

AMS UltraPro™ A–1801

Acid Stable Ultrafiltration Spiral Wound Element

| | | | | | |
|--------------------|--|---|-------------|------------|------------|
| Description | The AMS UltraPro™ membrane is developed for long-term performance with high and stable fluxes in very acidic environment, featuring high pressure and temperature compatibility. AMS UltraPro™ elements are used for either pre-filtration before nanofiltration or as stand-alone membranes in acid purification and metals concentration. Typical solutions include: <ul style="list-style-type: none"> ● 20% H₂SO₄ ● 20% HCl ● 4% HNO₃ ● 30% H₃PO₄ ● 15% CH₃COOH | | | | |
| Performance | Cut-off Rate ⁽¹⁾ : | 10,000 dalton | | | |
| | Permeability ^(2, 3) : | 18 liter/m ² /hour/bar (0.73 gal/ft/day/psi) | | | |
| Limits | Max Pressure: | 10 bar (145 psi) | | | |
| | Max Pressure Drop: | 0.5 bar (7.3 psi) | | | |
| | Max Temperature ⁽⁵⁾ : | Operating: 50 °C (122 °F) Cleaning: 50 °C (122 °F) | | | |
| | pH Range ⁽⁵⁾ : | Operating: 0 – 12 Cleaning: 0 – 13 | | | |
| | Recirculation Flow: | 1.8" element: 4.0 – 8.0 liter/min (1.0 – 2.1 gal/min) 2.5" element: 7.5 – 19 liter/min (2.0 – 5.0 gal/min) 4" element: 22 – 65 liter/min (5.8 – 17 gal/min) 8" element: 90 – 280 liter/min (23 – 74 gal/min) | | | |
| Area | m² (ft²) | 1.8" | 2.5" | 4" | 8" |
| | | (aka 1812) | (aka 2540) | (aka 4040) | (aka 8040) |
| | 31 mil Spacer | 0.32 (3.4) | 1.8 (19) | 6.2 (67) | 30 (320) |
| | 46 mil Spacer | 0.25 (2.7) | 1.6 (17) | 4.9 (53) | 24 (260) |

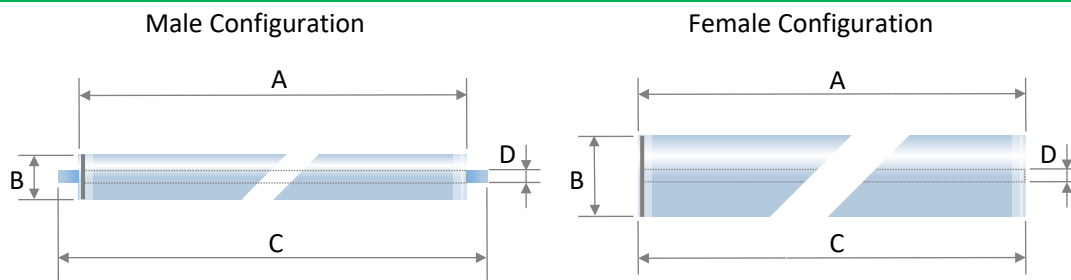
(1) Only for indication;

(2) Test conditions: pressure 2 bar (30 psi), temperature 30 °C (86 °F);

(3) Flux measured with demineralized (RO) water, flux may vary for individual element within ±20% range;

(4) Cut-off rate was determined by suitable markers (please consult UNISOL Membrane Technology);

(5) Consult UNISOL Membrane Technology when intend to operate at elevated pressure, temperature or concentrations.

Dimensions

| | 1.8" | 2.5" | 4" | 8" |
|------------------|------------|-------------|-------------|--------------|
| mm (inch) | 1.8" | 2.5" | 4" | 8" |
| | (aka 1812) | (aka 2540) | (aka 4040) | (aka 8040) |
| Type | Female | Male | Male | Female |
| A | 305 (12) | 965 (38) | 965 (38.0) | 1016 (40.00) |
| B (∅) | 46 (1.8) | 62 (2.4) | 99.4 (3.9) | 200.5 (7.9) |
| C | 305 (12) | 1016 (40.0) | 1016 (40.0) | 1016 (40.00) |
| D (∅) | 16 (0.6) | 19 (0.75) | 19 (0.75) | 28.8 (1.13) |

Handling

Recommended Cleaning Materials. Depending on the nature of the feed material, a choice can be made among the following cleaning agents:

- Sodium hydroxide at pH 10 – 12, temperature $\leq 40\text{ }^{\circ}\text{C}$ (104 °F);
- Hydrochloric acid at pH 1 – 2, temperature $\leq 40\text{ }^{\circ}\text{C}$ (104 °F);
- Nitric acid at pH 1 – 2, temperature $\leq 40\text{ }^{\circ}\text{C}$ (104 °F);
- Na-EDTA of 0.2 – 1.0 % w/w at pH 10.5 – 11, temperature $\leq 35\text{ }^{\circ}\text{C}$ (91 °F);
- Anionic surfactant (e.g. sodium dodecyl sulfate) of 0.5 % at pH 10.5 – 11, temperature $\leq 35\text{ }^{\circ}\text{C}$ (91 °F).

Only demineralized (RO) water must be used for cleaning. Consult UNISOL Membrane Technology regarding the use of other cleaning materials.

Lubricants. During installation, use only water or glycerin to lubricate seals. The use of petroleum or vegetable-based oils or solvents may damage the element and void any warranty.

Preservation and Storage. Plan ahead to use new membranes. The element should not be allowed to dry: store it in a sealed bag, at 4 – 30 °C (39 – 86 °F). Storage solutions should be made with: 1 % w/w sodium metabisulfite. Please refer to “UNISOL Membrane Element Storage and Handling Instructions.”

Chemical Exposure. Do not expose the membrane to chlorine or other oxidants. Sodium metabisulfite (without catalysts such as cobalt) is the preferred chemical to eliminate free chlorine or other oxidizers in the feed.