

# Premium Ion Exchange



HD IX Softeners™

**WATER TECHNOLOGIES**

Industrial ion exchange (IX) water softeners from Veolia Water Technologies are engineered and fabricated specifically for demanding high Total Dissolved Solids applications, such as treating produced water from oil fields and chlor-alkali brine streams. The IX softeners utilize proven ion exchange technologies, merged with high-quality materials of construction selected to withstand corrosive fluids.



## High Efficiency Hardness Removal

Veolia configures a system to fit your needs, whether it be one or more trains of Strong Acid Cation (SAC), Weak Acid Cation (WAC), a combination of both in series, or a multistep process of softening with other water treatment technologies. We provide the support needed to integrate these solutions into your process.

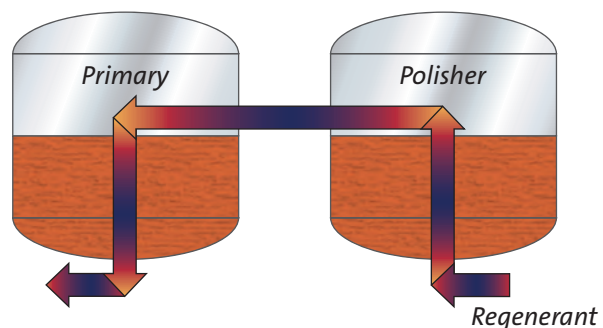
## Quality Components and Solid Design from a Company you can trust

Veolia is a world leader in water treatment and services. We work with our clients to develop custom configurations based on site requirements, using our decades of experience, applying proven technologies. We stand behind the products we sell, guaranteeing performance and workmanship. You can count on us to be there when you need us for construction assistance, startup services, spare parts, and operational advice at any time after delivery.



## Series SAC Softeners

We have supplied series SAC softener systems that can produce less than 1 PPM hardness on produced water with a TDS up to 7000 PPM TDS. This configuration uses a regeneration technique with high purity, high concentration salt solution to regenerate the polishing resins. Brine is introduced counter – currently, allowing the lowest hardness leakage possible and then directed to the primary resins at a more efficient concentration in a co-current fashion to obtain the highest capacity. We have incorporated options to gas scour or surfactant clean the resins when fouled with oil. The construction materials are compatible with produced water at temperatures up to 200 degrees Fahrenheit.





## WAC Softeners

Our WAC softener designs are capable of producing a low hardness level of 0.2 PPM on produced water with a TDS up to 18,000 PPM. Regeneration using HCl and NaOH is highly efficient with our design utilizing a lower strainer plate and dedicated regeneration distributors. The construction materials are suitable for high temperature, corrosive operation and exposure to aggressive regeneration chemicals.



## Brine Softeners

This special design uses a chelating IX resin capable of removing hardness to 10 PPB to produce high quality brine that can be used in a membrane cell electrolyzer for the production of chlorine and caustic. The design and materials of construction are critical, especially the choice of elastomers, which need to be resistant to any hardness leaching during operation. Regeneration is performed using HCl and NaOH with a lower strainer plate and dedicated regeneration distributors. This service is very demanding and our experienced team produces the most efficient design to obtain this quality.



## Regeneration Stations

We can provide regeneration stations with our softeners, including: brine makers, HCl and NaOH storage tanks and dosing pumps, and neutralization systems for regeneration waste. We offer monitoring equipment to allow for recycling of waste water to reduce the volume of concentrated waste. These systems can be automated using the PLC controls supplied with the softener trains.



