Surfactant-Modified Zeolite Water Filters

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Description: Our Surfactant Modified Zeolite (SMZ) filter is a filter that is designed to remove biological pathogens from water. Removed pathogens include bacteria, viruses, and parasitic protozoa. The material can be included in a filtration device, which can be used as a potable water filter, a point of use water filter, a water bottle filter, or a filter packet that can be placed into a body of water such as a well or a pond.

The SMZ filter is especially suited and was intensively tested as a filter pack of wells. SMZ can be produced cheaply (about 50 cents per pound or less than $500 per cubic meter), and used for any types of water ranging from drinking water to waste water. The SMZ can be manufactures in various grain sizes to allow water to flow at reasonably fast discharge rates through the filter.

The SMZ was tested in the laboratory and in field experiments and was shown to be extremely efficient in removing bacteria and viruses from water. For example, in field experiments 100 % of E. coli and more than 99.9 % of the bacteriophages tested were removed from sewage water. After 6 months the removal efficiency for E. coli was still 100%.