

## Antimicrobial activity of polymer nanodispersion systems against bacteria and fungi

Katerina Klanova and Jiri Horalek

National Institute of Public Health, Czech Republic

Encapsulated nanodispersion biocidal systems will be used in the industry for the production of environmentally friendly paints. In this report, we demonstrate the antimicrobial activity of polymer dispersion systems against bacteria and fungi.

Tests were performed according to CSN EN 15457: Paints and varnishes. Strains of microorganisms originated from: (1) The Czech collection of microorganisms: *Staphylococcus aureus* (Sa) and culture collection of fungi, Prague, Czech Republic: a mixed population of *Aspergillus brasiliensis* and *Penicillium chrysogenum* (AbPc) and (2) the environment - the roof of a building: A mixed population of bacteria (mpb) and a mixed population of fungi (mpf).

1. We compared the biocidal activity of 23 samples against different microorganisms. Results:
2. (Sa) vs. (AbPc): 8 samples (35%) showed biocidal activity against bacteria and moulds, 4 samples (17%) had no biocidal activity, and 11 samples (48%) showed variation in biocidal activity,
3. (AbPc) vs. (mpf): 8 samples (35%) showed biocidal activity against both groups of moulds, 8 samples (35%) had no biocidal activity against moulds, and 7 samples (30%) showed variation in biocidal activity.

Six samples showed biocidal activity against all test microorganisms.

For further work, it is recommended to continue using all strains of microorganisms tested so far.

### Biography

Katerina Klanova received Ph.D. at the Department of Microbiology, Komensky University of Bratislava, Slovakia. She works at National Institute of Public Health as a researcher in the field of Microorganisms in the Environment.

klank@szu.cz