

## BIO-MAX 150 BIO-GUARD TREATMENT

### 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 III - 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.

### WATERBORNE PATHOGENS

Legionella bacteria and other pathogens may be present in water systems. Application of a microbicide does not guarantee the absence of such pathogens, nor is it possible or reasonable to eliminate all risk of infection. Users should develop a comprehensive water management plan in accordance with ANSI/ASHRAE Standard 188, OSHA guidelines (OSHA Technical Manual Section III: Chapter 7), and other guidelines applicable to the specific facility/system. CH<sub>2</sub>O, Inc. recommends that testing for legionella bacteria be incorporated in the facility's water management plan.

### DIRECTIONS FOR USE

**BIO-MAX 150** is a microbicide for controlling slime-forming and sulfate-reducing bacteria, fungi, yeast, and algae. For use in air washers and industrial scrubbing systems; recirculating cooling and process water systems; heat transfer systems; reverse osmosis membranes; service water and auxiliary systems; and as a preservative for concentrates. Review label for specific directions and restrictions for each of these systems.

### Seller Warranty

CH<sub>2</sub>O brand test reagent refills are available through your sales representative at no charge. Customers are required to confirm product compatibility via a control test for their specific application. CH<sub>2</sub>O recommends that you perform regular/daily testing to control chemical levels and cycles of concentration within established limits. Additional tests may be performed at your request. Test reports reflect conditions at the point when the analysis was performed. Results will change over time and with varying operating conditions.

Seller warrants that this product conforms to its chemical description and is reasonably fit for the purpose referred to in the product data sheet. Buyer is responsible to ensure that products and product dosages are appropriate for Buyer's particular application. 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.

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. Use of CH<sub>2</sub>O products is subject to the Standard Terms and Conditions as listed on CH<sub>2</sub>O, Inc.'s website at: [www.ch2o.com](http://www.ch2o.com).

### FEEDING TECHNIQUE

**BIO-MAX 150** should be added to the water treatment system at a point of uniform mixing such as the basin area. For cooling systems greater than 4000 gallons, do not apply by open pouring of liquid; a metering pump delivery system is required for this use and application method.

### SAFETY & HANDLING PROCEDURE

When handling **BIO-MAX 150**, it is important to avoid contact with the liquid and inhalation of the vapors. Review label and SDS for further details on safety and handling guidance.

### DOSE & CONTROL (cooling water systems)

Dirty systems must be cleaned prior to treatment. They can be shock treated by using the highest recommended rate of **BIO-MAX 150**. Under these conditions, blowdown should be discontinued for up to 24 hours.

Initial dose: When the system is noticeably fouled, add 40.0-80.0 fluid ounces (325-650 ppm) of **BIO MAX 150** per 1,000 gallons of water in the system. Repeat until control is achieved.

Subsequent dose: When microbial control is evident, add 16.0-40.0 fluid ounces (130-325 ppm) of **BIO MAX 150** per 1,000 gallons of water in the system per day, or as needed to maintain control.

Contact your CH<sub>2</sub>O water treatment specialist or an independent laboratory for further information on analytical testing. Daily testing is recommended to maintain proper control. Failure to monitor and maintain treatment levels can cause damage and/or health issues. In addition to monitoring and maintaining treatment levels, it is the customer's responsibility to ensure the product is fit for its intended application.

### ACTIVE INGREDIENT

1,5-Pentanedial , (glutaraldehyde) ..... 15%

### PHYSICAL PROPERTIES

pH of 1% Solution..... 2.8-5  
Pounds per Gallon..... 8.4-8.9  
Physical Appearance..... Clear, colorless to lt. yellow liquid  
Odor ..... Irritating, pungent  
Flash Point ..... >212°F