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| Evoqua MEDICA Pro Maintenance Procedure | | | | | |
| **Purpose** | This document provides instructions for EVOQUA MEDICA PRO MAINTENANCE PROCEDURE. The MEDICA Pro 120 supplies analyzers with the Clinical and Laboratory Standards Institute and College of American Pathologists (CLSI/CAP), type I reagent water. The final purified product water is low in ionic, organic, microbiological, and particulate contaminates. | | | | |
| **Principle** | The MEDICA Pro incorporates EDI “Pulse Technology” using electrodeionization (EDI). The system delivers 4 L/min. of SLSI CLRW grade water with up to 120 L/hour productivity. The single system design incorporates all of the water purification components plus a 50 L storage reservoir. The system contains reverse osmosis (RO) modules, a water quality sensor, the EDI cartridge, conditioning cartridge, circulation pump, deionization cartridge, UV lamp, and an Ultra microfiltration filter to provide water meeting the following standards:   * Organics (TOC) less than 30 ppb * Bacterial Counts less than 1 CFU/mL * Particles >0.05 µm * Silica less than 0.05 mg/L * Resistivity down greater than 10 MΩ/cm | | | | |
| **Policy Statements** | This procedure is intended for all Chemistry personnel responsible for using, operating, and maintaining the Millipore water system for Chemistry, Coagulation or other laboratory systems and processes. | | | | |
| **Materials** | **Supplies** | | **Equipment** | **Media** |
|  | * Medpure L1 Filter (Part number LC174) | | • Evoqua (Elga) MEDICA Pro 120  SN MP0000  PN CPAFS8PRPM  PN CP2ALLRES  PN PRPK000 | * [CH](http://khan.childrensmn.org/Manuals/Lab/SOP/Chem/Forms/201961.pdf) 5.59 Evoqua Medica Pro Maintenance Log |
| **Special Safety Precautions** | * Refer to laboratory safety policies and procedures. * Refer to page 26 of the Operator Manual for Emergency Bypass procedure. Call Technical Support prior to putting the unit into Emergency Bypass. * The water may be turned off using the dark green handle located on the wall behind the unit on the right hand side. | | | | |
| **Daily Maintenance** | **Step** | **Action** | | | |
| 1 | Use a stepstool if needed to view the screen. | | | |
|  | 2 | Press the far left button, labeled “COUNTS” to view resistivity in MΩ/cm and press the button again to view temperature. Record the values on the maintenance log.   1. Resistivity should be > 10 MΩ/cm. 2. Temperature (2-35 °C). | | | |
|  | 6 | Record your initials on the maintenance log. | | | |
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| **Monthly Maintenance**  **(Bacterial Count Monitoring)** | **Step** | **Action** | | | |
| 1 | Sanitize the sampling port: working from the inside out, wash the port with a 10% bleach solution. | | | |
| 2 | Open the sampling port on the MEDICA product line and let it run at least one minute. | | | |
|  | 3 | Test the sample:   1. Remove the paddle from the case. Hold paddle by the handle to prevent contamination. Write the date, type and sampling site on the outside case. 2. Add the sample water to the upper line (18 mL) on the case. 3. Replace the paddle firmly in the case with the sample. 4. Lay the Sampler horizontally with the filter side down for 30 seconds. 5. Remove the paddle from the case and shake off the excess sample.   Pour out the remainder of the sample from the plastic case and firmly replace the paddle in the empty case. | | | |
|  | 4 | Incubate the Sampler with the filter side down at 21-25°C for 48 hours. | | | |
|  | 5 | After incubation is complete, remove the paddle from the case and examine the filter. | | | |
|  | 6 | Count the colonies. The microbial colonies will appear as spots on the filter. Their appearances will vary with the microorganisms recovered. Usually, colonies are glistening, translucent or transparent. They can be colorless, white, cream, gray or red. The size of the colonies can range from pinpoint to 5 mm. Edges may be smooth and rounded or rough and irregular. | | | |

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| Filter Replacement | **Step** | Action |
| 1 | Filters will be replaced once every 6 months by Millipore service, with the exception of the Medpure L1 (LC174) filters, which are user replaced. The Medpure filters should last 3-4 months before requiring replacement. |
| 2 | When the resistivity drops below 10 MΩ/cm, replace both Medpure L1 filters using the procedure listed below. A copy of the replacement procedure is also in the binder located next to the unit in the Operator Manual, or located on Starnet here: <https://starnet.childrenshc.org/References/labsop/chem/operator/evoqua-medica-pro-operator-manual.pdf> |
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| Medpure L1 (LC174) Filters Replacement | **Step** | Action |
| 1 | Press the POWER button on the display to turn off the power. |
|  | 2 | Open the right hand door and locate the Medpure L1 (LC174) cartridges. |
| 3 | Push one of the cartridges back into the unit, then lift, and finally pull to remove the used cartridge. Discard in regular trash. |
| 4 | Unpack a new Medpure cartridge. |
| 5 | Remove sealing plugs from inlet and outlet ports. |
| 6 | Wet O rings and slide the new cartridge into position, pushing upwards against the pack reader contacts. |
| 7 | Ease back into place, and ensure that the pack is fully engaged (down) into the retainers. |
| 8 | Repeat steps 3-7 with the second Medpure cartridge. |
| 8 | Switch Power on and follow on screen prompts to accept the new cartridge replacement date. |
| 9 | Start the unit and allow it to circulate until water quality is achieved. |
| 10 | Record the replacement on the monthly paper maintenance log. Record any troubleshooting needed. |
| **Limitations** | Refer to page 28 of the Operator Manual for common troubleshooting activities.  Testing of water quality will be performed at least annually and reviewed by the Technical Specialist of Chemistry. | |
| **References** | 1. Elga/Evoqua MEDICA Pro 30/60/120 Operator Manual Version 1, 7/2014. 2. GEN.41500 College of American Pathologists, Laboratory General Checklist, 08.22.2018. | |

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| **Historical Record** | **Version** | **Written/Revised by:** | **Effective Date:** | **Summary of Revisions** |
| 1 | Erin Bartos | December 21, 2018 | New Procedure |
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