

# SmartTips

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## What steps are necessary to maintain my water purification system?

- To consistently produce the best water quality, it is important to maintain the water purification system by replacing consumables such as cartridges, filters and UV lights on a regular basis.
- If the cartridges and filters are exhausted and the UV light is dim or burned out, there is risk of reduced purity and contamination of the product water, resulting in lost time and money.
- The frequency of consumable replacement is recommended below and will depend on the feed water quality and the volume of water processed by the water system.

Water Purification System	Consumable	Impurities designed to remove	Recommended guidelines for replacement
<b>Type I system</b> (produces 18.2 megohm water)	Deionization (DI) cartridge*	Ions and organics	12 months or purity falls below set point
	UV light	Organics and bacteria	24 months or timer/alert notifies user to change.
	Ultrafilter	Endotoxins, nucleases, bacteria	24 months or endotoxin breakthrough
	0.2 micron final filter*	Bacteria and particulates	3 months, reduced flow rate or bacteria breakthrough
<b>RO/Type II system</b>	Pretreatment- prefilters*	Particles such as rust, sediment	4 months or reduced feed water flow rate
	Pretreatment- hardness stabilizer*	Hard water	4 months or cartridge of crystals is half empty
	Pretreatment – carbon*	Chlorine	4 months
	RO membrane	Up to 98% of ions, organics, particles and bacteria	12-24 months or permeate quality drops below set point
	DI cartridge for Type II system	Ions	12 months or purity falls below set point
	Tank filter*	Airborne particulates, CO <sub>2</sub>	6 months or color changes from white to purple
<b>Distillation</b>	Tank vent filter*	Airborne particulates	6 months
	Tank UV light	Bacteria	6 months or 90 days if operated continuously
	Tank filter*	Airborne particulates, CO <sub>2</sub>	60 days or 1000 gallons

\*It is recommended to replace these consumables when the system is disinfected.

## Steps to set up maintenance schedule

1. Create a list of the consumables with part numbers used in the water purification system for easy reference and re-ordering.
2. Identify when to replace the consumable based on symptoms, time or system alert.
3. Disinfect the water system using required solutions and accessories per the manufacture instructions a minimum of once per year.
4. Clean the distillation system boiler and heating element with acid to remove deposits.
5. Create a maintenance log. Track what was replaced, when and by whom. Recommended weekly checks to monitor the system for changes is advised.

### DI systems

Monitor changes in resistivity/conductivity or TOC (Total Organic Carbon), feed water quality, flow and alert history. (Chart below is an example and will need to be customized based on system in the lab.)

Date	Product water purity	TOC**	Feed water purity**	Product water flow rate	Alert on screen	Consumables replaced/ disinfection	Initials

\*\*If applicable

### RO or RO/DI systems

Monitor changes by keeping a maintenance log for the following parameters: conductivity/resistivity of pure water, temperature, RO permeate purity, feed water purity, concentrate flow rate, operating hours for pretreatment and UV. (Chart below is an example and will need to be customized based on system in the lab.)

Date	RO permeate purity	Feed water purity **	Feed water temp	Concentrate flow	Operating hours Pretreatment / UV**	Alert on screen**	Consumables replaced/ disinfection	Initials

\*\*If applicable

Always refer to your manufacturer’s recommendations for changing consumables, disinfection and general maintenance.

Find out more at [thermofisher.com/purewater](http://thermofisher.com/purewater)

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