



Technology Available for License

Immobilized biocide system provides safer, longer-lasting antimicrobial technology

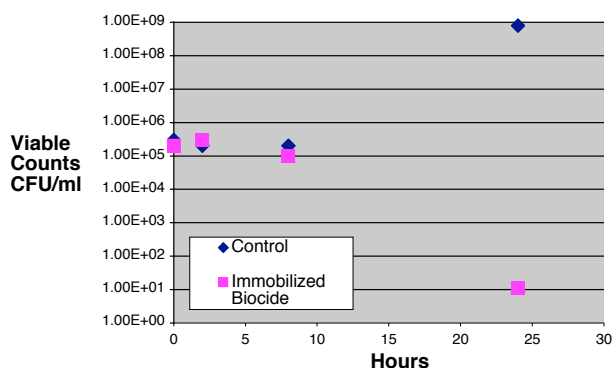
Montana State University offers a technology using biocides immobilized on porous media to treat industrial and drinking water systems.

Immobilized Biocides

A Montana State University technology uses a variety of non-oxidizing biocides immobilized on support-materials such as polystyrene beads to provide a controlled low-rate leaching of active anti-microbials. The system can be engineered to provide an appropriate rate of leaching to control biofilm and suspended microorganisms in water systems. A variety of non-oxidizing biocides have been shown to be effective, including naturally obtained anti-microbials.

Performance

The figure shows laboratory results comparing an isothiazolinone biocide immobilized in a sol-gel



to a control consisting of a pumice/sol-gel with no biocide. Nutrient broth was continuously recirculated through the system. After 24 hours since inoculation with *Pseudomonas aeruginosa*, the viable cell counts in the broth media went from approximately 3×10^5 viable colony forming units (cfu)/ml to 3×10^8 viable cfu/ml. The reactor with immobilized biocide showed viable cells had dropped around 11 cfu/ml.

Applications

The immobilized biofilm system has potential application in drinking water systems, particularly point-of-use filtration systems, spa and swimming pools, and industrial water systems.

Benefits

- Controllable release of biocide to minimize waste and maintain low levels in the water
- Greater safety by not requiring the handling of high concentration bulk biocide fluids
- Works with broad-spectrum, non-oxidizing biocides

Technology Transfer and Development Status

A suite of patents is available and research is ongoing at the Center for Biofilm Engineering, Montana State University.

Contact for licensing or further details

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