

Guidelines for Storage and Care

Toray Advanced Materials Korea Inc. recommends that CSM RO/NF membrane elements must be stored appropriately and cared for to maximize its lifetime. It is highly recommended that the user follow the procedures outlined below:

Storing and caring for elements in its cardboard box packaging

Toray Advanced Materials Korea Inc. supplies three types of CSM RO/NF membrane elements

- Dry-type element
- Wet-type element
- Elements for ultrapure water (UPW) applications

Dry elements are packaged inside a polypropylene (plastic) bag. Wet elements are also packaged inside a polypropylene (plastic) bag that is vacuum-sealed but with a preservative solution. Similarly, UPW elements are vacuum-sealed with ultrapure water inside a polypropylene (plastic) bag. Finally, all elements are packaged with a cardboard box.

[Dry-type elements]

- Storage temperature must be between 0°C and 45°C.
- Moisture damages the cardboard box, and therefore the element should be stored indoors or in dry conditions.
- The products should be used within 6 months. The maximum storage period must not exceed 12 months.

[Wet-type elements]

- Storage temperature must be between 0°C and 32°C.
- Moisture damages the cardboard box, and therefore, the element should be stored indoors or in dry conditions.
- To inhibit the growth of organisms, wet type elements come packaged with a preservative solution (this solution is food grade SBS 1 wt%). When exposed to the atmosphere, the SBS solution oxidizes and turns into sulfuric acid, and as a result, the solution loses its preservative function. To prevent this, make sure the element is tightly vacuum sealed inside the polypropylene (plastic) bag.
- The elements must be used within six months after the delivery date. Where storage exceeding six months is required, reapply a new preservative solution and vacuum seal the element every six months. In cases where more extended storage is required without reapplication of a new solution and reseal (such as due to delays in delivery), the storage of elements must not exceed a year.

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[Ultrapure Water elements]

- For ultrapure water elements, organic contamination is high because they do not come packaged with preservative solutions. For proper storage, refrigeration of elements is required at a temperature of 0°C to 5°C.
- Moisture damages the cardboard box, and therefore the element should be stored indoors or in dry conditions.
- The element must be used within one month after the date of delivery.

Storage and Care procedures after installation:

After connecting CSM RO elements to the pressure vessel, it is recommended to run the elements continuously. However, for circumstances involving storage and care for short or long periods follow the instructions listed below:

For shorter periods of less than a week:

- Flush the RO system for 30 minutes using the permeate water produced by the RO elements. There must be no air within the system, and to achieve this close the valves only after filling the system with water. Afterward, monitor the elements to make sure no drying occurs.
- Storage temperature must be between 0°C and 32°C, and to prevent organic contamination, repeat the above procedures at least once a day.

For more extended periods of over a week:

- Flush the RO system for 30 minutes using the permeate water produced by the RO elements. There must be no air within the system, and to achieve this close the valves only after filling the system with water. Afterward, monitor the elements to make sure no drying occurs.
- Storage temperature must be between 0°C and 32°C, and to prevent organic contamination, repeat the above procedures at least once a day.

Safety Guidelines:

- Wet-type elements are packaged in approx. 0.5-1.0% sodium bisulfite solution.
DO NOT ingest this solution. Solutions may be irritating to eyes and skin. Protection equipment is required. For details, see SDS (Safety Data Sheet) of sodium bisulfite solution.
- The element shell is FRP(Fiber Reinforced Plastic). Be aware of glass fiber strands and use safety equipment.

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