How to buy a point of use reverse osmosis(RO) system

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Once you have decided that you would like to purchase an RO system, you will need to learn and understand some new terms and concepts in order to compare various systems that you may be offered. You should also ask your sales person the following questions-

Will the unit remove the contaminants I want to remove?

RO's are not effective for removing-

- most volatile organic compounds(VOC) and other low weight molecular compounds
- dissolved gases
- chloramines

The person selling you the RO should be able to provide you with the percent rejection of his RO for the particular substance(s) you want removed. The ability of a RO to remove a particular substance is measured in percent rejection.

Example- If the water starts with 100 mg/l(milligrams/liter) of salt and the rated rejection for salt is 98%, then the treated water will have 2% of the original amount or
100mg/l - .98 X 100mg/l = 2 mg/l of salt

If the salt content of the untreated water goes above 100mg/l, then, the treated water salt content will go up. This is very important to understand when dealing with health related contaminants. You should always allow for a possible increase in the contaminant.

Is the RO NSF rated for the substance you are trying to remove?

The National Sanitation Foundation(NSF) International is an internationally accredited, independent, third party certifier which validates product performance claims. It is not only important, that the RO is NSF rated, but is it RATED FOR THE CONTAMINANTS YOU ARE REMOVING. There should be an NSF label on the unit that states the tested contaminants.

What is the rated output of the unit and what can I expect for the actual output in GPD?

You should have a unit that will produce 1 gallon per day(GPD) for each person in the house. A family of four should have a unit that can produce at least 4 gallons per day.

How much storage does the unit have?

RO units produce water very slowly and therefore need to store water so that it is available when you need it. Try to decide what the greatest single draw you will want to have and don't get a storage tank with a capacity any larger than this. The tank should be as small as possible and provide you with your needs because this will help reduce TDS creep. The tank should be rated in “draw down” capacity not the actual volume of the tank. The “draw down” capacity is the actual amount of water that can be stored.

Do I need a Booster pump?

If your well pump is in the basement, you will definitely need a booster pump because these types of pumps can not produce enough pressure to operate the RO efficiently. You will also need a booster pump if you plan to have the water delivered to a tap on a floor above where the RO is installed.

Do I need a TDS monitor?

TDS stands for total dissolved solids. These dissolved materials are what the RO is removing from the water. Monitoring the dissolved solid reduction will allow the customer to determine if the RO is working properly to remove contaminants in the water.