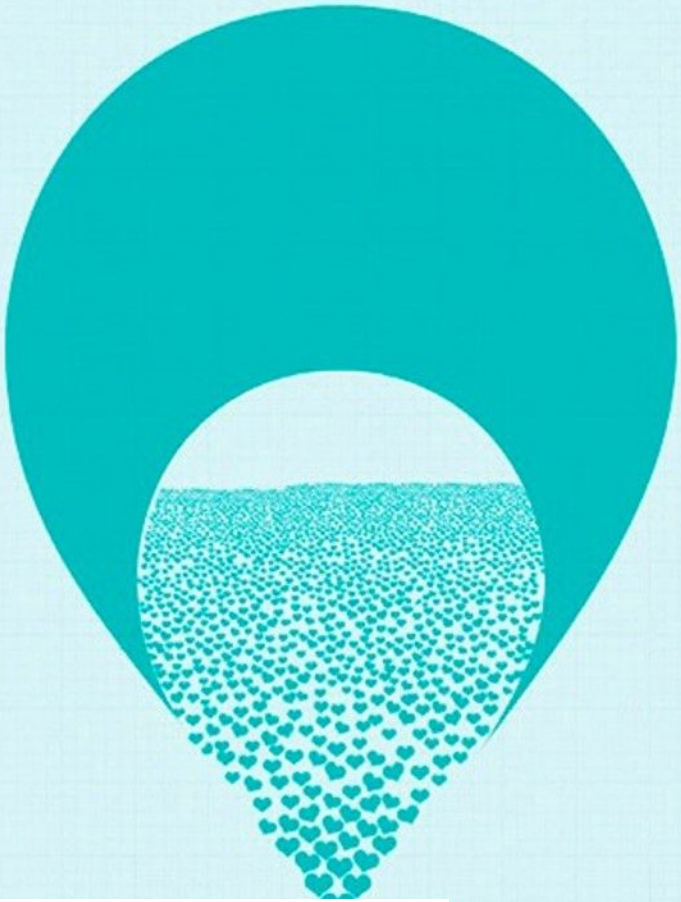

FAQ

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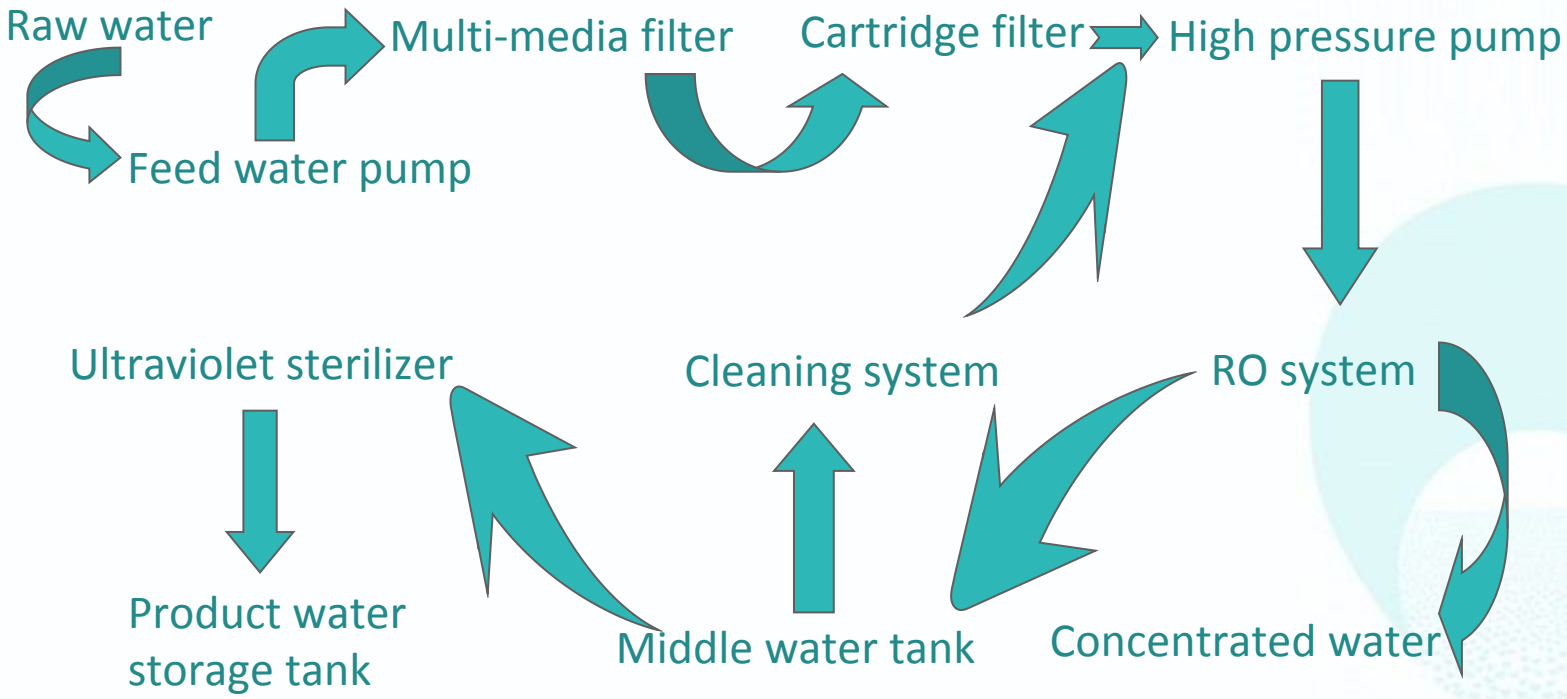
Q1: How does it work?



Brief introduction of seawater desaliantion process

If any question, please visit our websit online www.kysearo.com

Q2: What types of water sources does it treat?

- Reverse Osmosis is an ideal water treatment solution in most types of water. Generally speaking, all major water sources from a treatment standpoint can be broken down into three major categories: tap water, also known as municipal sources, groundwater, which includes brackish water, and saltwater. The biggest distinction between these three types is the Total Dissolved Solids (TDS) content of each type. As a rule of thumb, the American Health Association requires that drinking water is under 1,000 PPM TDS.

- Reverse osmosis is often used in a tap water environment to reduce hardness, or the debris deposited in water from traveling in metal pipes. Total dissolved solids is often a target of water purification in tap water systems.

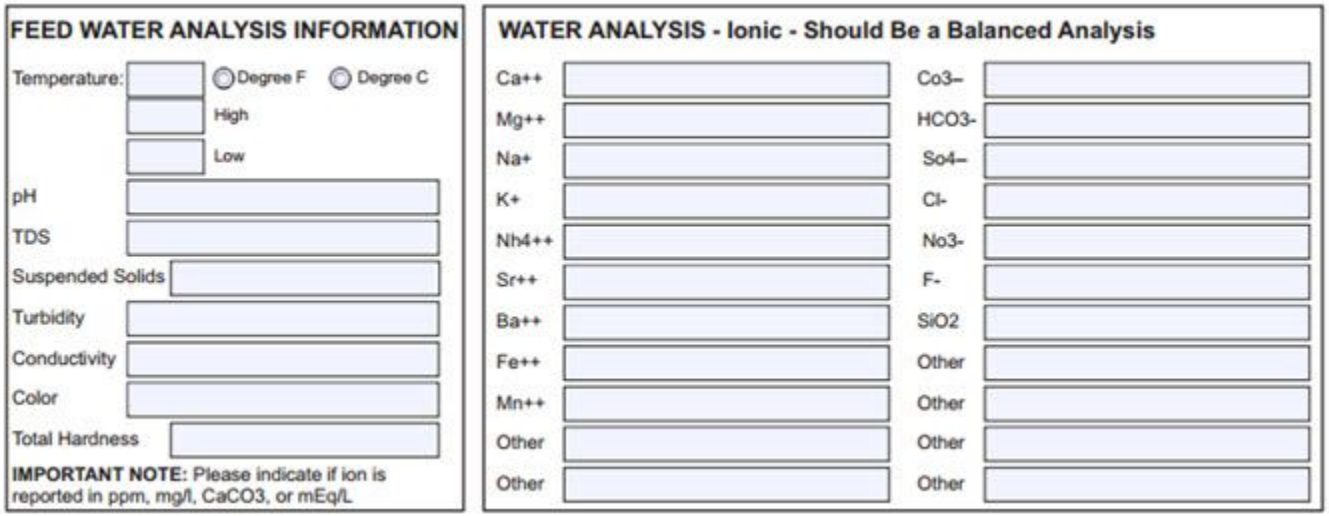
- Underground reservoirs of water are often brackish, meaning they contain large volumes of salt, but not enough to be considered salt water. Groundwater is most often purified for the agriculture industry, the mining industry. Groundwater is also a prized target of the bottling industry, because the unique mineral combinations often have an appealing taste.

- Salt water reverse osmosis (sometimes referred to as desalination) is the turning of saltwater into drinking water. Ocean water has up to 45,000 PPM TDS. The biggest uses of desalination come in providing water in areas that lack a regular supply of fresh water.

Q3: Is pretreatment necessary ?

- It is very important that feed water be preconditioned to protect the membranes from fouling causing premature failure.
- The membrane is constructed of a porous material that allows water to pass through, but rejects up to 99% of the dissolved solids at the surface. The dissolved salts are concentrated reject water (brine stream), where they are discharged to waste. Removing things prior is key to letting the RO system do what it was meant to do.
- As the RO System continues to operate, the dissolved and suspended solids in the feed water tend to accumulate along the membrane surface. If these solids are allowed to build up, they eventually restrict the passage of water through the membranes, resulting in a loss of throughput. (The throughput capacity of the membranes is commonly referred to as the flux rate, and is measured in gallons per square foot of membranes surface area per day.)
- Early in the development of membranes systems, little was known about which impurities in the feed water were likely to cause fouling and a corresponding reduction in flux. Today, many of these troublesome impurity treatments have been identified, and preventive treatments have been devised that greatly reduce membrane fouling, thus prolonging the life of the RO System.

Q4; Is it necessary to get a water analysis?



FEED WATER ANALYSIS INFORMATION

Temperature:		◯ Degree F	◯ Degree C
		High	
		Low	
pH			
TDS			
Suspended Solids			
Turbidity			
Conductivity			
Color			
Total Hardness			

IMPORTANT NOTE: Please indicate if ion is reported in ppm, mg/l, CaCO3, or mEq/L

WATER ANALYSIS - Ionic - Should Be a Balanced Analysis

Ca++		Co3–	
Mg++		HCO3-	
Na+		So4–	
K+		Cl-	
Nh4++		No3-	
Sr++		F-	
Ba++		SiO2	
Fe++		Other	
Mn++		Other	
Other		Other	
Other		Other	

- A detailed chemical analysis (LSI, SDI, or CFI) of the RO feed water is an absolute necessity for identifying potential foulants. This should include a measurement of the hardness (calcium and magnesium), barium, strontium, alkalinity, pH, and chlorine. The data from the chemical analysis can be used by the engineers designing the system to determine the optimum membrane array that will both minimize the tendency of scale and deposit formation and maximize the recovery and flux rate.

Q5: What determines the precise pretreatments for a particular RO?

- In one word: analysis. Every source of water is different, and you never know what's in your water until you have it analyzed. The water analysis, LSI, SDI, or CFI values are used to determine the precise pretreatment requirements for a particular RO System. Since water supplies vary considerably from one location to another, each pretreatment requirement will be different.

Q6: Seawater or brackish water?

- Salted water is not always the same. Depending on whether they come from warm or cold oceans, closed or open seas, their salt content will vary. This is a short comparison between samples:

- Brackish water:0,5 à 3 g/l
- Northern Sea close to estuaries :21 g/l
- Atlantic Ocean :35 g/l
- Mediterranean Sea :38 g/l
- Arabian Sea :45 g/l
- Dead Sea :300 g/l

- Open seawaters always contain the same proportion of different salts; they can be desalinated without problem. For brackish waters, whether from underground or surface, a particular study is often required since they often contain very low solubility salts. These salts will impede concentration as they will immediately precipitate and disturb process operation.

Q7: What types of commercial/industrial applications do RO systems serve?

- If there is a need for water treatment, chances are an RO system can do the job. There's a wide array of industries that benefit from having high-purity water, as well as a large number of applications where water treatment is required. Because of the extreme volumes of water required, RO is often the ideal, economical solution, requiring less energy than most large-scale treatment methods. Because they consume less energy, a Reverse Osmosis System is often the environmentally friendly solution as well.

- **Here's just a few applications a reverse osmosis system is good for:**

- Pretreatment of Boilers
- Food and Beverage Services
- Industrial wastewater purification
- DI water pretreatment
- Hotels and Resorts
- Ice making
- Car washes
- Pure ethanol
- Dairy industry
- Maple syrup
- Pharmaceuticals
- Water Bottling
- Hospitals
- Agriculture
- Humidification

Summary

- Reverse osmosis is a reliable method for producing high-purity water. However, most water supplies require some form of RO pretreatment such as softening, media filtration, activated carbon, or chemical injection to protect the membranes from premature fouling or failure. The pretreatment requirements will vary from location to location, but the overall objective remains the same: to maintain the design flux rates, minimize the membranes cleaning frequency, and prolong the useful life of the RO equipment.

- **If any questions or comment, please freely let us know.**