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# BIO TROL 20 BIO-GUARD TREATMENT FOR COOLING TOWERS & AIR WASHERS

### APPLICATION

Cooling towers provide a near-ideal environment for microbial proliferation. Warm water temperatures, nutrients, and constant exposure to the surrounding air encourage growth and virtually assure ongoing contamination by microorganisms. The U.S. Public Health Service Center for Disease Control & Prevention (CDC) has identified some of these organisms to cause human illness or death. OSHA Technical Manual Section II - Chapter 7 states that biocide control of such organisms is needed.

Unchecked microbial growth may also cause a rapid loss of heat-transfer efficiency by fouling piping, nozzles, process heat exchangers, and drift eliminators. Growth under deposits or slime masses can yield accelerated localized corrosion of system metal components. These problems, due to growth and development of algae, bacteria, and fungi greatly reduce efficiency in a system and significantly increase operating costs.

Microbial organisms in nature vary considerably as a hazard to human health and in susceptibility to any particular bactericide. CH<sub>2</sub>O's **BIO-GUARD** series offers a wide variety of biocide products, which have been shown effective against microorganisms found in cooling tower waters.

**BIO TROL 20** is: Tetrakis (hydroxymethyl) phosphonium sulfate - 20%

**BIO TROL 20** aids in controlling microbial growth in water-cooling towers, air-washers, pasteurizers, and other circulating water systems. It is effective over a wide pH and temperature range and is non-foaming.

**BIO TROL 20** is noncorrosive and does not contain heavy metals.

### SAFETY & HANDLING PROCEDURE

When handling **BIO TROL 20**, it is important to avoid contact with the liquid and inhalation of the vapors. Protective gloves, face shield or vapor-proof goggles,

### SAFETY & HANDLING PROCEDURE Continued

coveralls, and suitable respiratory protection should be worn. An eye bath and shower facility should be provided.

### DOSAGE & CONTROL

Slug Dose Method: Initially feed 40 to 155 ounces per 1,000 gallons of total water volume (350 to 1,312.5 ppm product). Thereafter, slug feed at the rate of 17 to 62 ounces per 1000 gallons, or feed continuously at the rate of 9 to 30 ounces per 1,000 gallons.

Continuous Method: Initially feed 40 to 155 ounces per 1,000 gallons of total water volume (350 to 1,312.5 ppm product). Thereafter, feed continuously at the rate of 9 to 30 ounces per 1000 gallons of make up water. Badly fouled systems must be cleaned before treatment.

Air Washers: After thoroughly cleaning the washer system, feed continuously at the rate of 40 to 110 ounces per 1,000 gallons of feed water to the washer.

Daily testing is recommended to maintain proper control. Failure to monitor and maintain treatment levels can cause damage. It is the customer's responsibility to monitor and maintain treatment levels.

### FEEDING TECHNIQUE

This product may not be used in industrial air washers and air washer systems in California. **BIO TROL 20** should be added to a water treatment system at point of uniform mixing such as the basin area. Addition may be made intermittently or continuously.

### PHYSICAL PROPERTIES

|                           |           |
|---------------------------|-----------|
| PH .....                  | 3-4       |
| Pounds per Gallon .....   | 8.9-9.4   |
| Physical Appearance ..... | Colorless |
| Odor .....                | Mild      |
| Flash Point .....         | None      |

### Seller Warranty

Applies to all products sold by CH<sub>2</sub>O, Inc., and is hereby communicated to all of its customers as a condition of sale.

Seller warrants that this product conforms to its chemical description and is reasonably fit for the purpose referred to in the directions for use when used in accordance with the directions under normal conditions. Buyer assumes the risk of any use contrary to such directions. Seller makes no other warranty or representation of any kind, express or implied, concerning the product, including **NO IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS OF THE GOODS FOR ANY OTHER PARTICULAR PURPOSE**. No such warranties shall be implied by law and no agent of seller is authorized to alter this warranty in any way except in writing with a specific reference to this warranty. The exclusive remedy against seller shall be a claim for damages not to exceed the purchase price of the product, without regard to whether such a claim is based upon breach of warranty or tort. Jurisdiction for any issues arising from or relating to this product shall be in the courts of the State of Washington and the venue shall be Thurston County. Any controversy or claim arising out of or relating to this contract, or breach thereof, shall be settled by arbitration in accordance with the rules and procedures as stated in RCW 7.06 and shall be binding upon both parties without right to appeal, and judgment upon the award rendered by the Arbitrator(s) may be entered in any court having jurisdiction thereof.

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