

# Cleaning Instructions For Reverse Osmosis Elements Using AQUAzzOL Products

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## Cleaning Solutions for 1 cubic meter of Water (264.4 Gallons)

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NOTE: The water used to prepare either solution must be free of residual chlorine or other oxidizing agents. (Best Results can be obtained if permeate is used)

### AQUAzzOL 601

NOTE: Cleaning solution AQUAzzOL 601 may cause to temporary increase in membrane soft passage and of water flux beyond specifications. The condition should last no longer than 24 hours.

This solution is used to remove acid soluble substances such as metal hydroxides and calcium carbonate. It should also generally used before AQUAzzOL 701 if both solutions are used.

**Usage qty : 25 kgs of AQUAzzOL 601 solution should be mixed with 500 lts of Permeate water**

### AQUAzzOL 701

This solution is used to remove organic substance and microbiological slimes.

Both cleaning solutions may be used at a temperature range from ambient up to 40° C (104° F) for 45 minutes and at the recommended flow rate as indicated below. The system pressure should be the minimum required to achieve specified flow, but in no case should be pressure drop across any vessel exceed 60 psig.

**Usage qty : 25 kgs of AQUAzzOL 701 solution should be mixed with 500 lts of Permeate water**

Elements may be cleaned with anionic or nonionic surfactants. Cationic surfactants should be avoided as irreversible fouling may occur.

### Maximum Cleaning Feed Flow rate

Cleaning Instruction Using AQUAzzOL

Element Nominal Diameter

4"

2.3 m<sup>3</sup>/hr./tube (10 gpm/tube)

8"

9.1 m<sup>3</sup>/hgr/tube (40 gpm/tube)

*Pressure tubes are to be cleaned only in parallel. Where a series array of pressure tubes is used for higher recoveries, each bank shall be cleaned separately.*

### **Recommended Procedure for Short Term RO System Down periods.**

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The following procedure may be used for down periods of less than 7 days. For longer shutdown periods, see Extended down Time Procedure.

1. Shut down the reverse osmosis system in accordance with all written instructions.
2. Flush the system with permeate water.
3. Flush time should be minimum of 30 minutes based on recommended cleaning instruction flow rates.
4. Repeat this procedure every 2 days when the water temperature exceeds 20° C.
5. For systems exposed to direct sunlight or where the water temperature exceeds 45 ° C

#### **NOTES:**

- A. The water used to prepare this solution must be free of any residual chlorine or similarly active oxidizing agents. For seawater systems, use first stage permeate. For brackish water systems, use permeate or treated feed water to the system.
- B. Flushing may be done using the cleaning system.

## Recommended Procedure for Extended RO System Down Periods.

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The following procedure may be used for extended system down periods provided the systems has operated for a minimum period of 48 hours, the temperature does not exceed 45° C and the system is not exposed to direct sunlight.

1. Shutdown the reverse osmosis system in accordance with all written instructions.
2. Flush the system with **AQUAzzOL 801** solution for 10 minutes
3. With the system full of **AQUAzzOL 801**, close all inlet and outlet valves.
4. Repeat steps two and three every 30 days.

**Usage qty : 10 kgs of AQUAzzOL 801 solution should be mixed with 500 Its of Permeate water**

### Notes:

- ❑ The water used to mix with **AQUAzzOL 801** solution must be free of any residual chlorine or similarly active oxidizing agents. For sea water systems, use first stage permeates. For brackish water systems, use permeate or treated fed water to the system.
- ❑ Flushing may be done using the cleaning systems.
- ❑ On system restart, the permeate should be directed to drain for a minimum of one hour to adequately flush the preservative residual.
- ❑ A temporary loss of water flux may occur after restart of the system. This should not last longer than two days.