Hanish Water™

A Division Of
HANISH INC
Waukesha, Wisconsin, USA
www.hanishwater.com

Revolutionary Hanish Water BioGuard-DP Filtration

Waterborne pathogenic microorganisms are a major source of disease worldwide. Pathogens and water system deficiencies that are identified in outbreaks may also be important causes of endemic waterborne illnesses. Of increased importance, however, are outbreaks caused by the microbial contamination of water distribution systems either private, or public. In light of the growing evidence showing the resistance of certain micro-organisms to standard disinfection methods (including chlorination and UV radiation) mechanical removal of these contaminants is often the most reliable choice.

The Hanish Water ***BioGuard-DP,*** or double pleat filters cartridges offer two pleated layers of electropositively-charged filter media, providing a unique combination of high efficiency, capacity, and flow rate for particulate adsorption while maintaining a low pressure drop. These cartridges offer an ultra-high level of filtration efficiency because of the extra bed-depth of the two layers of electropositive filter media, and are capable of retaining 99.9999% of microorganisms (such as viruses, bacteria & protozoa which can include Cryptosporidium, Guardia Intestinals, Legion Ella, Pseudomonas, Salmonella, E-coli, Mycobacteria, Aspergillus), Pharmaceuticals, Endotoxins & DNA – all at flow rates hundreds of times greater than existing virus rated ultra-porous filters.

This NASA derived technology utilizes a thermally-bonded filter media technology that blends special fiber infused with additional nano-media fibers. This blend acts as the scaffold upon which the active components of these filters are permanently affixed. The advantage to this technology is that it is an adsorptive removal process; this industry disruptive nanotechnology is based on attaching the nano-media onto a submicron bio state heat sealed cellulous fiber. This method makes available greater than 42,000 square meters of nano-fiber surface area per square meter of filter media.

Figure 1. TEM micrograph of alumina nanofibers

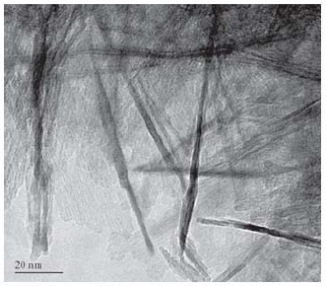
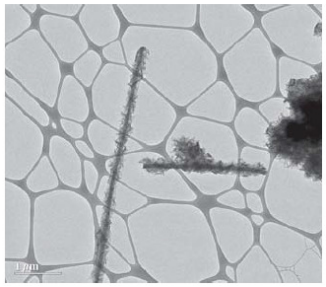


Figure 2. TEM of glass/nano alumina fibers mixture



The Hanish Water ***BioGuard*** is an electropositive fibrous filter media with high particle removal efficiency as well as high dirt holding capacity. It's flow rate is equivalent to, or higher than standard pleated filters that are rated at 3 microns. The Hanish Water ***BioGuard*** filter's absolute rating is 0.1 micron, 0.01 NTU. Yet the service flow rate through our standard 5" x 20" cartridge is 40 gpm with an initial pressure drop of less than 2 psi.

BioGuard filters provide unusually high flow rates, yet provide extremely efficient filtration solutions for a myriad of applications. Whether used in the field in a pre-filtration mode for ultra-pure water systems, to produce laboratory or process water, in commercial/industrial water treatment, as a microbiological sampler, or as a stand-alone filtration device for disaster relief applications. The Hanish Water ***BioGuard*** filters perform at a levels never before believed possible.

The ***BioGuard*** electropositive technology accomplishes this by delivering the low pressure-drop (ΔP) associated with a 2 µ - 3µ filter, yet achieving a removal efficiency of 99.9% for 0.2 particles. As a result, the ***BioGuard*** surface area affords results in dirt holding capacity up to 25 times greater than other filter medias. In fact, the filter media in a standard ***BioGuard*** filter can capture and retain an amount of particulate which is 3.5 times its own weight.

Terrorists can contaminate public water supplies and some biological agents including anthrax spores are resistant to the chlorine and municipal water supplies. Although they are intended primarily for aerosol application, many of the bacterial agents also have strong potential as waterborne threats. With few exception, it is impractical for terrorists to develop sufficient doses in reservoirs, but feasible for injurious or fatal BW agent contamination to be developed in the water supplies closest to the consumer such as finished water storage facilities, vulnerable points in the distribution system, or even bottled water. The ***BioGuard*** media has been shown to be effective for a bacillus and is expected to remove anthrax cells and spores as well as other biological agents that terrorists might add to the water supply.