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# 6090 BOILER WATER TREATMENT ALKALINITY BUILDER

**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 may cause excessive energy consumption. If mineral deposits are formed, high exhaust gas and metal surface temperature increases will be observed where combustion fuel-to-air ratios are constant. Elevated temperatures can cause metal failure as well as increase consumption of energy. In either case, loss of efficiency can lead to a complete system shutdown.

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 as the precipitant due to the high insolubility of calcium and other metal phosphates. This phosphate program requires a high level of alkalinity to promote the formation of hydroxy apatite and brucite precipitates. Also, high alkalinity levels help keep silica minerals dissolved in the boiler water.

Product 6090 is a high quality alkalinity builder. It is used as an adjunct component for phosphate precipitation treatment programs. It is also used in other applications where a high quality pH builder is required. Product 6090 is compatible with all of CH<sub>2</sub>O's excess phosphate program components. Selection of this product for phosphate excess programs usually finds application in large boilers where the boiler makeup water has moderate to high mineral content.

**SAFETY & HANDLING PROCEDURE**

This product is an extremely alkaline powder. Wear safety goggles and face shield, rubber apron, cotton or polyester long-sleeved shirt when handling. Never touch

**SAFETY & HANDLING PROCEDURE (CONTINUED)**

eyes or face with hands or gloves that may be contaminated with product. If exposed to product, wash immediately with large amounts of fresh water and call a physician if irritation persists.

**FEEDING TECHNIQUE**

SEE MATERIAL SAFETY DATA SHEET BEFORE USING THIS PRODUCT! Carefully mix with cool water in a well-agitated tank. Dissolve slowly to avoid heat buildup. Inject directly into the feedwater line, makeup water line, or boiler.

**CONTROL**

Maintain a residual of 500 to 700 parts per million of p-Alkalinity 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. It is the customer's responsibility to monitor and maintain treatment levels.

**DOSAGE**

Initially charge the system at 3 to 4 ounces per 1,000 gallons of water to be treated. This will yield an increase in p-Alkalinity of about 30 ppm, which will cycle with the boiler water. Adjust dose as necessary to maintain proper range of p-Alkalinity.

**PHYSICAL PROPERTIES:**

pH of 1% Solution .....	12.5-13.5
Pounds per Gallon .....	NA
Physical Appearance .....	White Non-Dusting Beads
Odor .....	None
Flash Point .....	N/A

**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 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.

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).

