTE TO PHYSICIAN Probable mucosal damage may contraindicate the use of gastric lavage.	

ACCEPTED
with COMMENTS
In EPA Letter Dated:
AUG 24 2010
Under the Federal Insecticide, Fungicide, and Rodenticide Act as amended, for the pesticide registered under EPA Reg. No.
23713-4

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.

For applications in waters destined for use as drinking water, those waters must receive additional and separate potable water treatment. Do not apply more than 1.0 ppm as metallic copper in these waters.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Mixers, loaders, applicators, and other handlers must wear the following: long-sleeved shirt, long pants, waterproof gloves, shoes plus socks, and protective eyewear. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry. Discard clothing and other absorbent material that have been drenched or heavily contaminated with the product's concentrate. Do not reuse them.

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.

Manufactured by:
General Chemical, LLC
5302 County Road 2047
Odem, TX 78380

EPA REG. NO. 83918-4
EPA EST. NO. 83918-TX-001

USER SAFETY RECOMMENDATIONS

Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Users should remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Users should 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

This pesticide is toxic to fish and aquatic invertebrates. Water treated with this product may be hazardous to aquatic organisms. Treatment of aquatic weeds and algae can result in oxygen loss from decomposition of dead algae and weeds. This oxygen loss can cause fish and invertebrate suffocation. To minimize this hazard, do not treat more than ½ of the water body to avoid depletion of oxygen due to decaying vegetation. Wait at least 10 to 14 days between treatments. Begin treatment along the shore and proceed outwards in bands to allow fish to move into untreated areas. Consult with the State or local agency with primary responsibility for regulating pesticides before applying to public waters, to determine if a permit is required.

Certain water conditions including low pH (≤6.5), low dissolved organic carbon (DOC) levels (3.0 mg/L or lower), and "soft" waters (i.e., alkalinity less than 50 mg/L), increases the potential acute toxicity to non-target aquatic organisms.

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 within these counties:

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

PLEASE NOTE Before using Liquid Copper Sulfate 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 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 any requirements specific to your State or Tribe, consult the State or Tribal agency responsible for pesticide regulation.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or 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. Open burning and dumping is prohibited. If these wastes cannot be disposed of 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: Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Do not re-use empty container. Empty drums in accordance with use directions. 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 mix tank. Fill the container about ten percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Reseal and offer for reconditioning or recycling. Consult federal, state or local disposal authorities for approved alternative methods.

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 are 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 that 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 the concentration until the algae is killed. **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). Do not exceed 16 ppm Liquid Copper Sulfate.

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:

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

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. 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 per 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 reservoir. Bulk Copper sulfate tank should be metered and regulated to coincide with the start of the irrigation pump. Dosage not to exceed 8 ppm $CuSO_4$ which delivers ½ ppm active copper.

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 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.

ORGANISM	1.0 – 2.0 ppm LCS	2.0 – 4.0 ppm LCS	4.0 – 6.0 ppm LCS	6.0 – 8.0 ppm LCS*
Cyanophyceae (Blue-green)	Anabaena Anacystis Aphanizomenon Gloeotrichia Gomphosphaeria Polycystis Rivularia	Cylindrospermum Oscillatoris Plectonema	Nostoc Phormidium	Calothrix Symploca
Chlorophyceae (Green)	Closterium Hydrodictyon Spirogyra Ulothrix	Botryococcus Cladophora Coelastrum Draparnaldia Enteromorpha Gloeocystis Microspora Tribonema Zygnema	Chlorella Crucigenia Desmidium Golenkinia Oocystis Palmella Pithophora Staurastrum 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

*1.0 - 2.0 ppm LCS = 0.28 – 0.55 gals/acre ft.
*2.0 – 4.0 ppm LCS = 0.55 – 1.10 gals/acre ft.
*4.0 – 6.0 ppm LCS = 1.10 – 1.66 gals/acre ft.
*6.0 – 8.0 ppm LCS = 1.66 – 2.21 gals/acre ft.

NOTICE: General Chemical, LLC 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.

5/5/10