X-FLOW COMPACT 33
ULTRAFILTRATION MEMBRANE

MEMBRANE ELEMENT DATASHEET

8 INCH 5.2 MM Compact 33
ARTICLE CODE : 7821KPK99R

APPLICATIONS

- Pre-treatment RO and NF
- Surface water
- Drinking and process water production
- Recovery of sandfilter backwash water
- Effluent treatment
- Membrane bioreactor
- Wastewater treatment
- Treatment of oil-in-water emulsions

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 guideline.

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 ≤ 40 ºC
- Maximum 500 ppm
- 250.000 ppm hours cumulative at 30 ºC

CLEANING CHEMICAL RESISTANCE

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

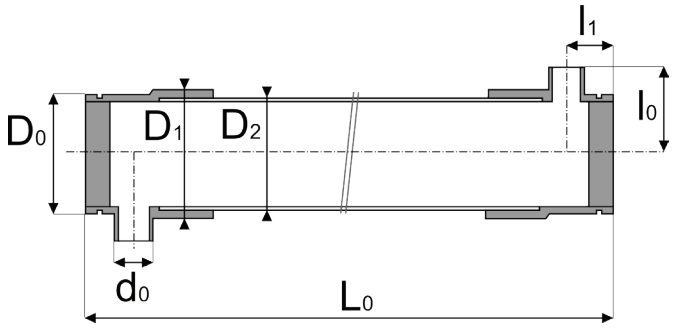
NaOCl (active chlorine)	500 ppm max.
H2O2	1000 ppm max.
NaOH	pH ≤ 11
Nitric acid	pH ≥ 1
Phosphoric acid	pH ≥ 1
EDTA	pH ≤ 11
Citric acid	
Enzymatic compounds	

It is recommended to keep the pH between 1 and 11 and not to exceed a temperature of 40 °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

Hydraulic membrane diameter [mm]	Membrane area [m^2]	Feed connection D_0 [mm]	Module length L_0 [mm] (±1)	Saddle diameter D1 [mm]	Module diameter D_2 [mm]	Permeate connection d_0 [mm]	Permeate length l_0 [mm] (±1)	Permeate position l_1 [mm] (±1)
5.2	33	220.0	3000	240	213	73.0	165	90

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



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OPERATING SPECIFICATIONS

Max. feed pressure	Max. permeate pressure	Max. transmembrane pressure *)	Max. temp.
[kPa]	[kPa]	[kPa]	[°C]
20- 60 °C 800	at 20 °C 650	at 20 °C -100 ~ +500	60
	at 30 °C 550	at 30 °C -100 ~ +500	
	at 40 °C 450	at 40 °C -100 ~ +500	
	at 50°C 380	at 50 °C -50 ~ +500	
	at 60 °C 300	at 60 °C -50 ~ +500	

*) negative TMP correlates with backwash pressure

- Backwash water should be free of particulates and should be of permeate quality or better
- Backwash pumps should preferably be made of non-corroding materials, e.g., plastic or stainless steel. If compressed air is used to pressurize the backwash water, do not allow a two-phase air/water mixture to enter the element
- To avoid mechanical damage, do not subject the membrane module or element to sudden temperature changes, particularly decreasings. Do not exceed 60 °C process temperature. Bring the module or element back to ambient operating temperature slowly (typical value 3 °C/min). Failure to adhere to this guideline can result in irreparable damage

MEMBRANE CHARACTERISTICS

- Hydrophilic tubular polyvinylidene fluoride membrane cast on a polyester carrier
- Structure asymmetric
- Mean pore size of 30 nm
- Developed for use in large-scale processes for water purification
- High performance and a very good anti-fouling behaviour
- Membrane elements can be backflushed for efficient membrane cleaning resulting in a higher average product flux

TECHNICAL SPECIFICATIONS

Weight Specifications
Dry weight of membrane element
ca. 45 kg [100 lbs]

Membrane element filled with water
ca. 110 kg [242 lbs]

Materials of Construction

Housing	PVC-C, 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]	[m^3/h]	[kPa]	[kPa]
5.2	53.5 x v	1.2 x L_0 x v	3.6 x L_0 x $v^{1.75}$

(*) superficial velocity (v) in m/s
(**) module length (L_0) in m

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STORAGE

New membrane modules can be stored as supplied in the original packaging. The membrane elements contain an aqueous preservation solution of glycerine (20wt%) and sodium metabisulfite (1wt%).

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.

Shelf life is a maximum of 6 months for unused modules in unopened packaging under correct storage coinditions after transfer of ownership for X-Flow BV to the Client. After the maximum period of 6 months all warrantees are null and void unless otherwise agreed in writing between the parties.

After use, the UF membrane modules need to be stored wet at all times. To avoid biological growth during shutdowns or storage, wet membranes could be treated with a compatible biocide. The membrane is compatible with many common disinfecting agents or biocidal preservatives.

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 0.5% sodium metabisulfite solution can be used. In either situation, modules should be stored hydraulically filled.

In case of long-term storage (>7 days), membranes should be disinfected. The membranes should be cleaned using a CEB before the disinfection step is carried out. For disinfection, a 0,5% sodium metabisulfite solution can be used. In both short and long term storage situations, the modules should remain filled with storage solution.

PENTAIR

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