



## Datasheet: Zeolite NaA Membranes

### Membranes:

Dimensions: 1-channel tube 250 x 10 x 7 mm, effective area 0,005 m<sup>2</sup>

Substrate material:  $\alpha$ -Al<sub>2</sub>O<sub>3</sub>

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<sub>2</sub> content < 100 mg/l

### Handling, storage and cleaning

Handling: Wear clean gloves 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 °C.

#### 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/(m<sup>2</sup> 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.