

Technical Data Sheet

Millcide Air-conditioner Disinfectant



Millcide air conditioner disinfectant is a unique blend of products that assists with the control of *Legionella pneumophila* in motor vehicle and building air conditioner systems.

Legionella pneumophila is ubiquitous in aquatic environments and may serve as a source of human infection when found in association with air conditioning machinery, cooling towers, and water systems in large buildings.

Rigorous regimes of temperature control and chemical treatment of cooling towers are generally employed to combat the presence of micro-organisms, but have failed to totally eradicate *Legionella sp.* from such plants.

One identified cause of Sick Building Syndrome (SBS), and other Building Related Illnesses (BRI), is the spread of infectious diseases from and through aquatic cooling systems. One common building related disease is Legionnaire's disease (or Legionellosis), caused by *Legionella pneumophila*. Legionellosis is a potentially fatal bacterial pneumonia that may involve the gastrointestinal tract, kidneys, and central nervous system. Further symptoms of Legionellosis may involve chills, fever, headache and muscle pain. In many cases of outbreak of Legionellosis, the bacteria have been traced to aerosols generated from cooling towers, evaporative condensers and air conditioning systems.

Biocides are commonly used to prevent and control such bacteria. However, given that bacterial contamination is often related to aqueous aerosol generation, the following cautionary statements should be borne in mind when considering any biocide based remedial treatment;

1. The European Community in its report "Sick Building Syndrome" is quite emphatic when it states that biocides currently used in most cold water spray humidifiers to control microbial growth are highly irritating in concentrated form and may cause mucous membrane irritation when dispersed in indoor air at low concentrations, especially in susceptible individuals.

2. The American Conference of Governmental Industrial Hygienists (H. A. Burge et al., 1989) states "the aerosolisation of anti-microbial chemicals into the occupied space must be avoided".

Activity of Millcide against *Legionella pneumophila*

Independent bodies, as summarised below, have determined the activity of **Millcide**:

Regional Public Health Laboratory, East Birmingham Hospital, Birmingham, UK

J. Barker et al in *Journal of Applied and Environmental Microbiology*, August 1992, p. 2420-2425

Primary conclusions were:

- The study showed PHMB (active ingredient in **Millcide**) to be a potential biocide for effective water treatment, with useful activities against *Legionella sp.* in all physiological states

- PHMB has significant activity against both the host amoeba and the amoeba-grown *Legionella pneumophila*
- The activity of PHMB was significantly greater than isothiazolinones - CMIT also studied
- The concentration used for treatment for CMIT was 16µg/ml, higher than the concentration generally used in water treatment (ca. 10µg/ml); the treatment concentration for PHMB was 2µg/ml
- The Minimum Inhibitory Concentration (MIC) of PHMB against *Legionella pneumophila* released from a bio-film consisting of *Acanthamoeba polyphaga*, after 5 days exposure, was shown to be 0.6µg/ml

Public Health Laboratory, Royal United Hospital, Bath, UK

Study conducted on behalf of Arch

- Study showed **Millcide** to be effective at 200ppm product against the following range of Legionella strains: *L. pneumophila*, *L. micdadei*, and *L. gormanii*
- **Millcide** was effective at 500ppm product against *L. bozemanii*
- A further study, using the same experimental approach adopted for **Millcide**, gave MIC values for a cationic polyquaternary ammonium compound of between 400ppm and 800ppm

Guide Millcide Treatment Level

Available data demonstrates that **VANTOCIL IB** is effective against *Legionella pneumophila*, even in a bio-film consisting of *Acanthamoeba polyphaga*, at 200ppm product (40ppm PHMB active).

The recommended treatment concentration for **Millcide** (as product) is:

=> 25-50ppm maintenance dose

=> 150-200 ppm shock dose

The above information and guide treatment concentration provide an indication of the intrinsic biocidal activity of **Millcide**. However, it is recommended that tests under practical conditions be undertaken to determine the most cost-effective dose for your application.

The product is package sin 25 liter poly cans and a dilution of 1:10 is recommended to achieve a 200 ppm shock treatment.

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CHEMICALS

SAFE HANDLING INFORMATION

Refer to the Material Safety Data Sheet (MSDS) available from Envirotan for information on the safe use, handling and disposal of this product.

FOR YOUR PROTECTION

Envirotan warrants that this product conforms to the chemical description on the label and that it is reasonably fit for the purposes stated on the label when used in accordance with Envirotan's directions under normal conditions of use. This warranty does not extend to the use of this product contrary to label instructions, or under abnormal use conditions, or under conditions not reasonably foreseeable to Envirotan, and the buyer or user assumes the risk of any such use. ENVIROTAN DISCLAIMS ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY.

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