


BEST IMAGE AVAILABLE

US ENVIRONMENTAL PROTECTION AGENCY OFFICE OF PESTICIDES PROGRAMS REGISTRATION DIVISION (75-767) WASHINGTON, DC 20480  <b>NOTICE OF PESTICIDE:</b> <input checked="" type="checkbox"/> REGISTRATION <input type="checkbox"/> REREGISTRATION <i>(Under the Federal Insecticide, Fungicide,          and Rodenticide Act, as amended)</i>	EPA REGISTRATION NO. 19713-407	DATE OF ISSUANCE FEB 19 1998
	TERM OF ISSUANCE conditional	
	NAME OF PESTICIDE PRODUCT Drexel Copper Sulfate Crystal	
NAME AND ADDRESS OF REGISTRANT (Include ZIP code)  <p style="text-align: center;">Drexel Chemical Company          P.O. Box 13327          Memphis, TN 38113-0327</p>		
<p><b>NOTE:</b> Changes in labeling formula 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 U.S. EPA registration number.</p>		
<p>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.</p> <p>A copy of the labeling accepted in connection with this Registration/Reregistration is returned herewith.</p> <p>Registration is in no way to be construed as an indorsement or approval of this product by this 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.</p> <p style="text-align: center;">This product is conditionally registered in accordance with FIFRA sec. 3(c) (7) (A) provided that you:</p> <ol style="list-style-type: none"> <li>Submit and/or cite all data required for registration/reregistration of your product under FIFRA sec. 3(c) (5) and sec. 4 when the Agency requires all registrants of similar products to submit such data.</li> <li>Make the labeling changes listed below before you release the product for shipment:             Add the phrase, "EPA Registration No. 19713-407."</li> <li>Submit one (1) copy of your final printed labeling before you release the product for shipment.</li> </ol> <p>If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6(e). Your release for shipment of the product constitutes acceptance of these conditions.</p> <p>Enclosure</p> <p><input type="checkbox"/> ATTACHMENT IS APPLICABLE</p>		
SIGNATURE OF APPROVING OFFICIAL 		DATE FEB 19 1998

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**Drexel**

**Copper Sulfate Crystal**

**ACTIVE INGREDIENT:**

Copper sulfate pentahydrate\* ..... 98.0%

**INERT INGREDIENTS:**..... 2.0%

**TOTAL:**..... 100.0%

\*Metallic copper equivalent 25.2%

**KEEP OUT OF REACH OF CHILDREN**

**DANGER/PELIGRO**

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

**Read Entire Label Before Using This Product**

**STATEMENT OF PRACTICAL TREATMENT**

**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. Do not give anything by mouth to an unconscious person.

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

**IF IN EYES:** Immediately flush eyes with plenty of water for at least 15 minutes and get medical attention.

**IF ON SKIN:** Remove contaminated clothes and shoes; immediately wash skin with soap and plenty of water and get medical attention.

EPA Reg. No. 19713-UNT  
EPA Est. No. 19713-GA-1

Net Contents: 50 Lbs. (22.68 Kg.)

Manufactured By:

Drexel Chemical Company  
P.O. Box 13327  
Memphis, TN 38113-0327  
SINCE 1972

**ACCEPTED**  
**with COMMENTS**  
**In EPA Letter Dated**  
**FEB 19 1998**

Under the Federal Insecticide,  
Fungicide, and Rodenticide Act  
as amended, for the pesticide  
registered under EPA Reg. No.  
19713-407

**PRECAUTIONARY STATEMENTS**

**Hazards to Humans and Domestic Animals**

**DANGER.** Causes severe eye and skin irritation. Harmful if swallowed or absorbed through the skin. Avoid breathing mist or dust and contact with skin, eyes or clothing. Causes substantial but temporary eye injury. May cause skin sensitization in certain individuals.

**PERSONAL PROTECTIVE EQUIPMENT**

Applicators and other handlers must wear: Long-sleeved shirt and long pants, waterproof gloves, shoes plus socks, and protective eyewear.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with 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 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 organisms. For terrestrial uses, do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Drift and runoff from treated areas may be hazardous to fish and aquatic organisms in adjacent sites. Direct application of copper sulfate to water may cause a significant reduction in populations of aquatic invertebrates, plants and fish. Do not treat more than one-half of lake or pond at one time to avoid depletion of oxygen levels due to decaying vegetation. Allow one to two weeks between treatments 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 water. However, fish toxicity generally decreases when the hardness of water increases. Do not contaminate water when disposing of equipment washwaters. Consult your State Fish and Game Agency before applying this product to public waters. Permits may be required before treating such waters.

**DIRECTIONS FOR USE**

It is a violation of federal law to use this product in 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 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, forest, 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, and protective eyewear.

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**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. Protective clothing, including goggles, should be worn.

**CONTROL OF ALGAE AND TADPOLE SHRIMP (TRIPLO LONGICAUDATUS) IN RICE FIELDS (DOMESTIC AND WILD)**

Tadpole shrimp in rice fields may be effectively controlled by the prompt and proper use of Drexel COPPER SULFATE CRYSTAL. After the rice field has been flooded to a depth of 6 to 8 inches, Drexel COPPER SULFATE CRYSTAL should be uniformly applied at a rate of 10 to 15 pounds per acre at the first sign of infestation. Following these directions carefully should keep the concentration of copper sulfate less than 10 ppm.

**SEWER TREATMENT FOR ROOT AND FUNGUS CONTROL<sup>1</sup>**

Drexel COPPER SULFATE CRYSTAL is effective in keeping sewer lines free of roots.  
**FOR PARTIAL STOPPAGE:** Add 1/2 pound of Drexel COPPER SULFATE CRYSTAL to sewer or drain and flush toward blockage with 5 gallons of water. Repeat at 6 month intervals to prevent growth of new roots.  
**FOR COMPLETE STOPPAGE:** Physically remove the root blockage and treat as FOR PARTIAL STOPPAGE.  
**FOR HOUSEHOLD SEWER:** Use 2 to 6 lbs. Drexel COPPER SULFATE CRYSTAL twice yearly in spring and early fall. Apply in toilet bowl near sewer line. Flush 1/2 lb. at a time. Or, remove the clean-out plug and pour entire quantity directly into sewer line and flush with water. Do not use in septic tank systems.

**FOR COMMERCIAL, INSTITUTIONAL AND MUNICIPAL USE**

**SEWERS:** Use 2 lbs. of Drexel COPPER SULFATE CRYSTAL each 6 to 12 months, applied to each junction or terminal manhole.  
**STORM DRAINS:** Use 2 lbs. of Drexel COPPER SULFATE CRYSTAL per drain per year. Apply during period of light flow. In dry weather, induce a flow with hose. If storm drains become almost plugged, repeat treatment 3 or 4 times at two week intervals.  
**SEWER PUMPS AND FORCE MAINS:** Place 2 lbs. of Drexel COPPER SULFATE CRYSTAL in a cloth bag at the storage wall inlet. Repeat as needed.

<sup>1</sup>State law prohibits the use of this product in sewage systems in the State of Connecticut.

**CONTROLLING WEEDS, ALGAE, AND MICROSCOPIC ORGANISMS IN IMPOUNDED WATERS, LAKES, PONDS AND RESERVOIRS**

**PRECAUTION CONCERNING FISH:** The treatment of algae with Drexel COPPER SULFATE CRYSTAL can result in oxygen loss in the water from decomposition of dead algae. This can cause the fish to suffocate. Care should be taken when water temperature exceeds 85°F. At this water temperature, aquatic plants treated with copper sulfate decompose rapidly, causing an increase in oxygen depletion. Therefore, to minimize this hazard, treat 1/3 to 1/2 of the water area in a single operation. Wait 7 to 14 days between treatments. Begin treatment along the shore and proceed outwards in bands to allow fish to move into untreated water.

**APPLICATION BY DRAGGING DREXEL COPPER SULFATE CRYSTAL UNDER WATER:** Large or small sized Drexel COPPER SULFATE CRYSTAL is placed in burlap bags or baskets and dragged through the water by means of a boat. Begin treatment along the shoreline and proceed outward until 1/3 to 1/2 of the total area has been treated. The path of the boat should insure a distribution that is even. In large lakes, the boat should move in parallel lines about 60 feet apart. Continue dragging until all of the weighed Drexel COPPER SULFATE CRYSTAL is dissolved.

**APPLICATION BY SPRAYING DREXEL COPPER SULFATE CRYSTAL SOLUTION ON WATER SURFACE:** A solution can be made with Drexel COPPER SULFATE CRYSTAL which dissolves easily in water. This solution can then be sprayed on the pond or lake surface from a boat. When using this method, the wind direction is important as well as the operation of the boat. Do not endanger people or animals in the boat with the copper sulfate spray.

**APPLICATION BY SPRAYING DRY DREXEL COPPER SULFATE CRYSTAL FROM AIRPLANES:** Professional personnel licensed by the State Agricultural Service are allowed to apply Drexel COPPER SULFATE CRYSTALS in some states.

**NOTE:** If treated water is to be used as a source of potable water, the metallic residual must not exceed 1 ppm copper. This equals 10.64 pounds per acre foot of water or 4 ppm of this product.

**HOW TO FIND THE POUNDS OF COPPER SULFATE TO ADD TO WATER**

To find acre-feet of water in a body of water, measure the depth of the body of water in feet. Calculate the surface area in square feet, divided by 43,560 (sq. ft./acre) times the average depth in feet.

- 1 acre-foot of water = Water measuring 208.7 ft. long by 208.7 ft. wide by 1 ft. deep
- 1 acre-foot of water = 43,560 cubic feet of water
- 1 cubic foot of water = 82.4 pounds
- 1 acre-foot of water = (43,560)(82.4) = 2,720,000 pounds

**COPPER SULFATE PENTAHYDRATE IN WATER**

Pounds of Copper Sulfate Pentahydrate Per Acre-Foot of Water	Parts (by weight) Copper Sulfate Pentahydrate per Million Parts (by weight) of Water	Parts (by weight) Copper per Million Parts (by weight) of Water
0.67 lb/acre-foot	= 1/4 ppm	= 0.0625 ppm
1.3 lb/acre-foot	= 1/2 ppm	= 0.125 ppm
2.6 lb/acre-foot	= 1 ppm	= 0.25 ppm
5.32 lb/acre-foot	= 2 ppm	= 0.50 ppm

**TREATMENT OF SOME ALGAE WITH COPPER SULFATE PENTAHYDRATE**

Dosage is in ppm of Drexel COPPER SULFATE CRYSTAL. A higher concentration is required if the water is hard. Consult with the State Fish and Game Agency before applying product in municipal waters.

- 0.25 to 0.50 ppm
- 0.50 to 1.00 ppm
- 1.00 to 1.50 ppm
- 1.50 to 2 ppm

**CYANOPHYCEAE ORGANISM (BLUE GREEN)**

Anabaena	Cylindrocapsa	Nostoc	Calothrix
Anacystis	Oscillatoria	Phormidium	Symploca
Aphanizomenon	Plectononema		
Gloeotrichia			
Gomphosphaeria			
Polycystis			
Rivularia			

0.25 to 0.50 ppm

0.50 to 1.00 ppm

1.00 to 1.50 ppm

1.50 to 2 ppm

**CHLOROPHYCEAE ORGANISM (GREEN)**

Closterium  
Hydrodictyon  
Spirogyra  
Ulothrix

Botryococcus  
Cladophora  
Coelastrum  
Draparnidia  
Enteromorpha  
Gloeocystis  
Microspora  
Tribonema  
Zygnema

Chlorella  
Crucigenia  
Deemidium\*  
Golenkinia  
Oocystis  
Palmella  
Pithophora\*  
Staurostrum  
Tetraedron

Ankistrodesmus  
Chara\*  
Nitella\*  
Scenedesmus

**DIATOMACEAE ORGANISM (DIATOMS)**

Asterionella  
Fragilaria  
Melorias\*  
Navicula

Gomphonema  
Nitzschia  
Stephanodiscus  
Synedra  
Tabellaria

Achnanthes  
Cymbella  
Naidium

**PROTOZOA ORGANISM (FLAGELLATES)**

Dinobryon  
Synura  
Uroglena\*

Ceratium  
Cryptomonas  
Euglena  
Glenodinium  
Mallomonas

Chlamydomonas  
Haematococcus\*  
Peridinium

Eudorina\*  
Pandorina\*

\*Not for use in California

**TO CONTROL ALGAE AND WEEDS IN FLOWING WATER**

To control potamogeton pondweeds, ~~leafy~~ and ~~sago~~, in irrigation conveyance systems, use the continuous application method, ~~selecting~~ proper equipment to supply Drexel COPPER SULFATE CRYSTALS at 0.25 to 0.5 pounds per hour for each cubic foot per second of flow for 12 hours of each 24 hours. For best control, ~~begin~~ copper sulfate additions when water is first turned into system to be treated and continue throughout the irrigation season. Copper sulfate becomes less effective for mature plants. Copper sulfate becomes less effective as the bicarbonate alkalinity increases and is substantially reduced above 150 ppm as CaCO<sub>3</sub>. Mechanical or other means may then be required to remove excess growth.

To control algae (such as filamentous green, pigmented flagellates, diatoms) in irrigation conveyance systems, begin continuous addition when water is first turned on, using suitable equipment to uniformly deliver 0.1 to 0.2 pounds of copper sulfate per hour per cubic foot per second of flow for 12 of each 24 hours.

To control algae and weeds in irrigation systems by "slug" method of addition, add 1/2 to 2 pounds for each cubic foot per second flow. Repeat every two weeks. A pile is required for every 5 to 30 miles of length depending on alkalinity of the water.

**TO CONTROL ALGAE AND BACTERIAL ODOR IN SWIMMING POOLS**

Apply 1 to 2 lbs. of Drexel COPPER SULFATE CRYSTAL per 60,000 gals. (8,000 cu. ft.) of water. This will result in a concentration of 0.5 to 1.0 ppm of dissolved copper. Dissolve the required amount of copper sulfate in a plastic container and pour the solution into the pool. Use the higher rate where visible algae are present. For maintenance dosages, use the lower rate. Repeat the lower rate to control the recurrence of algae and avoid the buildup of copper. Drexel COPPER

SULFATE CRYSTAL may be used to help control pool odors and algae during the winter months. Apply the higher rate while the pool is not being used during the winter. Treated pool effluent should not be discharged where it will drain into lakes, streams, ponds, or public water.

**TO CONTROL ALGAE AND BACTERIAL ODOR IN SEWAGE LAGOONS AND PITS**

Application rates may vary depending on amounts of organic matter in effluent streams or retention ponds. Use 2 lbs. of Drexel COPPER SULFATE CRYSTAL in 60,000 gals. (8,000 cu. ft.) of effluent to yield 1 ppm of dissolved copper. Dosage levels may vary depending upon organic load.

**OTHER ORGANIC SLUDGES:** Drexel COPPER SULFATE CRYSTAL solution must be thoroughly mixed with sludge. Dissolve 2 lbs. in 1 to 2 gals. of water and apply to each 30,000 gals. of sludge.

Useful formulas for calculating water volume and flow rates:  
Multiply the water volume in cu. ft. times 7.5 to obtain gallons.

**NOTE:** 1 C.F.S./Hr. = 27,000 Gals.  
1 Acre Foot = 325,000 Gals.

**TO CONTROL ALGAE AND BACTERIAL ODOR IN WATERSCAPES, DECORATIVE POOLS, AND FOUNTAINS**

Apply in the spring or early summer when algae and bacteria first appear. The dosages are variable and depend upon algae/bacteria species, water hardness, water temperature, amount of algae and bacteria present as well as whether water is clear, turbid, flowing or static. Preferably, the water should be clear with temperatures above 60° F. Higher dosages are required at lower water temperatures, higher algae and bacteria concentrations and for hard waters. For each 7,500 gals. of water, dissolve 1/4 lb. Drexel COPPER SULFATE CRYSTAL in one gallon of water. Pour the solution into the water to be treated. Several application points speed up dispersal. Static water requires less chemical than does flowing water. If uncertain about the dosage, begin with a lower dose and increase until control is achieved or until the maximum allowable level of copper has been reached.

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**STORAGE AND DISPOSAL**

Do not contaminate water, food, or feed by storage or disposal. Store unused product in original container only in a cool, dry area out of reach of children and animals. Store copper sulfate solution in stainless steel, fiberglass, polypropylene, PVC, or plastic equipment. So not use mild steel, nylon, brass, or copper. Keep away from galvanized pipe and nylon equipment. If container or bag is damaged, place the container or bag in a plastic bag. Shovel any spills into plastic bags and seal with tape. In the event copper sulfate solution is spilled, neutralize with limestone or baking soda before disposal. The copper sulfate solution may deteriorate concrete.

**PESTICIDE DISPOSAL:** Pesticide wastes are acutely hazardous. Improper disposal of 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. Open dumping is prohibited.

**CONTAINER DISPOSAL:** Do not reuse empty container. Completely empty liner by shaking and tapping sides at bottom to loosen clinging particles. Place the pesticide into application equipment. Then dispose of liner in a sanitary landfill or by incineration if allowed by state and local authorities. If burned, stay out of smoke.

**WARRANTY - CONDITION OF SALE**

OUR RECOMMENDATIONS FOR USE of this product are based upon tests believed reliable. Follow directions carefully. Timing and method of application, weather and crop conditions, mixtures with other chemicals not specifically recommended, and other influencing factors in the use of this product are beyond the control of the Seller. Buyer assumes all risks of use, storage and handling of this material not in strict accordance with directions given herewith.

In no case shall Draxel or the Seller be liable for consequential, special or indirect damages resulting from the use or handling of this product when such use and/or handling is not in strict accordance with directions given herewith. The foregoing is a condition of sale by Draxel Chemical Company and is accepted as such by the Buyer.

January 16, 1998