

## PCI - WFF0285 Classic Ultrafiltration Tubular Membrane

### Basic Characteristics

- Hydrophilic tubular polyvinylidene fluoride membrane cast on a composite polyester carrier
- Tubular membrane available in 14.4 mm
- Structure asymmetric
- Developed for use in a variety of filtration processes in industrial food and non-food applications
- High performance and a very good anti-fouling behaviour
- Favourable non-fouling characteristics in many applications
- High thermal and chemical resistance, especially to solvents
- Membrane material composed of polyvinylidene fluoride
- Membrane carrier is a composite polyester non-woven

### Applications

- Separation of proteins/enzymes from fermentation slurries
- Concentration of yeast and bacteria slurries
- Concentration of metal hydroxides and polymer suspensions
- Treatment of waste water
- Paint/water separation
- Pretreatment of process and drinking water
- Concentration of oil-in-water emulsions

### Cleaning

Depending on the nature of the feed solution the following cleaning agents can be chosen:

NaOCl (active chlorine)	H <sub>2</sub> O <sub>2</sub>	NaOH	Nitric acid	Phosphoric acid	EDTA	Sodium tri-phosphate	Citric acid	Enzymatic compounds
500 ppm max.	1000 ppm max.	pH ≤ 11	pH ≥ 1	pH ≥ 1	pH ≤ 11			

It is recommended to keep the pH between 1 and 11 and not to exceed a temperature of 40 °C during cleaning and/or disinfection. If those standard cleaning techniques fail to remove the foulants, more concentrated cleaning solutions can be tried. Please contact PCI Membranes for recommendations. It has to be stressed, however, that no warranty can be given on the efficiency of any cleaning nor on the membrane performance after such cleaning attempts.

### Storage

New membrane modules can be stored as supplied. Membrane modules should be stored in a dry, normally ventilated place, away from sources of heat, ignition and direct sunlight. Store between 0 and 40 °C. The membrane modules should not be subjected to any freezing temperatures. After use, UF membranes need to be stored wet at all times. To avoid biological growth during shutdowns or storage, wet membranes should be treated with a compatible biocide. For short-term shutdowns, a daily flush with permeate quality water containing up to 2.0 ppm free available chlorine for 30 to 60 minutes may be adequate for bacteria control. In case of long-term storage, membranes should be cleaned before the disinfection step is carried out. For disinfection, a 1% sodium metabisulfite solution can be used. In either situation, modules should be stored hydraulically filled.

### Performance Data

Parameter	Unit	F0285	Remarks
Initial flux	l/m <sup>2</sup> .h 100 kPa	1000	± 30%; RO-water at 25 °C
Transmembrane pressure	kPa	-20 .. + 300	
Nominal pore size	nm	25	
pH		2 - 10	at 25 °C
Chlorine exposure	ppm.h	250000	at 25 °C
Temperature	°C	1 - 70	

Operation of membranes at any combination of maximum limits of pH, concentration, pressure or temperature, during cleaning or production, will severely influence the membrane lifetime.

### Solvent Resistance

Since the resistance of the membrane to solvents strongly depends on the actual process conditions, the indications given below should only be considered as guidelines.

- Acids, pH > 2 +
- Bases, pH < 11 +
- Organic esters, ketones, ethers --
- Aliphatic alcohols ++
- Aliphatic hydrocarbons ++
- Halogenated hydrocarbons ++
- Aromatic hydrocarbons +
- Polar organic solvents --
- Oils ++