



Product knowledge:



Pro's and con's of water purification systems

I'm always a bit suspicious of products that employ fear as part of their marketing strategy: "Your energy field is out of balance... buy this bracelet"; or "Toxins are poisoning you – here's a foot patch that will make it all better".

That kind of thing.

Unfortunately selling water purification systems relies on the very same principles. The difference here is that there's scientific data to back it up. Reams of it, in fact. Diarrhoea still kills more people annually than malaria, and if the World Health Organization stats are correct, there should be more tourists lining up outside the Taj Mahal toilets than having their photo taken in front of the reflecting pool.

But that's India, you say. What about here at home? Our water's fine, isn't it? "It's true," says John Fontyn of Eiger Equipment, importers of the Katadyn range of filters and purification products. "Water quality in South Africa is generally so good that people don't see the point of owning a filter."

So who buys them then? "Mainly overseas visitors to South Africa, and locals who are going travelling into Africa or abroad," says Fontyn. Interestingly, it's not only the boots-'n-backpacks brigade, but also off-roaders and overlanders. "Our Katadyn Combi filter is a popular seller in 4x4 stores."

Tablets vs advanced systems

Traditionally, water purification was pretty much limited to tablets made from chlorine or iodine. It's what I always used on Boy Scout camps, and when I paddled down the Orange as a student. However, tablets have a number of disadvantages, which is why in recent years they've largely been overshadowed by more advanced systems.

But these units are a much bigger investment – often R1 000 plus (versus R40 for a pack of 50 tablets) – which is why getting the customer to bite can be challenging. What helps, of course, is being familiar with the advantages these more expensive systems offer.

Filters

Let's kick off with filters. As the name suggests, these remove disease-causing bugs as well as dirt and other particles from the water by forcing it through a cartridge made from ceramic or glass fibre. Microscopic holes – or pores – in the cartridge allow water molecules to pass

Our cut-out-and-keep series to assist retailers with product knowledge

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through while trapping everything else, in the same way that rice stays in the sieve when you wash it under the tap.

PROS: Geoff Ward of Outward Ventures, the local agent for the MSR and Platypus range of water filters, explains why this system is so effective: "Once the water has passed through the filter you can be 100% confident that all sediment and bacteria have been removed. This gives great peace of mind."

And wonderfully clean drinking water. Not only do filters remove all the rubbish, some contain a layer of carbon that is proven to neutralize bad tastes and odours too.

CONS: The catch (because nothing's ever perfect!) is that forcing the water through the filter requires effort, usually in the form of a hand-operated pump. Not only is this tiring, it's also time consuming: most require one minute's vigorous pumping to produce one litre of clean water, with the notable exception of some new models, such as the MSR Hyperflow

(three litres per minute) and Katadyn Expedition (which cranks out an impressive four litres per minute, but has a R15 000 price tag).

The other problem area is sediment.

While ceramic filters cope admirably with muddy or turbid water (though their flow rate will be compromised unless they're cleaned regularly), the glass fibre models quickly become clogged.

Sell one of these to somebody who is paddling down the Orange, or visiting Bangladesh during the monsoon, and they're likely to come back complaining.

Plan B – let there be light

An alternative to filters that has been making waves in the past few years is the SteriPEN, distributed in SA by Ram Mountaineering. This is a fundamentally different beast from both chemical and filtration systems in that it uses ultraviolet (UV) light to treat the water.

UV rays? Yup.

Turns out it doesn't just cause skin cancer and make your teeth glow in night clubs; it's also highly effective at destroying waterborne bacteria, viruses and protozoa.

PROS: "It is so effective," points out Ram's Simon Larsen, "that it's used for treating the municipal water supplies in cities the world over."

I've tested the SteriPEN myself and it is indeed a great product. About the size of an electric toothbrush, it uses batteries to produce UV light from a lamp in the head.

Compared with filters it's a cinch to use: no pumping required. All you have to do is dip the head in the water, press a button to activate the lamp and swirl it around. 90 seconds later you can quench your thirst.

What sets it apart is that it's so portable and easy to use, something which gives it universal appeal. While it's ideal for most backcountry adventures, you can also slip it into your day-pack or handbag and use it to treat that glass of water in a restaurant in Kathmandu or tap water in a hotel room in Nairobi.

CONS: But I have to admit I was sceptical at first, and this seems to be the biggest challenge facing retailers, says Matt Tibenham of Drifters Xtreme Sport in Cape Town: "When the SteriPEN first came out we couldn't give them away. Our customers preferred to stick with filters, which they knew and trusted."

That perception is slowly changing as people discover that UV-based purification **To p36**



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is not some crazy new fad, but actually a tried and tested system that's been used for decades. Overseas the market has definitely caught on, with SteriPEN systems now outselling filters in the US.

There are some drawbacks, for sure. Notably, the SteriPEN only works with batteries, so it might not be the ideal choice for a six-month expedition through the Amazon jungle (although Larsen does point out that one model, the SteriPEN Adventurer Opti, can be paired with an optional extra solar charging kit).

And it's not recommended for use in turbid water because the sediment literally stops the UV light from zapping the lurgies.

SteriPEN does offer a pre-filter adaptor for dirty water, but if I was expecting to get all my drinking water from muddy puddles then I would still rather go with a ceramic filter unit.

Chemicals: don't write them off!

I might have put down chemical purification at the start of this article, but to be fair they still have their place.

PROS: "The tablet market will remain for the price conscious and occasional user," asserts Simon Larsen. John Fontyn agrees: "Coghlan's make purification tablets that are specifically for short-term emergency use. But you wouldn't want to use them for extended periods due to the taste; there's also the risk of it causing tummy problems."

It's also worth noting that chemical treatments have advanced significantly since those bitter-tasting tablets I used on summer camp.

Two products that deserve mention are the Katadyn Micropur range, which uses silver ions to disinfect the water and has a faster reaction time than the cheapie tablets, and Aqua Salveo drops, which contain a combination of silver, copper and zinc ions and work almost instantly. Both also leave practically zero chemical taste in the water.

CONS: Tablets take a long time to treat the water (up to four hours in some instances!) and the chemical taste is not pleasant.

Interestingly, if you do the maths it's clear that tablets, although cheap, do not work out cheaper for long-term use. When compared with a SteriPEN or filter for regular use, the cost per litre is actually less on these compared with buying that R40 pack of tablets – a useful point to bear in mind when trying to convince somebody to spend the extra bucks on a more expensive system.

Rounding up

So that's a (brief!) round-up of the different purification systems available for hikers and travellers.

Key, as always, is making sure that you recommend the right product to your customer. In a nutshell:

- UV light seems to be the best option for general travel and backpacking;
- Filters are for the more hardcore adventurer;
- Chemical tablets or drops are for the punter who is on a tight budget, or who only expects to need it very infrequently.

SteriPEN wins awards

Backpacker magazine recently awarded their *Editor's Choice Award* to SteriPEN's Adventure Opti at the Outdoor Retailer Winter Market. The award is handed out annually to products in recognition of their outstanding innovation in design, materials and/or performance. SteriPEN is locally distributed by Ram Mountaineering.

SteriPEN Adventurer Opti was one of only 13 innovative products that were honoured with a *2011 Backpacker Editors' Choice Award*. It features an optical LED water sensor and purifies 0.5L of water in 48 seconds (90 seconds for 1L). The germicidal ultraviolet light destroys bacteria, viruses and protozoa such as giardia and cryptosporidium – and the LED serves as a flashlight when the purifier is not in use. This pocket-size device weighs only 103g with the included batteries and the long lasting UV lamp provides 8 000 treatments.

The SteriPEN UV water purifying system was also nominated as one of the top 100 inventions since 1923 (the year *Time* started publishing) in *Time* magazine's *All-Time 100 Gadgets* feature. The inventions were categorized under entertainment, computing, communication, lifestyle, cameras, home, health (under which the SteriPEN was categorised) and gadgets ahead of their time.

Bottled water not 100% safe

Warn your customers thinking they can get away with buying bottled water instead of a filter. If bottled water is not produced under certified methods of quality control, it may be contaminated by a range of chemical, microbial and physical hazards that could pose risks to health if they are present at high levels. Examples of chemical hazards include lead, arsenic and benzene. Microbial hazards, include bacteria, viruses and parasites, such as *Vibrio cholerae*, hepatitis A virus, and *Cryptosporidium parvum*, respectively. Physical hazards include glass chips and metal fragments.

