Every 4 months maintenance

Cleaning the ancillary reagent bottle filters

Materials required:

- Filters (REF 08602474, PN 073-0033-01) order one set per bottle

Time: 20 minutes
Analyzer mode: OFF

BIOHAZARD

Wear personal protective equipment.
Use universal precautions.

Use this procedure to clean the filters in the following bottles

- RRV (reaction) bath oil
- Diluent
- Cuvette wash
- Conditioner

1. Open the filter cap at the front of each bottle and pull up the filter line.
2. Unfasten the connector at the end of the line.

   NOTE

   If any of the filters are ripped or damaged, replace them with new filters.
3. Remove the filter and inspect it for particles or dirt.
4. If dirty, clean the filters:
   a. Place the filters in a beaker filled with a fresh 10% solution of water and household bleach.
   b. After 30 minutes, remove the filters.
   c. Rinse them in deionized water.
   d. Replace them into their respective holders.
5. Fasten the connector.
6. Using a pad soaked in 5% bleach solution, clean the outside surfaces of the filter holders and hoses.
7. Insert the filter hoses into the bottles, then fasten the caps.
8. At the Operation Panel, select **Prime**.
9. At the Prime Set dialog box, select **Prime 2.**
10. Type **10** or more for the number of times in all fields, then select **Execute**.

Cleaning the pure-water bottle filter

Materials required:

- Ten 10R filters (REF 01160530, PN 073-0035-01)
- One 18R filter (REF 01448895, PN 073-0034-01)
- Hex wrench

Time: 15 minutes
Analyzer mode: READY

BIOHAZARD

Wear personal protective equipment. Use universal precautions.

Clogged filters create an insufficient flow rate and produce air bubbles.

NOTE

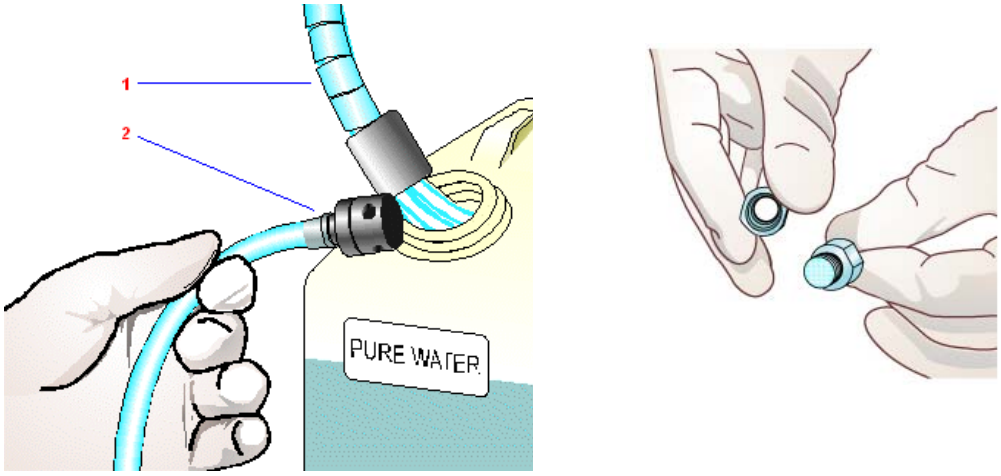
A set of filters is included in the supplies kit. To avoid system down-time, replace the filter with the one in the kit, resume operation, and then clean and store the removed filter for the next scheduled maintenance.

1 Pure-water bottle

Figure 5-24. Pure-water bottle

1. Ensure that the instrument is in READY mode.
2. Remove the silicon return hose (**1**) from the top front of the pure water bottle.

   The filter is contained in a metal filter holder attached to the end of the return hose.



1 Silicon Return Line
2 Metal Filter Holder

Figure 5-25. Pure-water bottle lines and filter

3. Using pliers if necessary, unfasten the filter holder from the end of the return hose and remove the filter.

NOTE

If the filter is ripped or damaged, replace it with a new filter (18R).

WARNING

Household bleach is 5% or 6% sodium hypochlorite. When handling bleach, which can be used as a cleaning and antiviral agent, wear protective clothing, gloves, and safety glasses. It is harmful if swallowed and may cause eye or skin irritation.

4. To clean the 18R filter:
   a. Place the filter in a beaker filled with a freshly made 10% solution of household bleach and water.
   b. After 30 minutes, remove the filter and rinse it with deionized water and replace onto the filters.
5. Remove the ten small 10R Teflon filter hoses from the top front of the water bottle.

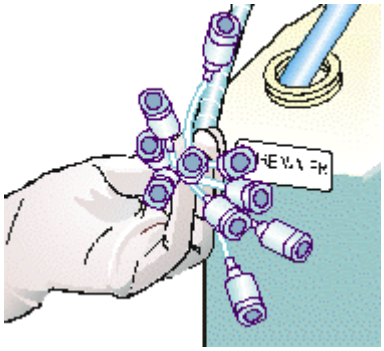


Figure 5-26. 10R filters

CAUTION

To assist with removal as well as to avoid crimping these thin filter hoses, remove only 3 or 4 hoses from the water bottle at a time.

6. First unfasten the filter holder from the end of each tube, and then remove the filter.
7. To clean the 10R filter:
   a. Place the filter in a beaker filled with a freshly made 10% solution of household bleach and water.
   b. After 30 minutes, remove the filter and rinse it with deionized water and replace onto the filters.

CAUTION

Ensure that the filters are properly positioned with the filter holder to avoid filter shift.

8. Using a lint-free towel soaked in 5% bleach solution, clean the outside surfaces of the filter holder and hose.
9. Insert the silicon filter hose into the water bottle.
10. Insert the ten Teflon filter hoses in the tank, 3 or 4 at a time.
11. Prime the lines:
    a. At the Operation Panel, select the **Prime** button.
    b. In the PRIME Set dialog box, select **PRIME 2** and type **10** or more for the number of times in all fields.
    c. Select **Execute**.

Replacing the reaction and dilution cuvettes

Materials required:

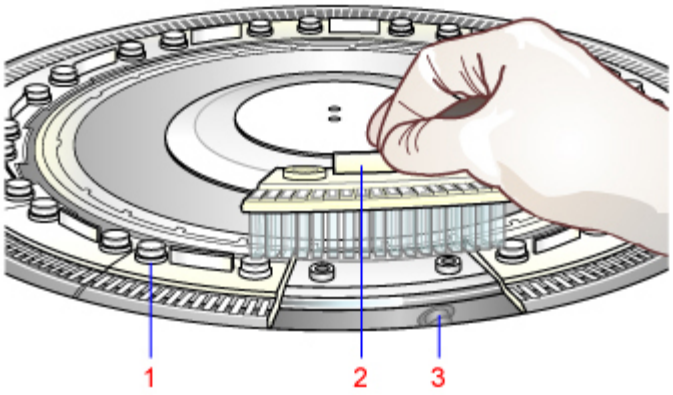
- 13 sets of reaction cuvettes (sample cell RRV, single cuvette set, REF 05024992, PN 073-0023-02)
- 6 sets of dilution cuvettes (sample cell DTT, single cuvette set, REF 05049669, PN 073-0022-01)

BIOHAZARD

Wear personal protective equipment. Use universal precautions.

Time: 20 minutes
Analyzer mode: OFF

Replace the 20 sets of reaction (RRV) cuvettes and 6 sets of dilution (DTT) cuvettes once every four months.



1 Thumbscrew
2 Tab
3 Detector Unit

Figure 5-27. Reaction and dilution cuvette components

1. Put the system in Standby Mode.

WARNING

Failure to put the analyzer into Standby mode will result in the RRV bath oil over-filling. Excess RRV bath oil can damage the spectrophotometer when the RRV cuvettes are reinstalled.

Turn off the power before removing or replacing cuvettes, to allow the RRV to move freely.

2. Remove the 13 cuvette sets on the reaction tray (RRV).
   a. Unfasten the 2 thumbscrews (**1**) on each set.

CAUTION

Be careful not to get RRV bath oil inside the cuvette. If you do, allow the cuvette to dry overnight.

CAUTION

Be careful not to drop the cuvette set screws into other components of the instrument. **Do not** remove the cuvette if it is in front of the detector (**3**).

   b. Hold the cuvette set by the tab (**2**) and lift it from the tray.
   c. To remove the cuvette sets located by the detector unit or under the cuvette wash station (WUD), rotate the reaction tray by hand until the cuvettes are in an accessible location.

3. Inspect the reaction bath oil in the RRV bath ring.
   - If particulate matter is found, remove it with a transfer pipette or other similar device.
   - If the contamination is more drastic, such as a WUD overflow causing large quantities of liquid to float on the oil, then discontinue this procedure and call your local technical support provider or distributor.
4. Install the new cuvette sets on the RRV and fasten the set screws.

CAUTION

Do not touch or scratch the cuvette surfaces or wipe the cuvette interior, to avoid damaging the cuvettes.

5. Remove the 6 cuvette sets on the dilution tray (DTT).
    a. Unfasten the 2 thumbscrews (**1**) on each section.
    b. Hold the cuvette section by the tab (**2**) and lift it from the tray.
    c. To remove the cuvettes under the dilution washer (DWUD) or cuvette splash cover, rotate the dilution tray by hand until the cuvettes are clear.
6. Install the new cuvette sets on the DTT and fasten the set screws by hand.
7. Return the system to Operating mode.
8. Perform the daily Shutdown wash (WASH2) routine and verify the operation.
9. Perform the lamp energy check procedure.
10. Perform the cell blank measurement, and if the cell blank run was completed successfully, save the results.