

U.S. ENVIRONMENTAL PROTECTION AGENCY OFFICE OF PESTICIDES PROGRAMS REGISTRATION DIVISION (TS-767) WASHINGTON, DC 20460 NOTICE OF PESTICIDE: <input checked="" type="checkbox"/> REGISTRATION <input type="checkbox"/> REREGISTRATION <i>(Under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended)</i>	EPA REGISTRATION NO. 34797-78	DATE OF ISSUANCE JUN 1 1987
	TERM OF ISSUANCE Conditional	
	NAME OF PESTICIDE PRODUCT Copper Sulfate Root Killer III	

NAME AND ADDRESS OF REGISTRANT (Include ZIP code)

Qualis, Inc.
4500 Park Avenue
Des Moines, IA 50321

NOTE: 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.

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.

A copy of the labeling accepted in connection with this Registration/Reregistration is returned herewith.

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.

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

1. Submit/cite all data required for registration/reregistration of your product under FIFRA section 3(c)(5) when the Agency requires all registrants of similar products to submit such data.
2. Make the labeling changes listed below before you release the product for shipment:
 - a. Add the phrase "EPA Registration No. 34797-78."
 - b. Incorporate the following statements in the Hazards to Humans section:

May cause skin sensitization reactions in certain individuals. Avoid contact with skin or clothing. Avoid breathing dust. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse.

BEST AVAILABLE COPY

ATTACHMENT IS APPLICABLE

SIGNATURE OF APPROVING OFFICIAL	DATE JUN 1 1987
---------------------------------	--------------------

c. In the Environmental Hazards section add:

This pesticide is toxic to fish. Direct application of copper sulfate to water may cause a significant reduction in populations of aquatic invertebrates, plants, and fish.

d. The EPA Establishment Number must appear on the product's labeling or container.

e. The appropriate container disposal statement must appear on the labeling in accordance with PR Notice 83-3.

3. Submit five (5) copies of your final printed labeling before you release the product for shipment. Refer to the A-79 enclosure for a further description of final printed labeling.

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.

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

Richard P. Mountfort *RM*
Product Manager (23)
Fungicide-Herbicide Branch
Registration Division (TS-767C)

Enclosures

3056

COPPER SULFATE
ROOT KILLER III
MEDIUM CRYSTALS

ACTIVE INGREDIENT:
COPPER SULFATE (PENTAHYDRATE)..... 96.9%
INERT INGREDIENTS..... 3.1%
(COPPER EXPRESSED AS METALLIC 24.6%)

FOR:

- Algae control in impounded waters, lakes, ponds and reservoirs.
- Algae control in irrigation conveyance systems using the siphon application method.
- Root growth control in sewers.
- Also for manufacturing, repackaging, formulation of algicides, fungicides, and other nonpesticidal uses.

ACCEPTED
with 1987
34797-18

KEEP OUT OF REACH OF CHILDREN
DANGER

PRECAUTIONARY STATEMENTS:

HAZARDS TO HUMANS AND DOMESTIC ANIMALS.

Corrosive. Causes irreversible eye damage. Do not get into eyes. Wear goggles or face shield. May be harmful or fatal if swallowed. *Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse.*

STATEMENT OF PRACTICAL TREATMENT:

If in eyes immediately flush eyes with plenty of water for at least 15 minutes. For eyes, call a physician. If swallowed drink promptly a large quantity of milk, egg white, or gelatin solution; if these are not available, drink large quantities of water. Call a physician immediately. 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.

ENVIRONMENTAL HAZARDS:

Trout and certain other fish species 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 the water increases. When controlling algae in impounded waters, lakes or reservoirs (not including rice fields) and the entire body of water is to be treated, treat only 1/3 to 1/2 of the water areas in a single operation and wait 10 to 14 days between treatments. Consult your State Fish and Game Agencies before applying this product, especially to public waters. Do not contaminate water by cleaning of equipment or disposal of waste.

The following statements are appropriate for manufacturing, repackaging, and formulating uses: This pesticide is toxic to fish and aquatic organisms. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or public water unless this product is specifically identified and addressed in an NPDES permit. Do not discharge effluent containing this product into sewer systems without previously notifying the sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.

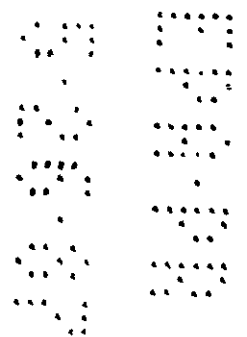
NOTE:

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

reuse
As SO₄ Standard

NET WEIGHT:
MFG. BY: QUALIS, INC.
DES MOINES, IA 50321

EPA Reg No.
EPA Est. No.



DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

STORAGE AND 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.

plastic containers

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 the 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 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 foot of water to be treated. One acre foot=one surface acre(43,560sq.ft.)X one foot of depth. Each acre 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 pound of this product for each million pounds of water) If the genera of either filamentous or planktonic algae is not known, apply 0.3 to 1.75 pounds of this product per acre foot of water, using the lower rate in soft water and the high 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.

Table with 5 columns: ORGANISM, 1/4 to 1/2 ppm*, 1/2 to 1 ppm*, 1 to 1 1/2 ppm*, 1 1/2 to 2 ppm*. Rows include Cyanophyceae (Blue green), Chlorophyceae (Green), Diatomaceae (Diatoms), and Protozoa (Flagellates).

* 1/4 to 1/2 ppm = .67 - 1.3 lbs/acre ft. * 1 to 1/2 ppm = 2.6 - 3.9 lbs/acre ft.
* 1/2 to 1 ppm = 1.3 - 2.6 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 waters by several methods to control algae. Medium crystals are usually applied by dragging them in a burlap or finer mesh bag, attaching it to the boat or float so the bag is suspended in the top foot of water until the crystals are dissolved. Determine the quantity of crystals needed to treat the problem area following directions and cautions on this label. Drag the bag of crystals first near the shoreline and continue outward with the boat traveling in parallel lines about 20 to 100 feet apart until area has been treated, or until 1/3 to 1/2 of the surface area has been treated. Continue dragging bag over treated area until the required minimum dose is applied and all crystals are dissolved. Various other application techniques may be used as long as the minimum required dose is applied uniformly to the water surface and these medium crystals are dissolved when applied to the water.

2 To control algae in irrigation conveyance systems using the slug application method. Make a dump of copper sulfate into the irrigation ditch or lateral at 1/4 to 2 pounds per cubic foot per second of water per treatment. Repeat about every 2 weeks as needed. A dump is usually necessary every 5 to 30 miles depending on water hardness, alkalinity and algae concentration. Copper sulfate becomes less effective as the bicarbonate alkalinity increases. Its effectiveness is significantly reduced when the bicarbonate alkalinity exceeds about 150 ppm as CaCO3.

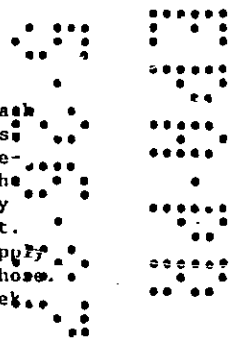
3 To control root growth in sewers:

Commercial, Institutional and Municipal Sewers use as follows:

Sewers - Use 2 pounds of these crystals every 6 to 12 months, applied into each junction or terminal manhole as a preventive measure. Add copper sulfate crystals during period of reduced flow; however, a small flow is essential. If reduced flow due to root masses is observed, but not completely stopped, add the copper sulfate in the next manhole above the reduced flow area. If completely blocked, use a rod to penetrate the mass so some flow begins before treatment.

Storm Drains - Use 2 pounds of copper sulfate crystals per drain per year. Apply during a period of light water flow in dry weather; introduce a flow with a hose. If storm drains become almost plugged, repeat treatment 3 to 4 times at 2-week intervals.

Sewer Pumps and Force Mains - Place 2 pounds of copper sulfate crystal in a cloth bag at the storage well inlet. Repeat as needed.



Residential or Household Sewer Systems:

General Information: Roots of shrubbery and trees growing near sewer lines frequently penetrate sewer lines in search of moisture and nutrients, even through extremely small cracks, holes, or poorly sealed joints. These tiny root hairs, if not controlled, will continue to grow both in diameter and number, causing tile breakage, gradual reduced flow, and frequently flow stoppage. Copper sulfate has successfully controlled roots for over 50 years in residential and commercial sewers.

Make treatment when the reduced flow rate thought to be caused by root growth is first noticed. Do not delay until stoppage has occurred because even a slight flow is needed to move copper sulfate crystals to root growth. When roots accumulate sufficient copper sulfate to cause death, root decay will begin and flow rate should increase in 3 to 4 weeks. Since copper sulfate treatment usually kills only those roots in the pipe, roots will regrow, requiring follow-up treatments. Generally make a treatment in the spring after plants begin to grow, with a second treatment during late summer or early fall each year, and/or any time when reduced flow possibly caused by root growth is noted.

How to Use Copper Sulfate Crystals: In household sewers use 2 to 6 pounds of crystals twice yearly as discussed before. Add crystals to sewer line by pouring about 1/2 pound into the toilet bowl nearest to the sewer line and flush, repeating process until recommended dose has been added, or remove cleanout plug and pour entire recommended quantity directly into the sewer line, replacing plug and flush toilet several times. NOTE: Do not apply copper sulfate through sink or tub drains as it will corrode these metal drains.

If system is equipped with a septic tank, copper sulfate will be precipitated in the septic tank and little will pass into the absorption drain field. To treat drain field pipes, add 2 to 6 pounds of crystals to distribution box located between the septic tank and the drain field. If distribution box does not have an opening, it would be advisable to install a cleanout plug opening into the outlet pipe from the septic tank leading to the drain field for effective root control in the drain field pipes.

Laboratory studies have shown that copper sulfate added to an active 300 gallon septic tank at 2, 4, and 6 pounds per treatment temporarily reduced bacterial action, but was again normal 15 days after treatment. Trees and shrubbery growing near a treated line normally will have only a small portion of its total roots in contact with the copper sulfate that primarily kills only those roots inside the pipe, thus not affecting the growing plants.

