

X-FLOW COMPACT 4.0G

ULTRAFILTRATION MEMBRANE

MEMBRANE ELEMENT DATASHEET

3 INCH 8.0 MM Compact 4.0G
ARTICLE CODE : 7381KPC99RH

APPLICATIONS

- Effluent treatment
- Membrane bioreactor

GENERAL 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	++

Sodium Hypochlorite

- Typical 200 ppm, at $\leq 40\text{ }^{\circ}\text{C}$
- Maximum 500 ppm
- 250.000 ppm hours cumulative at $30\text{ }^{\circ}\text{C}$

CLEANING CHEMICAL RESISTANCE

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

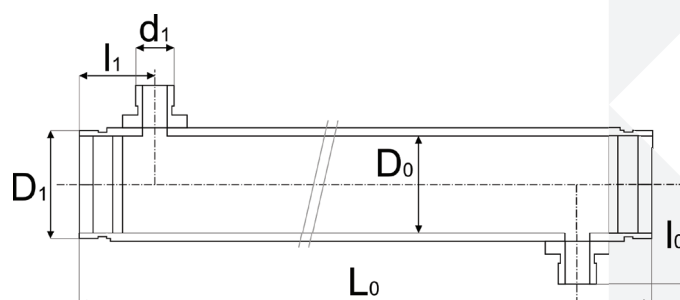
NaOCl (active chlorine)	500 ppm max.
H ₂ O ₂	1000 ppm max.
NaOH	pH ≤ 11
Nitric acid	pH ≥ 1
Phosphoric acid	pH ≥ 1
EDTA	pH ≤ 11
Citric acid	
Enzymatic compounds	

It is recommended to keep the pH between 1 and 11 and not to exceed a temperature of $40\text{ }^{\circ}\text{C}$ during cleaning and/or disinfection. If those standard cleaning techniques fail to remove the foulants, more concentrated cleaning solutions can be tried. Please contact X-Flow 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.

ELEMENT SPECIFICATIONS

Membrane diameter [mm]	Membrane area [m ²]	Module diameter D ₀ [mm]	Module length L ₀ [mm] (± 1)	Feed connection D1 [inch]	Permeate connection d1 [inch]	Permeate length l ₀ [mm]	Permeate position l1 [mm] (± 1)
8.0	4.0	90	3000	3	1	80	66

For connection specifications please check the corresponding connection configuration data sheet.



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OPERATING SPECIFICATIONS

Max. feed pressure	Max. permeate pressure	Max. trans-membrane pressure	Max. temp.
[kPa]	[kPa]	[kPa]	[°C]
1250	1250	-20 ~ +500	70

- To avoid mechanical damage, do not subject the membrane module or element to sudden temperature changes, particularly decreasing. Do not exceed 70 °C process temperature. Bring the module or element back to ambient operating temperature slowly (typical value 1 °C/min). Failure to adhere to this guideline can result in irreparable damage

MEMBRANE CHARACTERISTICS

- Hydrophilic tubular polyvinylidene fluoride membrane cast on a composite polyester/polyolefine carrier
- Structure asymmetric
- Mean pore size of 30 nm
- High performance and a very good anti-fouling behaviour

TECHNICAL SPECIFICATIONS

Weight Specifications

Dry weight of membrane element
ca. 5 kg [11 lbs]

Membrane element filled with water
ca. 15 kg [35 lbs]

Materials of Construction

Housing	Glass fibre reinforced epoxy, drinking water quality
Potting	EP resin
Membrane	- Material composed of polyvinylidene fluoride - Carrier is a composite polyester woven/non woven

Process Characteristics (water, 20°C)

Hydraulic membrane diameter	Crossflow flow rate (*)	Pressure-drop across module (laminar flow) (**)	Pressure-drop across module (turbulent flow) (**)
[mm]	[m³/h]	[kPa]	[kPa]
8.0	10.0 x v	0.5 x L ₀ x v	2.1 x L ₀ x v ^{1.75}

(*) superficial velocity (v) in m/s [ft/s]

(**) module length (L₀) in m

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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. The membrane is compatible with many common disinfecting agents or biocidal preservatives. 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.



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