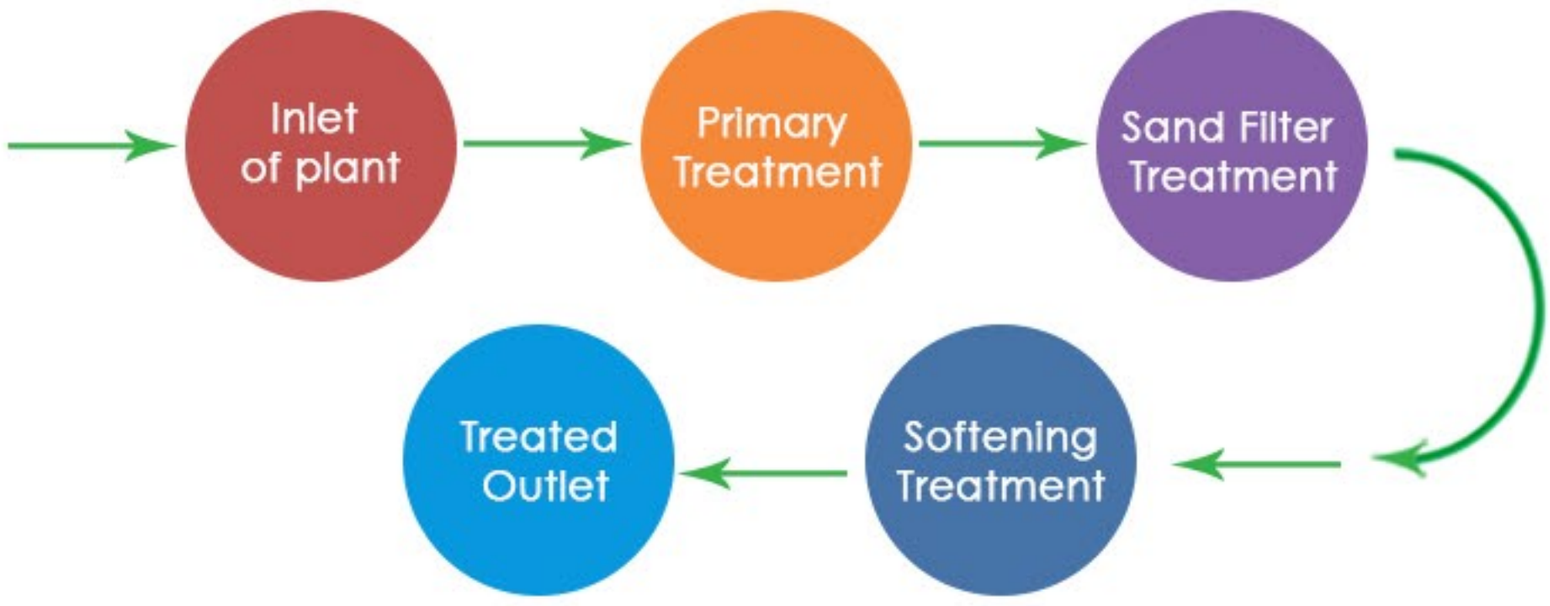
U. S. AQUATREAT CO.

SOFTENERS

Process Flow Diagram:



Process Description :

Water Softeners remove hardness from water by ion exchange process. The media, called resin; in the softener is charged with sodium (or potassium) ions. When the hardness ions come in contact with the resin beads the hardness ions is collected and the sodium (or potassium) ions are released. The typical cations found in the raw water are exchanged within the resin bed for sodium or potassium. When two-thirds of the resin bed is exhausted, the softener allows hardness to slip through. When this occurs, it is time to regenerate or recharge the resin bed using a salt and water mixture. Sodium chloride (NaCl) or potassium chloride (KCl) are normally used for this purpose. Regenerating the resin bed refreshes its ability to exchange ions.

The Service Cycle is the normal softening cycle. The water flows through the valve into the top of the tank then down through the resin to the lower collector. As the raw water passes through the resin, the hardness is removed by the ion exchange process. It then passes through the slots in the collector and up the riser tube through the valve to the outlet for use as softened water.

Regeneration is done after saturation of resin. The water flows into the valve, down the riser tube and out through the collector. The water then flows up through the resin expanding it and out the top of the tank to the drain. The expansion mixes up the resin and washes the turbidity and other contaminants, which were filtered out during the service cycle, down the drain. After backwashing regeneration is done by brine solution to replace hardness ions by sodium ions.

Application:

1) Textile Industry
2) Food processing Industry
3) Paper Industry
4) Chemical Industry
5) Solar cell Industry
6) Pharmaceutical Industry
7) Automobile Industry
8) Rubber Industry
9) Sugar Industry
10) Steel Industry
11) Power Plant
12) Leather Industry
13) Hotel Industry
14) Fertilizers
15) Dairy product Industry
16) Builders and Developers
17) Agricultural Industry
18) Beverage Industry