



application data

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 UNDER THE FEDERAL INSECTICIDE
 FUNGICIDE AND RODENTICIDE ACT
 FOR ECONOMIC POISON REGISTERED
 UNDER NO.

DIRECTIONS FOR TREATMENT OF WATER SYSTEMS CONTAINING *Legionella pneumophila* WITH BETZ SLIMICIDE 508 (EPA REGISTRATION NO. 3876-95)

"Legionnaires' Disease" (legionellosis) is a pneumonia-like malady, getting its name from the highly publicized outbreak at the 1976 American Legion Convention in Philadelphia.¹ The U.S. Public Health Service Center for Disease Control (CDC) in Atlanta and other researchers have established that the disease is caused by a gram-negative bacterium that has been named *Legionella pneumophila*.^{1, 2, 3} This organism has been isolated from dirt, ponds, streams, air and from industrial water systems such as recirculating water cooling towers and evaporative condensers, which provide the opportunity for human contact on a daily basis.^{2, 4}

The exact route of human infection has not been determined and the information gathered to date does not incriminate any specific land area, body of water, or industrial or domestic water system as a single major contributing factor in the spread of this disease. Occurrences of legionellosis have been demonstrated in buildings which have cooling towers or evaporative condensers as part of their air-conditioning systems where *L. pneumophila* has been isolated from the cooling water.^{2, 4, 5} However, the disease has also occurred in buildings and under other circumstances apparently unrelated to cooling towers.^{2, 4} Although cooling towers have not been linked positively to the transmission of the disease, and the degree to which *L. pneumophila* should be controlled to prevent its transmission to man has not been determined, it seems prudent to minimize the growth and development of this organism and the accretion of other species of microorganisms in recirculating water cooling towers, evaporative condensers and in other water systems. Good housekeeping and water treatment practices, including the judicious application of effective biocides, will minimize the possibility of these units serving as a route of transmission.

The Center for Disease Control (CDC) and other researchers have studied the susceptibility of *L. pneumophila* to biocides recommended for inhibiting biological growths in cooling and other water systems.^{4, 5} One of the compounds evaluated was 2, 2-dibromo-3-nitropropionamide (DBNPA), the active ingredient in BETZ Slimicide 508. These laboratory studies demonstrated that the concentrations of BETZ Slimicide 508 used for the control of slime in industrial cooling water systems were effective in controlling *L. pneumophila* within a

reasonable treatment period. Therefore, based on these laboratory results, BETZ Slimicide 508 should effectively reduce the population of *L. pneumophila* that may be present in cooling water systems when applied according to the following schedule.

Since diverse physical, chemical and biological conditions that may exist in operating cooling water systems can affect bactericidal action, it is recommended that the cooling water system be analyzed for the presence of *L. pneumophila* prior to and after treatment.

INITIAL DOSE

Apply BETZ Slimicide 508 as a slug dose at the rate of .834 to 1.25 lbs. (10.05 to 15.06 fl. oz.) per 1000 gallons of water in the system or at a rate of 100 to 150 ppm based on the volume of the system. The cooling water should be checked for the presence of *L. pneumophila* at three, six and twenty-four hours after treatment. If viable cells are found, the treatment should be repeated, preferably at the maximum allowable dosage rate. The system should be rechecked for presence of the organism at the intervals stated above. Repeat until control is achieved. After treatment, remove all deposits from the tower super-structure and from the sump.

SUBSEQUENT DOSE

The system should be kept clean after the initial treatment. Apply BETZ Slimicide 508 to the clean system intermittently or continuously at a rate of .20 to .98 lb. (2.41 to 11.81 fl. oz.) per 1000 gallons of water in the system, or at a rate of 24 ppm to 118 ppm based on the volume of the system.

This treatment may not prevent reinfection of the system. To insure the absence of *L. pneumophila*, the system should be checked at appropriate intervals using an appropriate recovery technique for the organism.^{2, 4, 5}

REFERENCES

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