

Datasheet: PDMS Membranes Flat Sheet

PDMS (polydimethylsiloxane) membranes have hydrophobic/organophilic characteristics, in which the organic constituent of the feed passes preferentially through the membrane.

Membrane construction

Element sizes:	Flat sheet 297 x 210 mm (package of 3 pcs.) Flat sheet 210 x 68 mm (package of 12 pcs.)
Substrate material:	PET
Intermediate layer:	Type of PI
Top layer:	PDMS, Tg 130 °C

Limits of operation

Temperature:	80 °C
Pressure:	5 bar
pH:	1-12

Handling, storage and cleaning

Handling:	Wear clean gloves in order to prevent contamination with fungi.
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 metabisulfite
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 (10 ppm KOH) is added. Also enzymatic solutions dependent on the feed composition may be used. In case of food and additives processing contact us for alternatives.

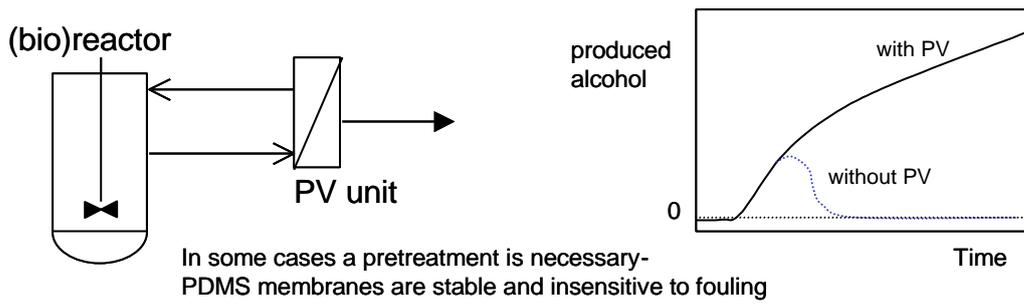
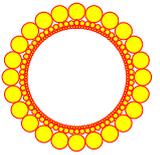
Sterilization options

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, for example fruit juices, wine, beer, coconut 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 VOCs.

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.*