

# Crystal Plex<sup>®</sup>



## Algae Control



Treats Livestock Water Supplies

Water treated with this product may be used for swimming, fishing and irrigation.

FOR USE IN: LAKES; RESERVOIRS DESTINED FOR DRINKING WATER; SWIMMING AREAS; CANALS, DITCHES, AND LATERALS.

Active Ingredient:

*Copper Sulfate Pentahydrate (CAS #7758-99-8).....	19.8%
Other Ingredients.....	80.2%
Total.....	100.0%
*metallic copper equivalent 5.04%	

Net Contents: 1 Gallon (3.78 Liters)

**KEEP OUT OF REACH OF CHILDREN  
DANGER**

See side panels and attached insert for additional Precautionary Statements & First Aid

Distributed by: Sanco Industries P.O. Box 11617 Fort Wayne, IN 46859

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### **FIRST AID**

**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 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 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 1-800-255-3924 for emergency medical treatment information.]

NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage.

### **PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS DANGER**

Corrosive. Causes irreversible eye damage. Causes skin irritation. Do not get in eyes or on clothing. Harmful if swallowed. Harmful if absorbed through skin. Wear goggles or face shield, long-sleeved shirt and long pants, socks, shoes and chemical resistant gloves made of any waterproof material.

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.

For 24-hour assistance or information regarding spill, leak, fire, or exposure to this product, please call Chem-Tel at 1-800-255-3924.

### **ENVIRONMENTAL HAZARDS**

This pesticide is toxic to fish and aquatic invertebrates. Waters 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 ( $\leq 6.5$ ), 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.

## **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 adults, children or pets, either directly or through drift. Do not allow adults, children or pets to enter the treated areas until sprays have settled.

This product is corrosive to cotton fabrics. Do not allow clothing to come in contact with concentrate or dilution. Application, handling, or storage equipment **MUST** consist of fiberglass, PVC's, polypropylenes, viton, most plastics, or stainless steel. Never use mild steel, nylon, brass, or copper around full strength this product. Wash spray equipment after each application.

## **STORAGE AND DISPOSAL**

Do not contaminate water, food, or feed by storage or disposal.

**Pesticide Storage:** This product is a concentrate and must be stored in its original container or handled and stored as outlined above. **Do not allow this product to freeze; freezing may cause product separation.**

Keep container closed when not in use. In case of a spill, neutralize with limestone or baking soda before disposal. May deteriorate concrete.

**Pesticide Disposal:** *If partly filled* – Call your local solid waste agency for disposal instructions. Never place unused product down any indoor or outdoor drain.

**Container Disposal:** *If empty* – Nonrefillable container. Do not reuse or refill this container. Place in trash or offer for recycling if available.

## **INFORMATION**

**Do not use in residential ornamental fish ponds or other artificial aquaculture systems containing Koi or trout.**

This product is effective in controlling a broad range of algae including; *Chara*, *Spirogyra*, *Cladophora*, *Ulothrix*, and *Oscillatoria*.

In addition, this product is effective in controlling rooted and floating aquatic plants such as *Hydrilla*, *Potamogeton sp.*, and Water Hyacinth.

The formulation of this product protects against the precipitation of copper with carbonates and bicarbonates in the treated water and results in increased time of exposure for **true residual activity**. In addition, this formulation allows for application at any time - including overcast/cloudy conditions as well as **during night-time hours, weather permitting**.

Water treated with this product may be used for swimming, fishing, livestock watering, and irrigation. For best results, apply when livestock water consumption is low or watering area is not in use. This product effectively controls *Chara*, *Spirogyra*, *Cladophora*, *Ulothrix* and *Oscillatoria*; algae growth commonly found in livestock watering tanks, troughs, and ponds.

The minimum retreatment interval is 14 days. No more than ½ of the body of water may be treated at one time.

## ALGAECIDE APPLICATION

This product can be applied by simply pouring into the water, as a surface spray, or by injection. For effective control, the proper chemical concentration should be maintained for a minimum of three hours duration to assure adequate uptake. The application rates in the chart below are based on static or low flow conditions. When significant dilution occurs from inflow of untreated waters within the three-hour period the chemical may need to be metered. (See drip system application)

- Identify the algae growth present as one of the following: planktonic, filamentous, or *Chara*.
- Determine the surface area and average depth to be treated.
- Refer to the chart below to determine gallons of this product to apply per surface acre.

### CHART 1

**Application Rates**  
Amount of this product per 1,000 Sq. Ft. Surface Area

Algae Type	ppm Copper	Average Depth in Feet			
		1 ft.	2 ft.	3 ft.	4 ft.
<b>Planktonic</b>	<b>0.2</b>	<b>3.5 fl. oz.</b>	<b>6.5 fl. oz.</b>	<b>9.5 fl. oz.</b>	<b>13.0 fl. oz.</b>
<b>Filamentous</b>	<b>0.2</b>	<b>3.5 fl. oz.</b>	<b>6.5 fl. oz.</b>	<b>9.5 fl. oz.</b>	<b>13.0 fl. oz.</b>
<b><i>Chara</i></b>	<b>0.4</b>	<b>6.5 fl. oz.</b>	<b>13.0 fl. oz.</b>	<b>19.0 fl. oz.</b>	<b>25.5 fl. oz.</b>

For planktonic algae and free floating filamentous algal mats, application rates should be based on treating the upper 3 - 4 feet of water where the algae is growing. The minimum retreatment interval is 14 days. No more than ½ of the body of water may be treated at one time. Begin application near the shoreline and apply outward in bands to avoid trapping fish in coves or enclosed areas.

Before application, dilute at the rate of 1 gallon of this product in 10 gallons of water. For quickest results, apply when conditions are calm and sunny. However, this product can also be applied **during night time hours, weather permitting**. A hand or power sprayer may be used. Treat shoreline areas first and then continue treatment, as needed, into main water body.

For algaecide application in aquaculture systems such as fish ponds and fish hatcheries, do not exceed 0.4 ppm metallic copper (¼ fluid ounce of product per 265 gallons of water).

For algaecide application in waters used for livestock: For water holding or storage tanks, stock watering ponds, tanks, and troughs, apply ¼ fluid ounce of this product per 265 gallons of water (8 milliliters per 1,000 liters) to achieve the desired 0.4 PPM (mg/L) of copper for algae control. Product can be simply added to the water column (body of water) as the residual control will allow for even distribution throughout the water column. Where existing algae mats are present at time of treatment, most effective control will be obtained by breaking up mats and/or evenly dispersing diluted this product over the algae mats. Apply this product as needed to control and

prevent algae growth; more frequent applications may be needed in times of higher water temperatures.

DETERMINE VOLUME OF TANK, TROUGH OR POND WATER TO BE TREATED. Measure length (L), width (W), and average depth (D) in feet (ft.) or meters (m) and calculate volume using one of the following formulas:

\*For square or rectangular tanks, troughs and ponds:

$$L(\text{ft.}) \times W(\text{ft.}) \times D(\text{ft.}) \times 7.5 = \text{Gallons}$$

$$L(\text{m}) \times W(\text{m}) \times D(\text{m}) \times 1000 = \text{Liters}$$

\*For circular or elliptical tanks, troughs and ponds:

$$L(\text{ft.}) \times W(\text{ft.}) \times D(\text{ft.}) \times 5.9 = \text{Gallons}$$

$$L(\text{m}) \times W(\text{m}) \times D(\text{m}) \times 786 = \text{Liters}$$

### HERBICIDE APPLICATION

#### **For rooted and submerged plants**

Control of many rooted and submerged plants such as *Hydrilla* and *Potamogeton* can be obtained from use of this product to give copper concentrations at 0.4 - 1.0 ppm. Choose the application rate dependent upon the density and stage of growth and the water depth from the chart below.

#### **Application Rates Fluid Ounces of product per 1,000 Sq. Ft. Surface Area**

Growth stage Relative Density	ppm Copper	Average Depth in Feet			
		1	2	3	4
<b>(Low Density)</b>					
<b>Early Season</b>	<b>0.4</b>	<b>6.5 fl. oz.</b>	<b>13.0 fl. oz.</b>	<b>19.25 fl. oz.</b>	<b>25.5 fl. oz.</b>
<b>(Moderate Density)</b>					
<b>Mid Season</b>	<b>0.7</b>	<b>11.0 fl. oz.</b>	<b>22.5 fl. oz.</b>	<b>33.5 fl. oz.</b>	<b>45.0 fl. oz.</b>
<b>(Heavy Density)</b>					
<b>Late Season</b>	<b>1.0</b>	<b>16.0 fl. oz.</b>	<b>32.0 fl. oz.</b>	<b>48.0 fl. oz.</b>	<b>64.0 fl. oz.</b>

Before application, dilute at the rate of 1 pint of this product in 1.25 gallons (1 quart in 2.5 gallons)(1 gallon in 10 gallons) of water. Application rates for depths greater than 4 feet may be obtained by adding the rates above to give the proper depth. Do not exceed a copper concentration of 1.0 ppm copper in the treated water.

### FOR WATER HYACINTH CONTROL

The following mixture can be used as a **control** method for water hyacinth and other floating aquatic vegetation.

Mix 1 gallon of this product per 7 gallons of water. Apply directly to exposed vegetation to cover 8,700 to 20,000 sq. ft. [Mix 1 quart of this product per 1.75 gallons of water. Apply directly to exposed vegetation to cover 2,175 to 5,000 sq. ft.][Mix 1 pint per 6.5 pints of water.] Do not exceed 1 pint of this product per 1,000 sq. ft. of treated surface area. In areas of heavy infestation, multiple applications may be required. Applications may be repeated after 14 days. Non-ionic adjuvants should be used with this product to improve dispersion and/or adhesion.

## DRIP SYSTEM APPLICATION FOR FLOWING WATER

This product should be applied as soon as algae or plants begin to interfere with normal or desired water uses. Heavy infestations and flows may cause poor chemical distribution resulting in unsatisfactory control. Under these conditions, continuous feed systems offer advantage. Prior to treatment, it is important to determine the water flow rates. In the absence of weirs or flow determining devices for this information, water flow may be estimated as shown below.

*Avg. Width X Avg. Depth X Velocity in feet/sec. X 0.9 = CFS(Cubic Feet/Second)*

Velocity is the time it takes for a floating object to move a given distance. For example, if a leaf travels 6 feet across the water in 60 seconds, the Velocity equals 0.1 (6/60 = 0.1) This measurement should be made as the average of at least three determinations taken at the treatment location.

Calculate the drip rate of this product from the chart below (based on heavy algae growth).

<b>Water Flow Rate</b>		<b>Product drip rate</b>		
<b>CFS</b>	<b>Gal./Min.</b>	<b>Qts./Hr.</b>	<b>ML/Min.</b>	<b>Fl. Oz./Min.</b>
<b>1</b>	<b>450</b>	<b>1.8</b>	<b>29</b>	<b>1.0</b>
<b>2</b>	<b>900</b>	<b>3.6</b>	<b>58</b>	<b>2.0</b>
<b>3</b>	<b>1350</b>	<b>5.4</b>	<b>85</b>	<b>3.0</b>
<b>4</b>	<b>1800</b>	<b>7.2</b>	<b>113</b>	<b>3.8</b>
<b>5</b>	<b>2250</b>	<b>9.0</b>	<b>142</b>	<b>5.0</b>

**To maintain the copper level at 1.0 ppm for 4 hours**, calculate the amount of this product needed by multiplying Qts./Hr., ML/Min., or Fl. Oz./Min. by 4. The chemical must be introduced at a point of turbulence.

Place the required amount of this product into a tank equipped with a needle valve and set the drip rate as required using a stop watch and a measuring tube. Readjust as required if flows change. Distance of control will vary. Treatment points should be determined in the field and placed at the required intervals for control. Periodic maintenance treatments may be required.

For Drip-system Use in Livestock Watering Tanks: Tanks fed by a continuous flow of spring or well water may be equipped with a chemical drip system designed to meter-in this product based upon water flow rates. Systems should be adjusted to maintain a concentration of 0.4 PPM (mg/L) copper in incoming stock water. Pre-dilute by mixing 1 pint of this product with 14.25 gallons [1 quart with 28.75 gallons][1 gallon with 115 gallons] of water. Calibrate metering valve to establish a drip rate of 1 fl. oz./min. per 10 gal./min. water flow rate or 40 ml/min. per 50 L/min. water flow rate. Treat continuously or as needed to control and prevent algae regrowth.





## Is it important to know which type of algae or weed is in my pond?

**YES.** Certain types of algae require a more concentrated treatment than others. It is important to know exactly which type of algae you are treating to ensure that you do not over treat or under treat your pond. Examples of the different types of algae can be found below. Refer to this label and attached insert for appropriate use rates.

### ALGAE



**PLANKTONIC ALGAE:** Microscopic growth often visible as a greenish tinge suspended in the upper few feet of water. Severe blooms may resemble peas soup and actually thicken the water.



**FILAMENTOUS ALGAE:** Individual filaments a series of cells joined end to end that give a thread-like appearance. Often referred to as pond scum or moss. Forms surface "mats". Growth begins at the bottom and rises to the surface as a bubble-filled mass. May also form fur-like growths on logs and rocks at the bottom.



**CHARA ALGAE (*Chara vulgaris*):** Leaf-like structures whorled around hollow stem. Dense growth attached, but not rooted to bottom. May "carpet" large areas of a lake or pond bottom. Strong musky odor when crushed. May have a gritty texture due to mineral deposits on the surface. Do not confuse with higher weeds.

### SUBMERSED WEEDS



**HYDRILLA (*Hydrilla verticillata*):** Leaves whorled in groups. Hydrilla leaves have a serrated edge. Whorls of leaves are compact near the growing tips. Spacing between whorls increases further down the stem.



**PONDWEED (*Potamogeton species*):** Leaves are stiff, narrow and thread like. Stems branched with leaves alternately attached. Spreading leaves resemble a fan with an overall bushy appearance. Nutlets appear like beads on a string. Tiny green flower appears on a spike along with nutlets above the water surface.

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**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 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 1-800-255-3924 for emergency medical treatment information.

NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage.

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### STORAGE AND DISPOSAL

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Identify the algae growth present as one of the following: planktonic, filamentous, or Chara. Determine the surface area and average depth to be treated. Refer to the chart below to determine gallons of this product to apply per surface acre.

**Chart 1 Application Rates Amount of this product per 1,000 Sq. Ft. Surface Area**

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Filamentous	0.2	3.5 fl. oz.	6.5 fl. oz.	9.5 fl. oz.	13.0 fl. oz.
Chara	0.4	6.5 fl. oz.	13.0 fl. oz.	19.0 fl. oz.	23.5 fl. oz.

## PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS DANGER

Corrosive. Causes irreversible eye damage. Causes skin irritation. Do not get in eyes or on clothing. Harmful if swallowed. Harmful if absorbed through skin. Wear goggles or face shield, long-sleeved shirt and long pants, socks, shoes and chemical resistant gloves made of any waterproof material.

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**SEE ATTACHED INSERT FOR COMPLETE DIRECTIONS FOR USE AND PRECAUTIONS**

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