



Datasheet: Zeolite NaA Membranes

Membrane elements:

Dimensions:	1-channel tube 250 x 10 x 7 mm, effective area 0,005 m ² 4-tube assembly 1200 x 20,5 mm, effective area 0,09 m ²
Substrate material:	α -Al ₂ O ₃
Top layer:	Zeolite NaA
Coating position:	Inside of the tube

Limits of operation

Temperature:	150 °C
pH:	6.5-7.3
Water concentration in feed	<20 wt%,
Feed pressure	< 10 bar
Temperature change	< 10 K/min
Vapor velocity in channels	< 10 m/s
Acid content	< 30 mg/l
Base content	none
Dissolved solids or salts	none
Aldehyde content	< 50 mg/l
Fusel oil content	< 10 mg/l
CO ₂ content	< 100 mg/l

Handling, storage and cleaning

Handling

Always wear clean gloves when handling the membranes in order to prevent contamination with fungi. **Warning:** The membranes are brittle and cannot withstand shock, excessive vibration nor mechanical bending forces.

Storage

The membranes can be stored in a dry place under ambient conditions. To prevent the risk of fungi growth on the ceramic element the relative humidity should not exceed 60%. The membranes must be stored above 10 degree Celsius.

Cleaning

At the end of the standard dehydration process flush the element with clean solvent. In some cases special CIP procedures might be applicable. Please consult Pervatech for more information.

Performance

The initial overall average permeate flux is 4.5 kg/(m² h) and the water concentration of the permeate is > 97 wt%

based on pervaporation tests at the following operating conditions:

- feed composition: 10 wt% water, 90 wt% ethanol,
- feed temperature: 100 °C,
- feed flow rate: 600 l/h,
- permeate pressure: 20 mbar.

Vapor permeation is the recommended application of these membranes. The real performance depends on the operation conditions and feed composition.