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**Product
Bulletin**

CLEAN-N-FLUSH EQUIPMENT CLEANER

APPLICATION

Solid materials may be present in boilers, hydronic loops, heat exchangers, and processing equipment in the form of deposits and loosely bound particles. When they exist in sufficient amounts, circulation may be retarded. Deposits and accumulations of these materials on heat-transfer surfaces cause operating energy losses. Boilers and hydronic loops are typical of heat-transfer processes that are affected. In the case of process circulating water, deposits promote "under deposit corrosion" which can rapidly destroy valuable equipment.

Mineral deposits can be mobilized and removed from operating equipment by a variety of effective chelants, polymeric dispersants, and mineral acids. Selection of which to use is important. The product must be strong enough to dissolve the deposits, yet, not so strong as to cause damage to the equipment being cleaned. The strong mineral acids available will cause damage to typical materials of construction if used to excess or without expensive corrosion inhibitors. Polymeric dispersants and chelating materials, however, are effective on some deposits without the serious harmful potential of mineral acids. Successful experiences with these safer materials show effective removal of commonly found corrosion products such as iron and calcium deposits.

CLEAN-N-FLUSH is a blend of polymeric and chelating agents that will preferentially remove iron oxides and will assist in softening light calcium deposits. Although the materials selected for use in the product are strong chelates and dispersants, they will have little or no effect on ferrous and copper alloys. A deposit that is primarily silicate-based is not a good candidate for removal with **CLEAN-N-FLUSH**.

SAFETY & HANDLING PROCEDURE

CLEAN-N-FLUSH has a neutral pH. It is relatively safe to handle. However, it should be handled with caution, making sure to avoid chemical contact with eyes or skin. Wash any exposed areas immediately with fresh water. Remove and launder contaminated clothing before reuse.

SPECIFIC USE

CLEAN-N-FLUSH is designed to remove primarily iron-based deposits, although it can remove some carbonates as well. Typical use is to "clean and flush" systems which have been neglected and where significant corrosion products have accumulated.

DOSAGE

For badly fouled systems, add **CLEAN-N-FLUSH** to the system at a rate of 2 gallons per 1,000 gallons of system capacity during operation. Care should be taken to avoid flow obstruction. Side-stream filters should be operational prior to addition. Subsequent additions should be made every other day for three to five additions, or as required to adequately clean the system.

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.

The system should be operated for 1 to 4 weeks, then followed by a thorough drain and flush procedure.

PHYSICAL PROPERTIES

pH of Solution 6.0-8.0
Pounds per Gallon 10.5-11.0
Physical Appearance Bright Green Liquid
Odor Mild
Flash Point NA

Seller Warranty

CH₂O 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. CH₂O 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 CH₂O, Inc., and is hereby communicated to all of its customers as a condition of sale. Use of CH₂O products is subject to the Standard Terms and Conditions as listed on CH₂O, Inc.'s website at: www.ch2o.com.



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