Technology Overview

Title: Ultra-stable and Autoclavable Polymers for Biocidal Applications

Reference:	0719
Summary:	Research conducted at the University of South Dakota has refined a process for creating polymers with potent, durable, and rechargeable anti-microbial qualities which are not compromised by autoclaving or other heat high temperature treatments.
Description:	In previous research, our lab has established the effectiveness of N-halamine polymers as biocidal and biofilm-controlling materials. When microbes come into contact with N-halamine structures a halogen reaction occurs, killing the microbes. The process consumes halogens, but the polymers can be fully recharged with subsequent halogen treatments. However, the antimicrobial properties of currently available polymeric N-halamines cannot survive autoclaving. This limits the potential applications of the polymers since autoclaving is a required step in many medical and dental settings. The current invention solves these problems and creates an opportunity for creation of new products to eliminate cross contamination and cross infections in high risk environments such as hospitals, dental offices, and medical labs.
Advantage:	-- Polymers are fully rechargeable to retain antimicrobial properties -- Polymers retain antimicrobial efficacy even with autoclaving
Application:	The new polymers have wide applications where very stable N-halamines are needed (i.e., coatings and paints that are antimicrobial for years without recharging), and in medical/dental settings where autoclaving is required.
Stage:	Proof of concept established. Various practical applications explored.
Patents:	Utility patent pending. Licensed to vendor; seeking sub-licensees.
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Keywords:	antimicrobial, biocidal, autoclavable, N-halamines, medical equipment, dental equipment, paints and coatings, biofilm prevention, rechargeable