

## Datasheet: POMS Membranes

POMS (Poly Octyl Methyl Siloxane) membranes have hydrophobic/organophilic characteristics, in which the organic constituent of the feed passes preferentially through the membrane.

### Membrane elements:

Dimensions:	1-channel tube 250 x 10 x 7 mm, effective area 0,005 m <sup>2</sup> 1-channel tube 500 x 10 x 7 mm, effective area 0,01 m <sup>2</sup> 4-tube assembly 1200 x 25 mm, effective area 0,1 m <sup>2</sup> 4-tube assembly 600 x 25 mm, effective area 0,05 m <sup>2</sup>
Substrate material:	$\alpha$ -Al <sub>2</sub> O <sub>3</sub>
Top layer:	POMS
Coating position:	Inside of the tube

### Limits of operation

Temperature:	70 °C (short-term 80 °C)
Pressure:	max. 10 bar
pH:	3-10
pre-filtration:	10 $\mu$ cartridge filter

### Storage and cleaning

Storage before use:	Out of direct sunlight Room temperature < 70% RH
Storage after use (short) :	In a solution of water and 10-15% IPA or water with 2500 ppm Sodium Meta Bisulfite
Storage after use (long):	In a solution of water with 0.7% Benzalkonium
Cleaning:	The element can be cleaned by flushing with water to which a non-ionic detergent (0.1% KOH) is added. Also enzymatic solutions dependent on the feed composition may be used. In case of food & additives processing contact us for alternatives.

### Sterilization options

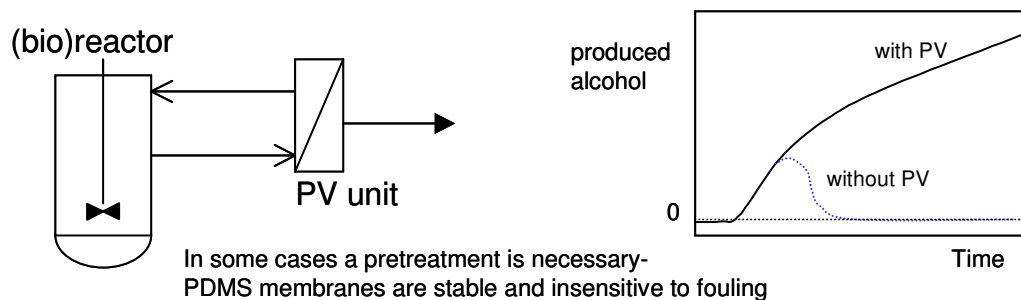
Steam:	106-108°C
Flushing:	With ethylene oxide or 100% ethanol

### Possible applications with hydrophobic/organophilic membranes

- Recovery or extraction of organics from natural feed like fruit juices, wine, beer, coco-nut oil, essential oils (carvon, limonene) and in combination with fermentation.
- recovery of organics in biotech or biotech related food applications such as in natural feed like fruit juices, wine, beer, coco-nut oil, essential oils (carvon, limonene) and in combination with fermentation.
- Removal of ethyl alcohol (and other alcohols) from wine and beer
- Upgrading reverse osmosis permeate in juice production.
- Combination with bioreactors in production of alcohols (ethanol, IPA, butanol), ABE (acetone, butanol, ethanol), aldehydes, flavor production as well as acid production.

- Removal of VOC
- In general POMS membranes are more open than PDMS membranes. However, in some solutions, especially >>C2 and low concentrations POMS performs better than PDMS. This especially holds for e.g. phenolic types of molecules.

Typical example of PV process in combination with bioreactors:



*Principle of membrane reactor for continuous recovery of product (alcohols, aromas)*

*The system with PV continues to produce alcohol while other systems stop when inhibiting amounts of alcohol (or other inhibitor) have been reached.*