



Item # 580 - The Aquasmart[®] Sport Bottle with replacement cartridge. Pure water on the go!! For: Preparedness, Emergency, Military, Agriculture, Travelling, Schools, Gym, For ALL Sports.

Performance: Removes 99.9% (or greater) of cryptosporidium and giardia cysts. These are water borne parasites. Giardia exists in 95% of all North American waters, regardless of visible purity. Nearly all water related illnesses in the wilderness are Giardia related. While bacteria and viruses have a difficult time surviving in wilderness waters (the UV rays from sunlight deactivate them) parasites such as giardia can last for decades.

How the bottle works: This is a new technology, which will someday replace what most filters are made of today. Most filtration for water borne parasites use a membrane to screen out the microorganism. The membrane is rated by micron size. One micron is 1/1,000 of a millimetre; giardia is about 5 to 10 microns in size. Cryptosporidium is a tubular shaped cyst that measures on average about 3 by 6 microns long.

The trouble with membranes is that they must screen out water borne parasites by making sure that the porosity of the membrane is smaller than the microorganism. Usually a 2 – 3 micron membrane will suffice. The problem is that at the porosity, you often need a pump to push the water through the microscopic pores of the membrane, or at the least, suffer a significant pressure drop. Alternatively, a new method has been developed which falls under the heading: tortuosity. Like its name implies, the removal of the water borne parasite is accomplished by creating a path so tortuous (complicated) that the microorganism becomes trapped.

Testing: Aquasmart[®] filters are batch tested at the University of Arizona's department of microbiology, one of the few laboratories in the United States that tests water filters using live micro organisms. Even NSF uses sawdust, rather than live cysts in its testing protocol. Results consistently have shown well in excess of a 99.9% reduction of these parasites, using water spike with over 50,000 live parasites per ml.

Sintered polymer technology: The Aquasmart[®] filter is made of exceptionally small spheres of ultra high molecular weight polyethylene (UHMW). These spheres are blended in a proprietary ratio with powdered activated carbon, zeolites and a proprietary compound, and then sintered at a temperature such that the spheres adhere to each other but do not lose their shape. That is, they are not melted together. The result is a polymer matrix that has literally millions of pathways. The pathways are so tortuous that the micro organisms become trapped inside, partly due to their irregular shapes (tubular in the case of cryptosporidium), and partly because the polymer and the organisms have opposing electric charges, which attract each other. Once trapped and bonded, the organism, whose natural state is dormant, remains inside. Water flows through with only slight resistance because water is both liquid and symmetrical, thereby eliminating the need for a pump.



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Instructions for Use

To Fill:

1. Remove cap
2. Remove filter
3. Soak filter in water for 10 min.
4. Fill bottle with water
5. Insert filter into bottle
5. Replace cap
6. Before initial use: flush water through the filter to remove carbon fines; repeat each time filter is replaced. Store filter dry.

Do Not:

1. Do not use Hot water
2. Do not freeze.

Item # 581 Cartridge - to be replaced every 400 refills, or every 4-6 months

The *Aquasmart*[®] Sport Bottle – Q & A

What's the most dangerous water to drink?

Untreated water is risky. Interestingly, a recent study by Dr. Gerba at the University of Arizona concluded that 26% of U.S. tap water has some giardia; 13% is found to have cryptosporidium. On average you have a 3% chance of ingesting one or both from chlorinated tap water. That's because chlorine has no lasting effect on giardia and cryptosporidium. How do you know when it has been ingested? Dr. Gerba suspects that 2 out of 3 so called "flu's" are really related to food or water which has been contaminated: most likely from our own taps. Since it takes one week to feel the effects of giardiasis or cryptosporidiosis, you may have ingested a microorganism over one week before feeling its first effects. These symptoms are stomach discomfort, diarrhea, aching muscle and headache. Sound like the flu? Use a good filter rated to remove cryptosporidium whenever possible. Neither giardia nor cryptosporidium will kill a healthy adult. Doctors warn that small children, the elderly, and people with compromised immune systems are at risk.

Facts about your Sport Bottle:

Your sport bottle will provide you with water free of added chemicals such as chlorine, free of bad taste and objectionable odours and most importantly, free of pathogenic cysts such as cryptosporidium and giardia. Please remember that your bottle operates on the pressure created by a combination of gravity and the squeezing motion applied by hand. It does not have the benefit of 40 PSI of water pressure, as does a filter installed in the home. As such, the flow rate of water through the filter in your bottle will be much slower. In order to be truly portable and achieve cyst removal, the filter is a very tightly packed matrix of carbon and proprietary compounds. Be patient and squeeze the water slowly through the filter. The additional contact time will clean the water much more efficiently. If you squeeze too hard, in an effort to increase the flow, the water will not be properly filtered and may leak out the sides of the cap. The filter cartridge is a radial flow design. The water will flow through the side opening and into the space between the plastic housing and the carbon cartridge. Here, the pressure you apply will then force the water through the matrix of the carbon block. The clean, filtered water will emerge in the hollow core of the carbon block and now gravity alone will allow it to flow through the large hole on the top of the cartridge and to the mouthpiece. In some cartridge housings, you may find some smaller holes around the large hole. These are for drainage and do not effect the flow rate in any way. Please store filter dry.

We hope that you enjoy your sport bottle and the freedom of having clean, safe water wherever you may be!

Trust the company that has been supplying water purification systems since 1984!

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