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Get A Better Idea Of How Water Filters Work

There is a substance in filters that will trap, absorb or modify pollutants within the water that is flowing through them. This substance is actually called a medium. As you learn more, you will see that there are actually a few different types of filter media. There are the ones that will mechanically trap pollutants through the use of an ultrafine strainer or sieve. Then there are others that use a process called absorption where the contaminants are retained within the microscopic pores of the medium.

There is a rating of the water filter and it will tell you exactly what size of particles it will and will not be able to remove. The filters are rated in micro metres or microns. The micron is one millionth of a metre.

Generally, there are going to be two types of filter ratings. There is the nominal one and the absolute one. The nominal rating will indicate the smallest particle size that the filter will be able to reduce or completely remove. This is not a precise value though, it is only an estimated one. To give you a better idea, a 5 micron nominal filter should be able to trap up to 95 percent of all of the particles that are 5 microns or smaller.

Then there is the absolute filter rating which will refer to a certified reduction rate, which is usually at 99.9 percent. This means that a 5 micron absolute filter will be able to remove roughly 9.9 percent of the particles that are 5 microns or more in diameter.

Sediment Filters

These particulate or sediment filters are fine sieves that will reduce dirt and various other particles. Using one of these as a pre-filter will actually help to protect the water purifier from damage and it will often extend its life. The expected life is extended because it will take a lot longer for the filter to become clogged with all kinds of unwanted media.

The sediment filters will range from coarse to fine and they will be rated accordingly.

The sediment filters are made from either rigid foam, wound string, or pleated film. These will usually be mounted under the sink and the life span of the sediment filter will usually depend on how much rubbish is in the water. Generally speaking, the average life span of the sediment filter is anywhere from six to twelve months.

Activated Carbon Filters

There are activated carbon filters that are particularly effective at the removal of pollutants which lead to unpleasant tasting, colored and odored water. The fast acting filters will help to reduce, if not eliminate the levels of chlorine by-products, herbicides, pesticides and other organic and industrial chemicals.

There is activated carbon that is made from a variety of organic materials, such as coal, lignite, wood and coconut.

When the carbon filters are activated through the exposure to high temperatures and in the absence of oxygen, the result is a substance with millions of microscopic pores.

Generally, there are only two forms of carbon in use, block and granular. The carbon granules are about the size of coarse sand and the carbon block is finely powdered materials that is compressed into a solid mass.

In order to make sure that you are getting the most of the carbon filter, you are going to want to make sure that you are keeping it free of sediment and other heavy organic impurities through the incorporation of a sediment filter as the integral part of the basic system design. This is imperative in order to make sure that the filter cartridges are going to be replaced before they reach the date they expire, instead of waiting right up to that date or even after.

Ceramic Filters

The ceramic filters are going to be very effective against bacteria, sediments and parasites. Some of the models out there can filter down to a .1 of a micron absolute. The filter has a hollow core of a ceramic which can be

scrubbed with a soft brush when a cleaning is needed. The ceramic filter can be used as a sediment prefilter when replacing a standard foam, string wound or pleated filter.

Also, some of the ceramic filters are actually fitted with an additional activated carbon block core in order to increase their odor and taste reduction efficiency.

Reverse Osmosis Purifiers

The process of osmosis is when two solutions of different concentrations are separated through a semi-permeable membrane. The reverse osmosis water purification works through the forcing of the water under the pressure against an ultrafine semi-permeable membrane and it is designed in order to allow a single water molecule to permeate through it, while also rejecting most contaminants at the same time. The membrane will act as a mechanical filter that will strain out the micro-organism, asbestos and even much heavier organic compounds.

The typical RO purifier will consist of four filters that are in a series plus a storage tank. The first sediment filter, the second is a carbon block and the third is a membrane. Then there is the fourth and it is an activated carbon block that will help to remove any remaining chlorine by-products.

There is a system that will remove a wide spectrum of impurities from the water. The only energy that is required is what comes from the mains water pressure.

To effectively remove sediment, colloidal matter, turbidity, toxic metals, pesticides, herbicides and radioactive elements, reverse osmosis is used. This will have a lot of significant health benefits for you.

The general system produces water at a very slow rate, about drop by drop, therefore, most of the under sink systems will have a pressurised storage tank and then also a dedicated faucet or an all-in-one three way mixer that is installed on the sink itself. The water that is drawn from the faucet or the mixer will come from the storage tank.

There is also a counter top system that will work the same way without the use of a pressurized tank. Instead of the tank, these systems will directly attach to an existing faucet and they are used to fill a bottle or a glass directly from the system. Those who are renting, who are unable to plumb the system in or who are traveling will find that these systems are well worth the money.

The average system easily produces about 200 liters each day, which should be more than enough for the average sized family.

Unlike traditional filters, the RO membranes will not accumulate pollutants, but the membranes themselves will gradually degrade with regular use. Because of this, the carbon filters and the sediment will need to be replaced about every 6-12 months. The membranes should be changed about every 3-5 years, or as specified by the manufacturers.