



**KOCIDE CHEMICAL CORPORATION**  
Houston, Texas 77045

# Kocide

## COPPER SULFATE PENTAHYDRATE CRYSTALS

ACTIVE INGREDIENT  
COPPER SULFATE  
PENTAHYDRATE 99%  
INERT INGREDIENTS 1%  
TOTAL 100%

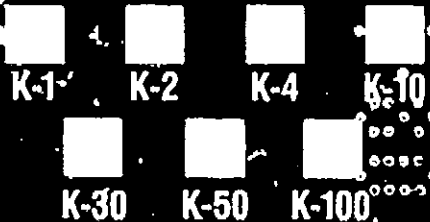
METAL CUPREOUS EQUIVALENT 25.2%

KEEP OUT OF REACH  
OF CHILDREN

**DANGER**  
EPA REG. NO. 8901-21

FOR CONTROL OF ALGAE AND  
POTOMOGETON POND WEEDS IN  
IMPOUNDED WATERS, LAKES,  
PONDS, RESERVOIRS, AND  
IRRIGATION SYSTEMS

100 LBS. NET  
CRYSTAL SIZES



SEE BACK PANEL FOR ADDITIONAL CAUTIONS



BACK LABEL — 2

feet of water volume. 4) Multiply surface area in acres by average depth and 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 Copper Sulfate Pentahydrate needed to achieve the recommended concentration, multiply the weight of water by the recommended concentration of 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, 2 ppm is the same as 0.000002 when used in this calculation. Therefore, to calculate the amount of Copper Sulfate Pentahydrate to treat 1 acre-foot of water with 2 ppm Copper Sulfate, the calculation would be as follows:

$$0.000002 \times 2,720,000 = 5.44 \text{ lbs. Copper Sulfate Pentahydrate}$$

**CALCULATION OF WATER FLOW IN DITCHES, STREAMS, AND IRRIGATION SYSTEMS:** The amount of water flow in cubic feet per second is found by means of a weir or other measuring device.

**STORAGE AND DISPOSAL:** Do not contaminate water, food, or feed by storage or disposal. Pesticide, spray mixture, or rinsate that cannot be used or chemically reprocessed should be disposed of according to procedures approved by Federal, State or Local disposal authorities. Before disposal of container triple rinse (or equivalent) and dispose of in an approved landfill or bury in a safe place. Consult Federal, State, or Local disposal authorities for approved alternative procedures.

**SPECIFIC INSTRUCTIONS**

**TO CONTROL ALGAE AND THE POTOMOGETON POND WEEDS, LEAFY AND SAGO, IN IRRIGATION SYSTEMS:**

Once the amount of Copper Sulfate required for treating ditches or streams has been calculated, use a continuous application method, selecting proper equipment to supply Copper Sulfate granular crystals as follows.

**FOR ALGAE CONTROL** — Begin continuous addition of granular Copper Sulfate when water is first turned into the system and continue throughout the irrigation system, applying 0.1 to 0.2 pounds per cubic foot per second per day.

**FOR LEAFY AND SAGO POND WEED CONTROL** — Use the same continuous feeder, applying 1.6 to 2.4 pounds Copper Sulfate Pentahydrate per cubic foot per second per day. **NOTE:** For best control of leafy and sago pond weed, it is essential to begin Copper Sulfate additions when water is first turned into the system or ditch to be treated and to continue throughout the irrigation system. Copper Sulfate becomes less effective as the alkalinity increases. Its effectiveness is significantly reduced when the bicarbonate alkalinity exceeds 150 ppm. Should Copper Sulfate fail to control pond weeds satisfactorily, it may be necessary to treat the ditch with either a suitable approved herbicide or use a mechanical means to remove excess growth. In either case, resume Copper Sulfate addition as soon as possible.

**TO CONTROL ALGAE IN IMPOUNDED WATERS, LAKES, PONDS, AND RESERVOIRS:**

There are several methods by which to apply Copper Sulfate to impounded water. Probably the most satisfactory and simplest method is to dissolve the Copper Sulfate crystals in water and to spray this water over the body of water. A small pump mounted in the boat can easily be used for this purpose. Fine crystals may be broadcast directly on the water surface from a properly equipped boat. A specially equipped air blower can be used to discharge fine crystals at a specific rate over the surface of the water. When using this method, the direction of the wind is an important factor. Do not use this method unless completely familiar with this type of application. Where the situation permits, Copper Sulfate may be applied under the water by dragging burlap bags containing Copper Sulfate. The crystals are placed in burlap bags and dragged through the water by means of a boat. Begin treatment along the shoreline and proceed outward until one-third to one-half of the total area has been treated. Care should be taken that the course of the boat is such as to cause even distribution of the chemical. In large lakes, it is customary for the boat to travel in parallel lines about 20 to 100 feet apart. Continue dragging the burlap bags over the treated area until the minimum dosage is achieved and all crystals have been dissolved. Large or medium size crystals that dissolve slowly should be used with this method.

BACK LABEL - 3

**TO CONTROL ALGAE IN RICE FIELDS:**

Application should be made when algae has formed on the soil surface in the flooded field. Applications are most effective when made prior to the algae's leaving the soil surface and rising to the water surface. Apply 10-15 pounds KOCIDE Copper Sulfate Pentahydrate to the water surface as either crystals (K-10 or K-30) or dissolve in water and make a surface spray. Apply higher rate in deeper water (6 inches or greater).

**TO CONTROL TADPOLE SHRIMP IN RICE FIELDS:**

Application should be made to the flooded fields any time the pest appears from planting time until the seedlings are well rooted and have emerged through the water. Apply 5-10 pounds KOCIDE Copper Sulfate Pentahydrate crystals (K-10 or K-30) per acre. The use rate per acre should be determined by the water depth and flow. Use the lower rate at minimum flow and water depth and the higher rate when water depth and flow are maximum.

**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 municipal waters.

ORGANISM	1/4 to 1/2 ppm*	1/2 to 1 ppm*	1 to 1 1/2 ppm*	1 1/2 to 2 ppm*
<i>Cyanophyceae</i> (Blue-green)	Anabaena Anacystis Aphanizomenon Gloeotrichia Gomphosphaeria Polycystis Rivularia	Cylindrospermum Oscillatoria Plectonema	Nostoc Phormidium	Calothrix Symploca
<i>Chlorophyceae</i> (Green)	Closterium Hydrodictyon Spirogyra Ulothrix	Botryococcus Cladophora Coelastrum Draparnaldia Enteromorpha Gloeocystis Microspora Tribonema Zygnema	Chlorella Crucigenia Desmidiium Goenkina Oocystis Palmella Pithophora Staurastrum Tetraedron	Ankistrodesmus Chara Nitella Scenedesmus
<i>Diatomaceae</i> (Diatoms)	Asterionella Fragilaria Melosira Navicula	Gomphonema Nitzschia Stephanodiscus Synedra Tabellaria	Achnanthes Cymbella Neidium	
<i>Protozoa</i> (Flagellates)	Dinobryon Synura Urolena Volvox	Ceratium Cryptomonas Euglena Glenodinium Mallomonas	Chlamydomonas Hawmatococcus Pendinium	Eudorina Pandorina

1/4 ppm 5.7-13 lbs/acre ft      1/2 ppm 2.6-3.9 lbs/acre ft  
 1/2 ppm 1.3-2.6 lbs/acre ft      1 ppm 3.9-5.32 lbs/acre ft

**NOTICE:** KOCIDE CHEMICAL CORPORATION warrants that this product in its unopened package conforms to the chemical description on the label. THERE ARE NO OTHER WARRANTIES, EXPRESS 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.