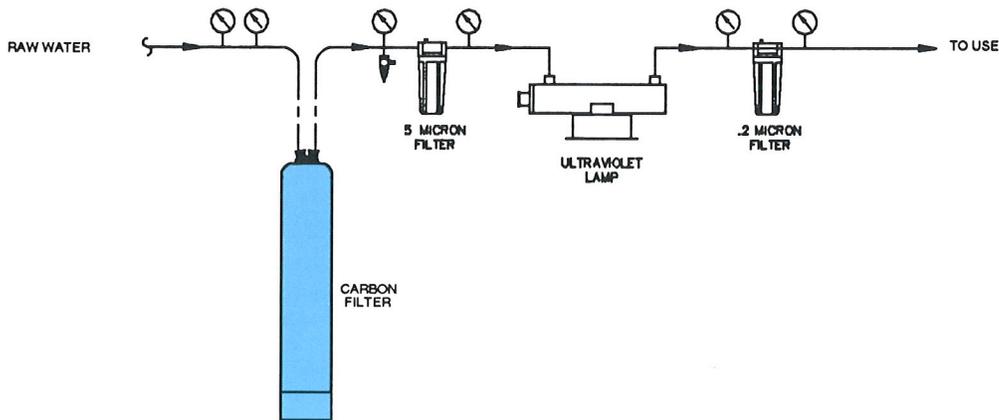


ORGANIC REMOVAL

Activated carbon can be used for dechlorination or free chlorine removal from water. The chlorine removal process is different than with organic compound adsorption. Chlorine removal from water involves a chemical reaction of chlorine with carbon to form chloride ions which are non-oxidizing. The harmless chloride ions can easily be removed by deionizers or a reverse osmosis membrane.

Without the use of activated carbon in a deionizer purification system the chlorine will oxidize any resin, breaking down the physical structure of the resin beads, resulting in significantly increased organics and particulates in the product water from the deionizer. Chlorine will also affect most reverse osmosis systems by causing irreversible RO membrane oxidation.



CHLORAMINE REMOVAL:

In recent years the use of chloramines has increasingly displaced the use of free chlorine as a disinfectant for municipal water supplies. This change was necessary because free chlorine can combine with organic chemicals in the water to form carcinogenic compounds known as trihalomethanes or THMs. The use of chloramines as a disinfectant minimizes this THM problem.

The mechanism of removal for chloramine is more complex than free chlorine and requires significantly longer contact time to achieve high levels of removal. The Association for the Advancement of Medical Instrumentation recommends carbon filter specifications for chloramine removal in Hemodialysis applications:

- * virgin carbon media with a minimum iodine number of 900
- * a ten minute empty bed contact time
- * a minimum of 12 x 40 mesh size

Use of Total Water Treatment's Carbon Filters will meet these recommendations for Hemodialysis.

