



Spectrus™ NX1101 Microbiological Control Agent

- Broad spectrum antimicrobial
- Patented blend minimizes microbial resistance
- Synergistic with halogens
- Effective at high pH
- Reduced environmental impact
- Improved safety features
- FDA Approved (CFR 176.300)
- USDA Approved (G-5, G-7)

DESCRIPTION AND USE

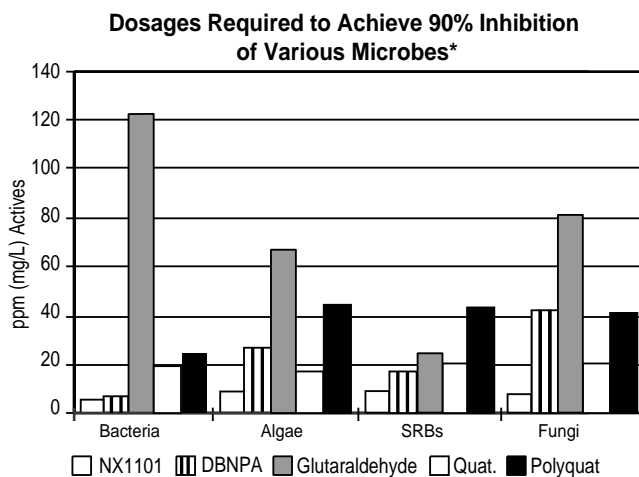
Spectrus™ NX1101 is EPA approved for control of bacteria, algae, and fungi in a variety of industrial, water-based systems. Spectrus NX1101 consists of a patented blend of 5.3% 2-bromo-2-nitropropane-1,3-diol (BNPD) and 10% quaternary ammonium hydrochloride (Quat).

Spectrus NX1101 is approved for use in open recirculating cooling systems, heat exchange systems and evaporative condensers.

Control of microbiological populations in industrial water systems is essential to prevent biofouling. In cooling systems, biofouling of heat exchange equipment and tower fill reduces heat transfer efficiency and can force unscheduled shutdowns and extended turnarounds, leading to lost production. Equipment can also be damaged as a result of microbiologically influenced corrosion (MIC) associated with biofouling. Consequently, biofouling must be prevented in order for operating units to avoid such events and achieve profitability goals.

Spectrus NX1101 can also be used to control microbes in influent water systems, pasteurizers, and water-based scrubbers. See the Spectrus NX1101 product label for a complete listing of approved end uses.

Compared to single active biocide products, the combination of metabolic inhibitor (BNPD) and surface



(* Based on lab studies using pure cultures; lowest dosage indicates superior performance.)

active agent (Quat.) in Spectrus NX1101 work together to provide faster microbial control at lower dosages (see chart). The blend of actives in Spectrus NX1101 also limits development of resistant microbial populations and reduces the need to alternate products to maintain effectiveness.

The active ingredients in Spectrus NX1101 have been shown to provide enhanced microbial control over a wide pH range. Product performance is excellent even under alkaline conditions. Chlorine or bromine based biocide programs also benefit from use of Spectrus NX1101. The surface active nature of the Quat component aids removal of deposits from surfaces while the BNPD molecule is synergistic with oxidizing halogens giving a higher level of microbial kill.

The toxicology of the actives in Spectrus NX1101 has been well studied and this product poses a greatly reduced health risk compared to many water treatment biocides. Spectrus NX1101 is water-based, which means it is easier to store and handle than solvent-based formulations. In the environment, both Spectrus NX1101 actives undergo natural degradation which reduces their toxicity to non-target organisms.

TREATMENT AND FEEDING REQUIREMENTS

Correct treatment levels and frequency of Spectrus NX1101 addition depend on many factors. These include, but are not limited to, system cleanliness, types of microbes, nutrient concentrations, temperature, pH, retention time, and other system operating characteristics. Consult the product label for general dosage guidelines. Microbiological monitoring is recommended to evaluate product requirements. Consult your GE Betz representative for technical advice on your specific application.

In all cases, this product must be applied in accordance with use instructions on the Spectrus NX1101 label.

Feed point - Apply Spectrus NX1101 to a point in the system where turbulence and flow patterns assure good mixing with the water being treated.

Dilution - This blended product is best fed neat (undiluted) from the storage container.

Compatible Materials - Spectrus NX1101 is compatible with the following materials of construction: Hastalloy 825; High Density Cross-linked Polyethylene; Teflon; PVC; Neoprene; Buna N; Buna S; Litharge Viton; Ethylene Propylene Resin; Hypalon.

Avoid: 304 and 316 Stainless Steels (especially in thin walled feed lines); High Density Polypropylene.

This product may be fed using the PaceSetter® Control system.

GENERAL PROPERTIES

Physical properties of Spectrus NX1101 are shown on the Material Safety Data Sheet, a copy of which is available on request.

PACKAGING INFORMATION

Spectrus NX1101 is a liquid blend available in a wide variety of containers and delivery methods, including GE Betz's ChemSure™ Drumless Delivery Services.

STORAGE

Protect from extreme temperatures. Protect from freezing. Keep containers closed when not in use.

SAFETY PRECAUTIONS

Use of eye protection (goggles and face shield) and gauntlet-type neoprene gloves is required when handling this product. See section 7 of the MSDS for additional information on recommended personal protective equipment.

GENERAL INFORMATION

EPA Registration Number.....3876-147

Purchase of Spectrus NX1101 from GE Betz Water Management Group includes a license to practice the processes covered by U.S. Patents 4,725,624 and 4,855,296.