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# TEI-3 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, packing, 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.

TEI-3 is:

Trichlorosocyanuric acid

TEI-3 aids in controlling slime-forming bacteria and algae in water-cooling towers. It is effective over a wide pH and temperature range and is non-foaming. TEI-3 does not contain heavy metals.

### SAFETY & HANDLING PROCEDURE

Tablets are corrosive. Do not breathe dust, which will be irritating to nose and throat. Do not get on skin, in eyes, or on clothing. Wear goggles or face shield and rubber gloves when handling. Use respirator protection as necessary. **STRONG OXIDIZING AGENT:** Do not mix with other chemicals. Mix only with water. Always add product to large quantities of water.

### EFFECTIVE CONDITIONS

TEI-3 is effective at most pH ranges found in normally operated cooling towers. It is a very effective biocide to alternate with quaternary ammonium-based products.

### FEEDING TECHNIQUE

Add by use of a suitable erosion chlorinator with adjustable flow control. Suspend in a dissolving basket if a chlorinator is unavailable.

### DOSAGE & CONTROL

**Initial Treatment:** Place in the chlorinator, dissolving basket or sump, 1 ounce of TEI-3 for each 1,000 gallons of water in the system. TEI-3 should be placed in an area of constant water flow. Open the control or erosion chlorinator to maximum until 1.0 part per million chlorine residual is obtained. Adjust flow or add TEI-3 to maintain chlorine at 1 to 2 parts per million until fouling is gone. **Continuous Treatment:** Adjust flow through erosion chlorinator to maintain available chlorine reading at 0.5 to 1.0 parts per million or keep the proper amount of TEI-3 in the dissolving basket or sump to maintain a 0.5 to 1.0 parts per million available chlorine for one hour. 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.

### INTERMITTENT TREATMENT:

This is most easily done with an erosion chlorinator. One to three times daily, establish a 1.0 ppm available chlorine reading in the recirculating water and maintain a 0.5 to 1.0 parts per million level of available chlorine for one hour. 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 with support from a CH<sub>2</sub>O sales representative.

### PHYSICAL PROPERTIES

pH of 1% Solution ..... N/A  
Physical Appearance ..... White Tablet  
Odor ..... Chlorine  
Flash Point ..... N/A

### **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.

April 20, 1998 (Rev. 09-11)

