

Busan[®] 77

Microbicide

- Provides broad-spectrum microorganism control
- Effective over a wide pH range
- Completely water soluble for easy application
- Non foaming
- Non volatile

The growth of microorganisms in metalworking fluid systems is responsible for a variety of problems, including the generation of foul odors, degradation of fluid components, and fouling of the system with the growth of biofilms.

Busan 77 assists in the solution of these problems without the environmental and toxicological concerns presented with other microbicides. Busan 77 is a polymeric quaternary ammonium compound effective against a broad spectrum of microorganisms over a wide pH range. Busan 77 is completely water soluble.

It is well known that contamination with oils and the accumulation of suspended solids, including metal fines, not only create problems of their own but also contribute to the growth of microorganisms. Because of its chemical structure and cationicity, Busan 77 destabilizes the charges surrounding emulsified oil droplets and serves as an effective emulsion breaker. As a result, tramp oil is more effectively filtered out of the system. Likewise, the polymeric nature of Busan 77 promotes settling of suspended matter, especially metal fines for more efficient mechanical removal. Removal of tramp oils and suspended solids not only reduces microbiological problems but also ensures that the fluids run cleaner and have an extended sump life.

Due to its cationic nature, Busan 77 is specifically recommended to preserve synthetic concentrates, diluted synthetic metalworking fluids, and oil-based fluids emulsified with nonionic surfactants. Busan 77 is not recommended for use in straight oils, soluble-oil fluids containing anionic surfactants, or high oil-containing

semi-synthetics as it will destabilize the emulsion system effectively separating out the oil. As always, laboratory testing is recommended to ensure compatibility and the desired results.

Busan 77 is registered with the Environmental Protection Agency (EPA Reg. No. 1448-42) for use in cutting fluids. For more information on other registered uses, contact your Buckman representative.

Application

Busan 77 can be used to preserve both concentrated and diluted fluids. The product can be formulated with the fluid concentrate and/or added "tankside" to the dilute fluid. Busan 77 can be dispensed directly from the shipping container by means of a chemical-metering pump or suitable measuring containers.

Busan 77 should be formulated into concentrated synthetic fluids in an amount that will provide 100–1000 parts per million (ppm) in the diluted fluid. Typical use concentrations of Busan 77 in the diluted fluid range from 300–500 ppm. Busan 77 can also be used tankside in dosages of 100–1000 ppm. Frequency of addition will vary from case to case depending on the operating conditions and contamination levels.

Typical Product Characteristics

Active ingredient:	
Poly[oxyethylene(dimethyliminio)ethylene-(dimethylimino)ethylene dichloride].....	60%
Inert ingredients	40%
Appearance	Clear, pale yellow liquid
Density at 25°C (77°F)	1.15 g/cm ³
Weight per U.S. gallon	9.6 lb
Volume per pound	395 mL
Volume per kilogram	870 mL
Freezing point	< 0°C (32°F)
pH (100 ppm in water)	6.0–8.0

Please see important information on reverse side.

It is recommended when using any microbicide as a tankside addition that the level of the active agent in the dilute fluid be measured periodically. This ensures that a reasonable minimum inhibitory level of the microbicide is maintained to provide adequate control. Busan[®] 77 levels can be easily measured on-site with an easy-to-use, commercially available test kit. Your Buckman representative can provide you with more details.

Compatibility

The mechanism of action of Busan 77 against microorganisms allows it to work synergistically with many other microbicides. One particular combination is a blend of mixed isothiazolinones and the active ingredient in Busan 77. That product, Busan 1184 Microbicide, a tankside treatment is especially effective against bacteria, fungi, and algae.

Busan 77 has been tested for compatibility with a number of different metals, plastics, and rubber materials. Discoloration and corrosion were reported when copper and 1010 mild steel were exposed to Busan 77. There was no reported incompatibility with 304 Stainless Steel, 316 Stainless Steel, Aluminum 5052-H34, Magnesium ZE10-A, or any of the plastic or rubber materials. Compatibility testing is always recommended, as results vary depending on formulations, use levels, and operating conditions.

In summary, benefits from using Busan 77 for microorganism control include:

- effective microorganism control
- elimination of foul odors caused by microorganisms
- effective separation of tramp oil and suspended solids
- extended sump life through more effective filtration of oils and solids

Packaging and Handling

Busan 77 is a liquid packed in nonreturnable drums, pails, and in bulk. **Refer to Material Safety Data Sheet for suitable materials of construction for handling and storing this product.**

Improper handling of this product can be injurious to workers. **Observe all safety precautions shown on the label and in the Material Safety Data Sheet.**

For more information on Busan 77, Busan 1184, or other Buckman products for metalworking, contact us directly at 1 800 BUCKMAN, visit our website at www.buckman.com, or write to us at Buckman Laboratories, Inc., Attn: Formulator Chemicals, 1256 North McLean Blvd., Memphis, TN 38108.