

## MilliQ Academic A10 Water Filtration Routine Maintenance

### Introduction:

The MilliQ water system is a system consisting of an incoming source of water from the shared reverse osmosis system on the 1<sup>st</sup> floor, a series of sequential filters to Ultra-Purify water, which includes a UV treatment and a final 2 um filtration to kill and remove microbial contaminants. THE SYSTEM DOES NOT PRODUCE PYROGEN FREE WATER. A special pyrogen final filter would need to be ordered from Millipore and installed, but that is not the current configuration. See listing of replacement parts below and note that the labwater.com filters are cheaper than those from Millipore. The instructions below were transcribed while watching a Seimens Water Technician Service the System, there will also be references to the MilliQ Academic A10 User Manual located in the metal drawers next to Horst's office.

Determination for maintenance is quite simple:

Incoming water line Screen Filter Cleaning should be performed every 6 months or as needed.

A10 TOC Monitoring Device cleaning should be performed every 6 months or as needed.

The final filter on the dispensing handle should be replaced every 1 – 6 months depending on use.

The system has day counters to time when the main system filters and UV lamp require changing; however, these are set by time and "typical usage" and are not set by a scientific method. The system measures the Resistivity of the water passing to the finishing filter in Ohms. An acceptable reading is between 18.2 (optimal) and 16.0 (minimum).

The UV lamp is listed by Millipore for annual replacement; however, the replace UV lamp message can be ignored for up to six months if the usage is light.

Monitor the system Resistivity as an indicator of total use since last filter and UV lamp change, when the reading drops to 17 Ohms, note how long that took, then order the supplies a couple of months before the system is anticipated to drop to a reading of 16 Ohms.

### Materials:

[www.thepurchaseadvantage.com](http://www.thepurchaseadvantage.com)

CQUVLQSL01 UV Light Bulb for MilliQ Academic A10 \$355.00

[www.labwater.com](http://www.labwater.com) – cheaper than Millipore

HP1001	HP Pack R1 – replacement for Q-Gard (QGARD000R1)	\$159.00
FP1001	FP Pack EX – replacement for Quantum EX (QTUM000EX)	\$191.25
FF0502	0.22 Micron Filter replaces MPGL04SK2 and MPGP02001, 2 pk	\$ 92.80

[www.millipore.com](http://www.millipore.com)

QGARD00R1	Q-Gard 1 Purification Pack	\$232.00
QTUM000EX	Quantum EX Cartridge	\$279.00
MPGL04001	Millipack-40 Filter Unit 0.22 um non-sterile, 1 pack	\$ 57.00
Or		
MPGL04SK2	Millipack-40 Filter Unit 0.22 um Sterile, 2 pack	\$116.00
or		
CDUF000D2	Pyrogard D Point-of-Use Ultrafilter, 2 pack	\$155.00

### Lab Supplies

Teflon Tape for pipe threads

## Maintenance Procedures

- 1) **Screen Filter Cleaning:**  
See pages 68 and 69 in the User Manual.

- 2) **A10 TOC Cleaning:**  
See pages 70 through 72 in the User Manual.

**Note: The unit will need to be removed from the wall for the procedures below.**

- 3) **Changing the UV Lamp:**
  - a) Unplug the unit and turn off the incoming water valve.
  - b) UV lamp is internal, so un-mount from the wall and open the casing.
  - c) Unhook the water tub using the push down quick connects>
  - d) Remove 2 each Case screws and lift case off like a PC case.
  - e) UV light is in a silver casing; unplug wires and unscrew the black plastic top.  
The bulb is quartz; wear lab gloves and do not touch it with your bare fingers, while removing it from the silver "sleeve" before pulling it out from the top of the black tube.
  - f) Exchange the bulbs, sliding the new bulb in the "sleeve", snugging down the black top, replacing the wires. (The cap must have a good seal since it is a water system.)
  - g) Re-assemble the case.
- 4) **Side Filter Pack:**
  - a) Flip the lid up and pull out the silver tab or retaining pin.
  - b) Remove the old pack and O-Rings too.
  - c) Wet new O-Rings on new pack, line up all the connectors and replace the tab or retaining pin.
- 5) **Front Pack:**
  - a) Open the front door and remove the old pack and old O-Rings too.
  - b) Wet the O-Rings on the new pack and push it into place firmly, snugging the top and bottom.  
Note: The micro-switch on the case behind the filter must be pushed and the door should close easily. (The system will give an error if this filter is not in the correct position.)
- 6) **Hand Module Filter (Finishing Filter):**
  - a) Unscrew old filter and remove the O-Ring.
  - b) Wet the O-Ring on the new filter and install by screwing into place.  
(Do not over tighten.)
- 7) **Re-Mount, Auto Clean, Air Purge and Run:**
  - a) Re-attach the hose to the quick connect.
  - b) Re-hang the unit on the wall screws
  - c) Follow the instructions on pages 61 and 62 of the User Manual, starting at the top of pg 61 "Put the Milli-Q into PRE OPERATE MODE".
  - d) Place the unit in STAND BY MODE following the several hour/overnight run.