### **Product Data**

## **FORMULA 1590**

**COOLING WATER MICROBIOCIDE**

#### DESCRIPTION AND USE

FORMULA 1590 is a unique stabilized liquid bromine-based microbiocide for use in once-through industrial cooling water systems, open recirculating cooling tower and evaporative condenser water systems, decorative fountains, industrial air scrubbers, pulp and paper mill systems and wastewater systems. The product can be applied as a stand-alone biocide program, but is typically applied in combination with a biodispersant or intermittent feed of a non-oxidizing microbiocide. The *"stabilizing"* effect of FORMULA 1590 enables this product to provide superior control of biofilm (and removal of existing biofilm) compared to conventional halogen products.

CHEMICAL FEEDING AND CONTROL

FORMULA 1590 is fed much like feeding bleach. A pump with an auto-degassing wet end is recommended to ensure reliable pumping, especially where environment conditions are variable. The suggested initial feedrate dose is 4.5 oz to 9.1 oz of product per 1000 gallons of system volume if fed continuous or 2.8 oz to 5.8 oz per 1000 gallons of system volume if slug fed intermittantly. The recommended residual control to start is "='2 ppm total bromine as Br if fed continuous or 4-6 ppm total bromine as Br if slug fed intermittantly. The final maintenance feed rate will vary depending upon system operating conditions and can be specified by the technical representative servicing the facility. This neat product is compatible with various plastic materials including HOPE, PP, EPDM, PTFE, Tygon, Hypalon, vinyl tubing, PVC & Viton. At recommended use concentration, this product is compatible with the commonly used materials of construction in cooling towers.

Site specific experience based on microbiological and fouling indicators should be used to optimize the dosage and residual target. Conventional total halogen tests can be used to measure residual. Note, multiply the test results as CI2 by 2.25 to convert to residual as Br. There are various microbiological and fouling monitoring methods. Specific feed rate and monitoring methods must be specified by the technical service representative.

##### **TYPICAL PROPERTIES**

 Appearance Clear yellow to clear orange liquid

#  Odor Mild, sweet fragrance

 Boiling Point 214 - 216°F

 Specific gravity 1.31 - 1.37

 pH (undiluted) 12.4 - 13.7

 Freeze Point 31.5ºF

 Vapor Pressure 19mm Hg at 77°F

SAFETY AND HANDLING

Do not take FORMULA 1590 internally. If ingested, drink at least two (2) glasses of water and get immediate medical attention. Contact with eyes will cause burns. If eyes are contacted, immediately flush with clean water for 15 minutes and get medical attention. Direct contact with the skin will cause burns. For skin contact, flush with water while removing contaminated clothing and get immediate medical attention. For additional information, see the Material Safety Data Sheet provided with this product.

###### PACKAGING

FORMULA 1590 is packaged in 55, 3D, 15 and 5 gallon plastic containers and one-way 275 gallon totes. Returnable 55 and 30 gallon drums and totes are available by special order.

07/23/01