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Gelified foam to treat both chemical and biological contaminated solid surfaces

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In case of chemical and biological accidents or attacks, various building or civil infrastructures surfaces have to be decontaminated by secure and easily deployable processes. This study describes an innovative foam formulation used simply by spraying or filling large volumes and precises its efficiency against C and B threat agents.

The gelified aqueous foam is formulated with a viscosifier and bleach. Viscosifier induces a strong stabilization of the foam thanks to a drainage delay. Used by spraying, this rheological property ensures it remains “sticked” even to vertical surfaces by increasing the decontamination time. In addition, this foam generated with a controlled liquid fraction of 5% allows the wetting of the surfaces and leads to a lower effluent volume to treat.

After application of this foam, the B or C contamination is solubilized, neutralized by the biocide agent and finally transferred in a residual volume of liquid effluent. The drainage liquid of the foam can be easily recovered by pumping or vacuuming. This study demonstrates the fast efficiency of this foam against *Bacillus Anthracis*, sulfur mustard (HD), VX and Soman (GD) in 30 minutes and also against *Geobacillus stearothermophilus* according to the kind of materials in 30 minutes.

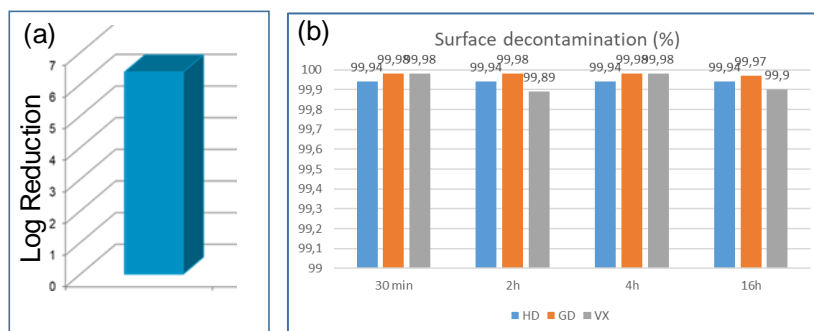


Fig. 1: Decontamination of *Bacillus Anthracis* spores > 6Log in 30 min (a) and of HD, GD and VX agents in 30 min, 2h, 4h and 16h (b)

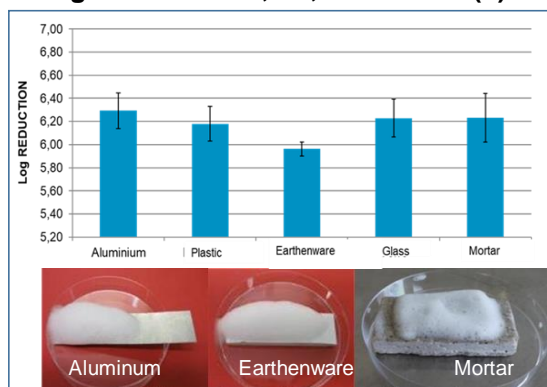


Fig. 2: Decontamination of *Geobacillus stearothermophilus* spores into different surfaces in 30 min