



# PERVATECH<sup>®</sup>

## Datasheet

# TUBULAR HYBRID SILICA HybSi<sup>®</sup> ACID RESISTANT MEMBRANE

Tubular Hybrid Silica HybSi<sup>®</sup> Acid Resistant membranes have hydrophilic characteristics, which means that the water content of the feed passes preferentially through the membrane.

### MEMBRANE ELEMENT

Geometry	Tubular
Dimensions	1-channel tube 250 x 10 x 7 mm, effective membrane surface area 0.005 m <sup>2</sup> 1-channel tube 500 x 10 x 7 mm, effective membrane surface area 0.01 m <sup>2</sup>
External diameter tolerance	10 mm + 0.5 mm / - 0.0 mm
Substrate material	$\alpha$ -Al <sub>2</sub> O <sub>3</sub>
Top layer	Hybrid Silica AR Standard
Coating position	Inside of the tube
Tube ends	Tube ends are glazed

### OPERATIONAL WINDOW

Temperature	Maximum 150 °C
Pressure	Maximum 10 bar
Burst pressure	> 20 bar
pH	0.5-8.0
Chemical resistance	No reactive (e.g.) secondary amines, no solids

### HANDLING, CLEANING AND STORAGE

*Please note: the membranes are brittle and cannot withstand shock, excessive vibration nor mechanical bending forces.*

#### Handling

- Always wear clean gloves when handling the membranes to prevent contamination with fungi.
- Keep all pressure gradients smaller than 0.5 bar/min.
- Hybrid silica HybSi<sup>®</sup> Acid Resistant membranes are sensitive towards sudden strong mechanical shocks and pressure fluctuations/shocks. These pressure fluctuations should be within limits.
- Do not expose wetted membranes to freezing temperatures.

**HybSi<sup>®</sup>**  
Pervaporation Membranes

 **PERVATECH<sup>®</sup>**

## Cleaning

At the end of standard dewatering processes:

- Flush the element with clean solvent or demineralized water (max. 50 °C).
- CIP the element with appropriate means. This is either with its own solvent or typically 0.5 % to 1 % enzymatic neutral non-ionic detergent. In some cases, special CIP procedures might be applicable.
- Sterilize with formaldehyde (1 %) or equivalent.
- **Warning: Do NOT use reactive amines or alkaline cleaning agents as they may damage the membrane.**

Please consult Pervatech for more information or consult the separate cleaning datasheet.

## Storage

- Store the membranes in a dry place under ambient conditions.
- Make sure that the relative humidity does not exceed 60 %, to prevent the risk of fungi growth on the ceramic element.

## EXAMPLES OF APPLICATIONS WITH TUBULAR HYDROPHILIC HYBRID SILICA HYBSI® ACID RESISTANT MEMBRANES

- Breaking of azeotropes
- Removal of water from organics such as alcohols, aprotic solvents, DMAc, DMSO, DMF, NMP, phenol, THF, ACN, esters, acetates, ketones or acids and alike
- Dewatering of organic acids
- Dewatering of food products (e.g. natural vinegar, whiskey), without loss of flavor and fragrance components and therefore retention of taste and smell.
- In-situ dewatering of condensation reactions
- Dewatering of essential oils
- Separation of low molecular weight solvents (e.g. MeOH) from higher molecular weight solvents (purification)

Heliumstraat 11  
7463 PL Rijssen  
The Netherlands  
T +31 548 530 360  
info@pervatech.nl  
pervatech.com