

Spectrus* TD1100E

non-oxidising microbiological control agent liposome-enhanced biocide

Water Technologies & Solutions fact sheet

- Patented, biofilm-penetrating biocide
- Unique biocide delivery technology targets biofouled surfaces for
 - Improved heat transfer rates
 - Reduced Microbiological Induced Corrosion
 - Mitigation of Legionella-related health risks
- Based on a synergistic actives mix
- Effective over a wide pH range
- Water-based
- Non-foaming

description and use

Spectrus TD1100E is a proprietary water based blend of non-oxidising biocides which is used to control microbial populations in open evaporative cooling systems.

Spectrus TD1100E is not a conventional non-oxidising biocide. Spectrus TD1100E incorporates new technology that permits direct targeting of biofouled surfaces and facilitates biocide penetration of biofilms – highly organized communities of microbes attached to wetted and submerged surfaces that cause biofouling. This targeted delivery capability is based on the use of microbe-scale encapsulating particles (liposomes). This encapsulating agent has an affinity for biofilms and microbial membranes and so enables neat product delivery -at original actives concentration – directly to biofouled surfaces. As a result, users will benefit from a biofouling improved control compared to unencapsulated biocides with the same actives as this product. Further, encapsulated biocide use is more efficient because a high concentration of biocide is

achieved at bio-fouled surfaces without applying a similar high concentration to the entire water volume. That is, less chemical handling and lower environmental footprint.

Biofouling in cooling system can provide an ideal environment for proliferation of *Legionella* bacteria, the cause of Legionnaires disease. The actives in Spectrus TD1100E have proven effective against *Legionella* bacteria in laboratory tests. However, chemical treatment alone will not be effective in reducing health hazards associated with *Legionella* bacteria. System design, location, maintenance practices and awareness of personnel are essential elements of a successful risk reduction programme.

Effective microbiological control in cooling systems requires managing free-floating (i.e., planktonic) and attached (i.e., sessile, also called: biomass) microbes. Sessile populations are typically more difficult to control than planktonic populations yet control of these forms is essential for the prevention of biofouling. Biofouling of heat exchange equipment, tower fill and transfer lines that causes a variety of problems including reduced tower cooling efficiency and decreased heat transfer rates that lead to higher energy costs and/or reduced process throughput.

Biofouling can also damage equipment through microbiologically influenced corrosion (MIC) and force unscheduled shutdowns, or extended turnarounds, resulting in lost production.

Targeted biocide delivery technology found in Spectrus TD1100E enhances biocide efficacy against sessile organisms and the biofilms they form. At a given biocide dosage level, greater reductions in biofouling populations are achieved than without encapsulation. The net result is a better biological

control leading to improved heat transfer rates, reduced incidences of MIC, and a lower potential for development of pathogens such as Legionella bacteria. At the same time, biocide product consumption and environmental impact are reduced.

typical applications

Spectrus TD1100E is typically used on an intermittent basis, and may be used in a programme which includes oxidising biocides.

Spectrus TD1100E is applied as a disinfectant, fungicide and/or slimicide for commercial and industrial recirculating cooling water systems. It also controls bacterial, fungal and algal slimes in air washers and, food and beverage and industrial process pasteurisers, and influent water systems.

treatment and feeding requirements

Proper treatment levels and frequency of addition of Spectrus TD1100E depend on many factors, such as system cleanliness, microbial species, nutrient concentration, system half-life, and conditions particular to a given installation. The product should be used in accordance with control procedures that SUEZ establishes for a specific application.

Equipment recommendations are available upon request.

general properties

Physical properties of Spectrus TD1100E are shown on the Material Safety Data Sheet, a copy of which is available on request.

packaging information

Spectrus TD1100E is a liquid and is available in a variety of containers. Contact your SUEZ representative for details.

storage

Store Spectrus TD1100E at moderate temperatures and protect from freezing. If frozen, thaw completely and mix thoroughly prior to use.

safety precautions

A Material Safety Data Sheet containing detailed information about this product is available on request.

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