

Reverse Osmosis Units Selection Guide

Drs. Foster & Smith Educational Staff

Clean, pure water is a priority for almost all fish and plants. No equipment is more effective in helping create ideal water conditions as Reverse Osmosis (RO) units. These units filter out up to 99% of chemicals found in tap water by forcing tap water through a semi-permeable membrane.

When choosing an [RO unit](#), ask yourself the following questions:

- *How many filtration stages do I actually require?*
- *How many gallons per day (GPD) of purified water do I need?*
- *What type of membrane do I need?*
- *What do I want to remove from my tap water?*
- *Does my tap water contain chlorine?*

Filtration Stages

Different RO units feature a different number of filtration stages, generally between 2 and 4.

- 2-stage RO units are light and compact, making them easy to store and move around. They contain a small inline pre-filter and the RO membrane. A good choice when space is limited, 2-stage units represent good value at an economical price.
- 3-stage RO units are larger, and contain one or more large carbon or sediment pre-filters to protect the delicate membranes. They are high quality, excellent choices for regular use, and tend to last longer than the 2-stage units.
- 4-stage RO units include an additional final step of deionization, taking the 3-stage unit to a higher level. The deionization unit removes the small amount of contaminants remaining, filtering the water to greater than 99.9%. This is the highest level of filtration available.



Membrane Types

There are several different types of membranes in today's RO units. Your decision may be partly based on whether or not your tap water contains chlorine.

- CTA - Cellulose Tri-Acetate membranes are organic and have a slightly lower removal rate of 88-94%. Because they are organic, use them only with chlorinated water (water from a municipal source) in order to keep them clean and free of damaging molds and bacteria. They do not filter out chlorine, so allow the chlorine to dissipate out of filtered water, or treat it with a chemical dechlorinator.
- TFC - Thin Film Composite membranes are synthetic and remove between 94-98%. These units contain a carbon pre-filter to protect the membrane from chlorine damage. Use these membranes for water with or without chlorine.
- High Removal Membranes are synthetic membranes with much higher removal rates, between 97.5-99%, and are especially adept at removing silicates. These units also contain a carbon pre-filter to protect the membrane from chlorine damage. Use these membranes for water with or without chlorine.

Please refer to our [RO Unit selection guide](#) to help you choose the best RO unit for your needs.