

# Arsenic Removal



Arsenic is found in waters in many parts of the UK and mainland Europe. The arsenic comes from the underground rocks through which the ground water percolates. The legal limit for arsenic in municipal water has recently been reduced to 10ug/l. The arsenic can be removed with a specially formulated filter media called Bayoxide or RO.



## Arsenic Removal

### Why Remove it ?

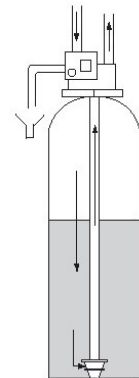
Arsenic compounds are toxic even at low levels. They can cause skin and liver disorders, circulatory problems and can be life threatening. The European Union has looked at the Arsenic levels in water and reduced the allowable limit for municipal waters to below 10ug/l (from 50ug/l).

### Bayoxide Arsenic Removal Media

Severn Trent Water worked with Bayer As to develop an arsenic removal media. This media is similar to amorphous iron hydroxide but specifically formulated to give a high arsenic removal capacity. The media is strong, reliable and easy to handle.

### How does it work?

Water flows into the valve at the top, down through the media and then up through the 'riser' tube in the middle of the vessel. As the water travels through the media the arsenic is removed. There are timer options that can be set to automatically self clean (backwash) and wash away any of the accumulated sediment but holding firm the arsenic. When the media becomes full it can easily be replaced with fresh media (typically every couple of years or so depending on arsenic levels and local conditions). Arsenic filters can also be used in conjunction with other filters such as sand filters, if the water has high turbidity, iron and manganese reducing filters or pH correction filters if the pH of the water very low.



### Sizing Units

Typical units are reported below. Other sizes are available.

Arsenic Removal Unit	1044	1354
For a family of 4 at 50ug/l Arsenic need a media change every <sup>1</sup> :	4 years	8 years
Service flow rate - m <sup>3</sup> /hr	1.0	2.0
Backwash flow rate m <sup>3</sup> /hr	1.2	2.4
Inlet & outlet connections	1"	1"
Drain connection	3/4" hose con.	3/4" hose con.

<sup>1</sup> Assumes low level of phosphates ,pH over 7, and no other heavy metals.

### Reverse Osmosis (RO)

RO systems can remove arsenic in water. The water passes through very small pores at a high pressure. This combination stops most contaminants just allowing water molecules through. However RO systems are relatively expensive, often require the water to be pre-treated, remove beneficial minerals, and give relatively low flow rates (litres/day).

Iron and manganese, sediment, softeners pH correction, and carbon filters are also available