

# Membrane Storage

## Storage of new Membranes

Most polymer membranes (e.g. flat sheet, spiral wound modules, hollow fibre modules) are conditioned with a preservative agent like glycerol, propylene glycol or sodium metabisulfite after manufacturing to ensure storage stability. The membranes are usually sealed in plastic bags with oxygen barrier and should only be unpacked before use. Most suppliers warranty up to 6 – 12 months of storage time for new elements stored in their original packaging.

The following storage conditions are recommended:

- Temperature: 5 – 30 °C (preferably 5 – 15 °C), no freezing!
- Inside a building
- Not supposed to direct sunlight

## Storage of used Membranes

Membranes should be cleaned after production and need to be stored wet. Storage can take place either inside the system or outside in closed containers or sealed bags. It is recommended to store the membranes in a preservative solution if they are not used for more than 1-2 days. For storage in sealed bags, the membrane should be soaked in the preservative solution for 15-60 min and sealed with an oxygen barrier afterwards (e.g. plastic bag with heat seal).

The following preservative solutions (in food grade quality if required) are recommended:

- Sodium metabisulfite 1 - 2%
- Citric acid 1%
- Ethanol solution 20 – 30%
- Glycerol 80 – 100%

Attention should be payed to the chemical limitations of the individual membrane. The storage conditions should comply with the ones described in the section “Storage of new membranes”.

The preserved membrane should be inspected regularly for microbiological growth and a pH measurement should be conducted. The storage solution must be exchanged as the circumstances require (e.g. observation of turbidity). Sodium metabisulfite may oxidize during storage resulting in a pH decrease. The solution must be replaced at a pH of  $\leq 3$  to avoid membrane damages.

Ceramic membranes as well as certain types of hollow fibre and tubular membranes can be stored dry (refer to membrane spec sheet).

It is recommended to carry out an appropriate CIP cycle before the next production after storage.

**Caution:**

- Handling of membranes containing a preservative solution requires appropriate protective clothing like gloves, safety glasses, etc.
- This information is not intended to be exhaustive. Errors and omissions excepted. Please study the membrane spec sheets or contact the supplier for detailed information on chemical stability and storage conditions. In no event will MMS be liable for any damages in relation to membranes or systems.

**Caution**

