

## Chemical Iron Filters



### Information

Iron-bearing water is a nuisance and will stain plumbing, fixtures and porcelain. Clothing laundered in iron contaminated water will develop yellow, red, orange and/or brown stains. Iron can impart an objectionable appearance and taste to the water. Iron is troublesome in water softeners as the iron compounds can form scale which is a common cause of constrictions in valves, piping and tubes.

Chemical iron filters have a bed of media which is formulated from granular glauconite greensand that removes iron, manganese and hydrogen sulphide from water supplies. This is accomplished through a combination of oxidation and filtration.

In backwash, accumulated materials are removed from the bed. The silicate particles are cleaned by bouncing and rubbing against each other while the bed is expanded. The cleaning action removes the accumulated iron oxides and prevents particle growth and cementing which causes fouling of beds.

During regeneration, a concentrated solution of potassium permanganate is drawn from the chemical tank by the control, which dilutes the solution to the proper concentration rate. The slow rinse provides the necessary contact time for proper regeneration. The fast rinse removes all traces of excess chemicals from the bed.

The quantity of iron which the unit can remove is limited to 10 mg/L (ppm). Above this level, the precipitation behavior becomes erratic and unpredictable. The possibility of this precipitate clogging the bed increases as the iron concentration increases. This creates an undesirable maintenance problem. For this reason, treatment of water should not exceed the rated capacity of the iron filter. Also, quantities of sulphides should not exceed 1 mg/L (ppm) per cubic foot of filter media. Analytical determination of your water by a certified laboratory should form the basis of all equipment recommendations.