

dilution. For microbicides prepared by dilution of NABE-M with water, the amounts employed for different applications will, of course, depend upon the concentration of active ingredients in the final product. NABE-M and dilutions of this product can be fed into systems by means of chemical-metering pumps or can be dispensed in suitable measuring containers. In the following all references to the amounts recommended for different applications are based on concentrated NABE-M containing 35 percent active ingredients.

Cooling Water Systems

As a general rule, it is recommended that before treatment of a cooling water system with NABE-M is begun, the system should be cleaned thoroughly to remove all old algal growths, microbiological slime, and other deposits. The system then should be drained, flushed, and refilled with fresh water and regular treatment with NABE-M initiated.

To control the growth of algae, bacteria, and fungi on cooling towers, in heat exchangers, and in other parts of recirculating cooling water systems, NABE-M is used at concentrations of 5 to 30 parts per million (p.p.m.) by weight or 0.5 to 3.0 U.S. fl. oz. of NABE-M per 1,000 U.S. gal. of water in the system. However, an initial addition of 15 to 30 p.p.m. NABE-M, based on the total weight of water in the system (1.5 to 3.0 U.S. fl. oz. of NABE-M per 1,000 U.S. gal. of water) is recommended. Subsequent additions of 5 to 30 p.p.m. NABE-M (0.5 to 3.0 U.S. fl. oz. of NABE-M per 1,000 U.S. gal. of water) should be made at 1 to 5 day intervals, depending on the amount of blowdown or bleedoff and the severity of microbiological fouling.

Other Industrial Water Systems

NABE-M can also be used in the treatment of other industrial fresh-water and process-water systems to inhibit the growth of algae, bacteria, and fungi. However, it should not be added to water intended for drinking or bathing. Before starting treatment with NABE-M, industrial water systems should be thoroughly cleaned mechanically or with a hot cleaning solution or both. A suitable cleaning solution can be prepared by adding 7.5 kg. of caustic soda and 1 liter of DMAD or 2 liters of SADA to each cubic meter of water (60 lb. of caustic soda and 1 U.S. gal. of DMAD or 2 U.S. gal. of SADA to each 1,000 U.S. gal. of water). (DMAD and SADA are dispersants manufactured by Buckman Laboratories.)

After the system has been cleaned and then flushed with fresh water, periodic addition of 5 to 30 p.p.m. NABE-M (0.5 to 3.0 U.S. fl. oz. of NABE-M per 1,000 U.S. gal. of water) should be made as required to maintain effective control of microbiological fouling by algae, bacteria, or fungi. Methods and frequencies of treatment with NABE-M are similar to those described for treating cooling water systems.

Recommendations given in this bulletin are based on tests believed to be reliable. However, the use of the product is beyond the control of Buckman Laboratories, Inc., and no guarantee, expressed or implied, is made as to the effects of such or the results to be obtained if not used in accordance with directions or established safe practice. The user must assume all responsibility, including injury or damage, resulting from misuse of the product as such or in combination with other materials. This bulletin is not to be taken as a license to operate under or a recommendation to infringe any patent.

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