

No More  
Buying Bottled  
Water!

the  
cleanwater  
company



ceramic filtration and  
lime descaler systems

**"Ireland well below EU water  
quality target, EPA says"**

*Front page of The Irish Times 12th October 2007*

**INFORMATION  
LEAFLET**

# Water Quality – The Cleanwater Company uses Doulton® Ceramic Filtration Technology

## MAINS/MUNICIPAL WATER

- Municipal water quality can be highly variable: It comes from multiple sources.
- It has varying levels of contamination.
- It has variable quality control.
- It is treated in different ways with chlorine and other chemicals in variable quantities.

In addition to chemicals, which are added in order to treat it, municipal water contains many naturally occurring substances, a multitude of micro-organisms, and a host of other pollutants that are washed into the water supply from the surrounding land. Many of the naturally occurring minerals in water can be beneficial to health. Some of the other substances can be extremely harmful, especially if imbibed over a long period.

The best way to maintain the beneficial minerals while removing the harmful pollutants is to use a **Doulton®** ceramic drinking water filter.

## BOTTLED WATER

Bottled water, assuming that it is not purified mains water, has the advantage of coming from a single source and so maintenance of quality should be much easier than for mains water.

However:

- It is extremely expensive, mainly due to the packaging and transport involved.
- It has variable quality, depending on the source, and the company producing it.
- In some cases, the controls on bottled water are not as stringent as the ones on municipal water.
- Once unsealed, a bottle of water can become a breeding ground for bacteria and algae. This is a common problem with bottle water coolers, especially when they are in direct sunlight.
- By definition, bottled water is not on tap!

There is no need to spend huge amounts of money on bottled water when you can filter your mains water cheaply with a **Doulton®** ceramic drinking water filter. They not only remove harmful contaminants, but can also greatly improve the taste. The Cleanwater Company Ceramic filters are frequently incorporated into mains connected water coolers for this very reason.

## PRIVATE WATER SUPPLIES

Private water supplies taken from wells, streams, rainwater collection tanks, and other sources do not have the benefit of any treatment by water companies. As a result, they tend to be:

- Unchlorinated, which often leads to bacteriological contamination.
- Full of unwanted particles. These can be anything from mud and silt, to rust from old pipework. Not the kind of thing that you want to be swallowing.
- Prone to Cryptosporidium and Giardia contamination from animal faeces, which leach into water supplies from the surrounding land.

Using Doulton® drinking water filters is a cost effective and simple way of tackling all of these issues. They also do not require any power, often a scarce or expensive commodity where private water supplies are used.

## Why Choose a Ceramic Water Filter?

Ceramics started to become widely used for the *filtration of drinking water* in the 19th century. At that time, cholera outbreaks were a common occurrence in London. Doulton & Co., with their factory on the banks of the River Thames, were in the perfect position to join the fight against *water-borne disease*.

In general, the smaller the pore size of a filter and the more complicated the path the water takes through the filter medium, the more effective it is at removing particles from water. A ceramic has a small and complex pore structure, making it an ideal filter medium.

The Cleanwater Company has taken ceramic technology to the next level. We are able to accurately control the pore structure of our Doulton® and British Berkefeld® ceramic *drinking water filters*, ensuring excellent product consistency. Customers can, as a result of our exacting standards, expect the same high quality from our filters every time they are used.

Doulton® *drinking water filters* have been so successful globally because they have a variety of advantages over other products in the market:

- **Highly effective barrier to particles and pathogens:** Doulton® drinking water filters have a pore structure which has an Absolute filtration rating (defined as >99.99%) of 0.9 microns (less than 1000 th of a millimetre). Therefore, the ceramic is capable of removing sub micron particles and pathogenic bacteria from drinking water.

A recent study by a leading UK University showed that use of drinking water filters in a community in Zimbabwe slashed cases of potentially fatal diarrhoea (a common problem in Africa caused by pathogenic bacteria and cysts in the water supply) to virtually zero. Our water filters have been proven to work in the most demanding conditions. This is why they are used by the major aid organisations.

- **Long life:** As confirmed by the user instructions supplied with the product, Doulton® ceramic drinking water filters may be cleaned in order to prolong the life of the product. In this way, the filter can be re-used rather than replaced, giving it a much longer life-span than many other products on the market. On average, a Doulton® *filter candle* will remain effective for up to 6 months (depending on usage and water quality) before it will need to be replaced.
- **Self-sterilising:** The Cleanwater Company's ceramics contain trace elements of silver. Silver inhibits microbiological growth, meaning that there is no need to sterilise Doulton® *filter candles*, even when they are used over an extended period.
- **Natural:** The Cleanwater Company's ceramics are made from 100% natural elements. They do not add anything to the water they filter. This contributes to The Cleanwater Company's ability to pass the *stringent NSF® testing procedures*. Many other filter products add traces of chemicals to the water they filter.
- **Long-term value:** The extended life-span and effectiveness of Doulton® drinking water filters make them a low-cost investment in the long term.
- **Combinations with other filter media possible:** Other filter media can be put inside Doulton® ceramic *drinking water candles* to make them even more versatile. For example, activated carbon can be incorporated to remove chlorine, or an ion exchange resin to remove heavy metals such as lead.
- **Minerals maintained:** Using a Doulton® ceramic *drinking water filter* does not remove those minerals from the water, which are beneficial to health.
- **No power required:** Doulton® ceramic *drinking water filters* are some of the most versatile water treatment devices available today. They do not require electricity to function, which means that they are not vulnerable to interruption of power supplies, and can be used where there are no power supplies. They can be used literally anywhere in the world from an office block to a refugee camp.

## Product Performance

All Doulton® ceramic filter elements are manufactured under International Standards Organisation (ISO) conditions. They have the

highly consistent and controlled pore structure necessary to provide genuine sub micron filtration.

The Cleanwater Company takes its product performance claims very seriously. Where drinking water filters are concerned, it is of vital importance that manufacturers' claims as to the effectiveness of their products at removing contaminants are fully supported by proven test data.

All The Cleanwater Company's major claims with regard to the performance of **Doulton®** filter elements and systems have been verified by independent laboratory testing.

## Common Contaminants

In order to be sure which contaminants your water contains, it is best to get a sample of your water professionally tested in a laboratory.

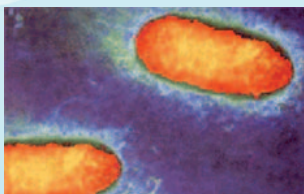
Commonly occurring, potentially harmful contaminants in mains water around the world include:

- **Pathogenic Bacteria**
- **Cryptosporidium, Giardia, and other cysts**
- **Chlorine (taste & odour)**
- **Lead**

### PATHOGENIC BACTERIA

Common pathogenic bacteria found in water supplies include:

- E-coli
- Salmonella
- Legionella
- Cholera
- Salmonella Typhi (Typhoid)
- Shigella
- Klebsiella

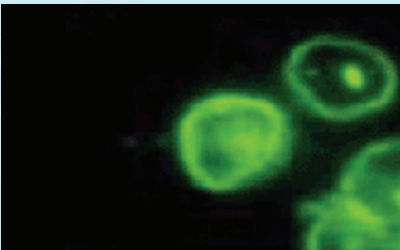


These bacteria are not often found in chlorinated mains water supplies, but are often found in unchlorinated private water supplies, and stored water. Stored water, whether it is in a water tank or a bottle, is the perfect breeding ground for bacteria. It does not take long for the bacteria to multiply sufficiently to reach infective dose (disease causing) levels.

Pathogenic bacteria are responsible for many of the common types of potentially fatal water-borne disease around the world. **Doulton®** water filters have been proven by independent laboratory testing to be highly effective against pathogenic bacteria.

Bacteria	% Reduction	Illness Caused	Symptoms
Salmonella typhus	>99.999%	Typhoid Fever	Fever, headaches, apathy, weakness, abdominal pain, and a rose coloured skin rash.
Shigella	>99.999%	Shigellosis or Bacterial Dysentery	Abdominal pain, fever, diarrhoea, mucus and blood in excreta.
Vibrio cholerae	>99.99%	Cholera	Nausea, vomiting, abdominal pain, diarrhoea, severe dehydration followed by collapse, shock and in many cases death
Klebsiella Tarragona	>99.999%	Gastroenterocolitis	Diarrhoea and abdominal cramps
E-coli	>99.999%	Gastroenterocolitis	Diarrhoea and abdominal cramps

## CRYPTOSPORIDIUM, GIARDIA, AND OTHER CYSTS



Water-borne cysts such as Cryptosporidium and Giardia are very common in water supplies all over the world. These cysts are particularly worrying because:

- They can be found in human and animal faeces, so it is relatively easy for them to find their way into water supplies.
- They have a low infective dose. In other words, you do not have to ingest many cysts to become ill.

- They can cause problems of the stomach and digestive tract, including potentially life-threatening diarrhoea.
- They are resistant to chlorine and other chemicals, so traditional water treatment methods are not sufficient to guard against them.
- They can survive for long periods in the environment.

The simplest and best way to get rid of cysts is by using absolute filtration of less than 1 micron (1 thousandth of a millimetre).

**Doulton®** water filters are the ideal solution. Independent testing has shown that they remove >99.999% of *Cryptosporidium* and *Giardia* cysts.

## CHLORINE (TASTE & ODOUR)

In many areas of the world, chlorine is added to mains water in the treatment works in order to disinfect the water and minimise bacteria growth in the water distribution network. Chlorine is extremely effective at killing bacteria, but unfortunately there are a number of drawbacks to its use:

- The dead bacteria are NOT removed from the water. Most people would not like the idea of swallowing large numbers of micro organisms, whether or not they are dead.
- Chlorine can react with organics in the water to produce trihalomethanes (THMs). These are known carcinogens (i.e. they can cause cancer).
- It has an unpleasant taste.

Activated carbon is the best way to remove chlorine. The Cleanwater Company has developed a range of filters which combine the benefits of a ceramic filter with added activated carbon to remove chlorine.

**Which Filter?** For mains supplies, use Supercarb™ or Ultracarb™. For gravity filters, use Super Sterasyl™

## RUST & OTHER PARTICLES

The source of rust particles in water is usually old iron pipe work, which is especially common in places with mains supplies dating back many years.

Other particles of numerous types commonly found in mains water come from the pipes used to transport the water and from the original source. The size and number of these particles depends very much on the nature of the water source and of the water distribution network. Despite the best efforts of the water treatment companies there is likely to be some particulate contamination in mains water, even if it is not visible to the naked eye.

Independent testing has verified that Doulton® water filters effectively remove >99.99% of particulate; that is, 0.9 microns or larger, and 99.9% of particulate in the range of 0.5 to 0.8 microns is reduced. For water with heavy particle contamination, a pre-filter should be fitted before the ceramic filter. This will prevent premature clogging of the ceramic filter.

## LEAD

The very harmful effects of lead especially for children and pregnant women are well known. It can cause mental and physical retardation, behavioural problems, and learning difficulties in children. In adults, too much lead can cause high blood pressure, strokes, and heart disease. In men it can adversely affect sperm counts.

Lead does not tend to be present naturally in water supplies. It leaches into water from lead pipes in older houses, and from lead solder used to join other types of metal pipes in newer houses. Even very small quantities are harmful.



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