Flat Sheet Membranes

Ultrafiltration Membranes

The range of ultrafiltration membranes from Alfa Laval covers a broad spectrum of flux properties and molecular weight cut-off values.

The membranes are based on a unique construction of polypropylene (PP) support material. All materials used for the production of these membranes comply with EU Regulation (EC) 1935/2004 and Commission Directive 2002/72/EC as well as FDA regulations (CFR), Title 21, and the membranes are thus suitable for use within food and pharmaceutical processing applications.

The Alfa Laval flat sheet membranes are available by the metre, as standard sheets (size 20 x 20 cm), and of course in all Alfa Laval plate-and-frame configurations.

All Alfa Laval flat sheet membranes will be delivered with necessary lock and passage rings.

Designation	Process	Characteristics	MWCO
GR40PP	UF	Polysulphone	100,000
GR51PP	UF	Polysulphone	50,000
GR60PP	UF	Polysulphone	25,000
GR61PP	UF	Polysulphone	20,000
GR70PP	UF	Polysulphone	20,000
GR80PP	UF	Polyethersulphone	10,000
GR81PP	UF	Polyethersulphone	10,000
GR90PP	UF	Polyethersulphone	5,000
GR95PP	UF	Polyethersulphone	2,000
FS40PP	UF	Fluoro polymer	100,000
RC70PP	UF	Regenerated cellulose acetate	10,000
ETNA01PP	UF	Composite fluoro polymer	1,000
ETNA10PP	UF	Composite fluoro polymer	10,000

Recommended operation limits:

Production	GR	FS	RC	ETNA
pH range	1-13	1-11	1-10	1-11
Pressure, bar	1-10	1-10	1-10	1-10
Temperature, °C	0-75	0-60	0-60	0-60
Cleaning (3 hours per day)* pH range	1-13	1-11.5	1-11.5	1-11.5
Pressure, bar	1-5	1-5	1-5	1-5
Temperature, °C	0-75	0-65	0-60	0-65

* Important: Washing procedure indicated on cover of each membrane package is to be strictly followed. Please consult Alfa Laval's cleaning description

Standard sizes

Membrane type	Standard sheets 20 x 20 cm	Alfa Laval Module M10	Alfa Laval Module M20	Alfa Laval Module M39
GR40PP	100348	100364	100365	100895
GR51PP	100318	101102	100339	100859
GR60PP	100464	101103	100458	100898
GR61PP	100470	101104	100454	100899
GR70PP	520065	522377	519364	519401
GR80PP	531995	531997	531998	532000
GR81PP	100474	101105	100461	101217
GR90PP	531996	531992	531999	532001
GR95PP	516811	100368	101204	101216
FS40PP	100486	100327	100447	100896
RC70PP	100320	101101	100319	100894
ETNA01PP	100478	101131	100465	517704
ETNA10PP	100479	101132	100467	100891

For other flat sheet sizes, please contact Alfa Laval.

Application

Typical product applications for UF membranes	GR	FS	RC	ETNA
Fermentation broths: Antibiotics, disrupted cell suspensions, polysaccharides, organic acids, vinegar etc.	•	•	•	•
Preclarified active principles: Antibiotics, amino acids, polysaccharides, enzymes etc.	•			•
Extractions: Heparin, insulin, enzymes etc.	•			•
Fractionation: Dextrin, dextran, protein etc.	•			•
Chemical synthesis: Polymer, surfactant, product recovery etc.	•	•	•	
Food proteins: Soya, egg, blood plasma, gelatine, whey, milk etc.	•			
Food gums: Pectin, agar, carrageenan etc.	•			
Beverages: Juice, wine, beer, coffee, tea etc.	•	•		
Sugars: Beet and cane juice, starch hydrolysate/HFCS, fructose etc.	•	•		
Waste water: Oil emulsions, dye etc.		•	•	•
Water recycling: Effluent control, product recovery etc.	•	•	•	•

Important information

New membranes must be cleaned prior to first use. The cleaning procedure should be in accordance with the instructions of Alfa Laval's cleaning description for the membrane type concerned. The customer is fully responsible for the effects of incompatible chemicals on membranes.

- Keep membranes moist at all times after initial wetting.
- If the operating specifications given in this product description are not strictly followed, the limited warranty will be null and void.
- To prevent biological growth during system shutdowns, Alfa Laval recommends that the membranes should be immersed in a protective solution.
- Avoid permeate back pressure at all times.

Operation guidelines

Avoid any abrupt pressure or cross-flow variations on the membrane modules during start-up, shutdown, cleaning or other sequences to prevent possible membrane damage. A start-up procedure from standstill to operational condition is recommended as follows:

- The non-pressurised plant should be refilled with water.
- Feed pressure should be gradually increased over a 30-60 second time scale.
- Before initiating cross-flow at high permeate flux conditions (e.g. start-up with high temperature), the set feed pressure should be maintained for 5-10 minutes.
- Cross-flow velocity at set operating point should be gradually achieved over 15-20 seconds.
- Temperature variations should be gradually controlled over 3-5 minutes.

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How to contact Alfa Laval
Contact details for all countries
are continually updated on our website.
Please visit www.alfalaval.com to
access the information direct.