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# 6212

## BOILER WATER TREATMENT

### EXCESS PHOSPHATE METHOD

#### APPLICATION

Mineral crystallization on boiler heat-transfer surfaces is the chief cause for boiler tube failures. Loss of heat conduction causes loss of heat-transfer efficiency and will cause excessive energy consumption. If mineral deposits are formed, high exhaust gas and metal surface temperature increases will be observed. These elevated temperatures cause increased consumption of energy and may cause metal-stress failure from excessive heat.

Mineral deposits can be controlled by precipitation methods. The central strategy is to precipitate the hardness metals before contact with heat-transfer surfaces. Numerous phosphorous compounds have been utilized to react with calcium and other metal ions to form highly insoluble precipitates. After the phosphate reaction, the insoluble precipitate is held in colloidal dispersion by the presence of organic materials. Several natural and synthetic organic compounds have been used successfully for dispersing phosphate precipitates.

Product **6212** is a phosphate precipitant formulated to meet the needs for boiler excess phosphate treatment programs, especially boilers where the boiler feedwater has high mineral content. Product **6212** has the ability to sequester hardness initially in the feedwater. When it is heated within the boiler, it converts to orthophosphate, which reacts rapidly with hardness minerals and forms an insoluble precipitate. The mineral precipitate is readily dispersed by adjunct mineral dispersants.

#### SAFETY & HANDLING PROCEDURE

This product is a mildly alkaline liquid. It can be safely handled using the standard precautionary measures associated with handling industrial chemicals of this type.

#### FEEDING TECHNIQUE

Inject directly into the feedwater line, makeup water line, or boiler.

#### CONTROL

Maintain a residual of 30 to 60 parts per million of orthophosphate in the system at all times. Contact your CH<sub>2</sub>O water treatment specialist for further information on analytical testing. Daily testing is recommended to maintain proper control. Failure to monitor and maintain treatment levels can cause damage. In addition to monitoring and maintaining treatment levels, it is the customer's responsibility to ensure the product is fit for its intended application.

#### DOSAGE

Initially charge the system at 1 to 1.5 pints per 1,000 gallons of water to be treated. Reduce maintenance feed rate with respect to cycles of concentration being maintained in the system.

#### PHYSICAL PROPERTIES

pH of 1% Solution ..... 6.0-8.0  
Pounds per Gallon .....9.7-10.2  
Physical Appearance .....Clear Liquid  
Odor ..... Mild  
Flash Point.....NA

#### 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).



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