

# AMS NanoPro™ S-3014

## Solvent-stable Nanofiltration Spiral-wound Element

**Description** The AMS NanoPro™ membrane is developed for long-term performance with high and stable fluxes in presence of solvents, featuring high pressure and temperature compatibility. AMS NanoPro™ elements are used for solvent purification and component concentration. Typical solvents include:

- Methanol, Ethanol, Propanol
- Hexane
- THF
- Acetone, Acetonitrile
- Ethyl acetate
- DMF

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<b>Performance</b>	Cut-off Rate <sup>(1)</sup> :	400 dalton
	Water Flux <sup>(2, 3)</sup> :	95 liter/m <sup>2</sup> /hour (56 gal/ft/day)
	MgSO <sub>4</sub> Rejection <sup>(2, 4)</sup> :	≥ 92 %

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<b>Limits</b>	Max Pressure:	40 bar (580 psi)	
	Max Pressure Drop:	0.5 bar (7.3 psi)	
	Max Temperature <sup>(5)</sup> :	Operating:	50 °C (122 °F)
		Cleaning:	50 °C (122 °F)
	pH Range <sup>(5)</sup> :	Operating:	2 – 12
		Cleaning:	1 – 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)		

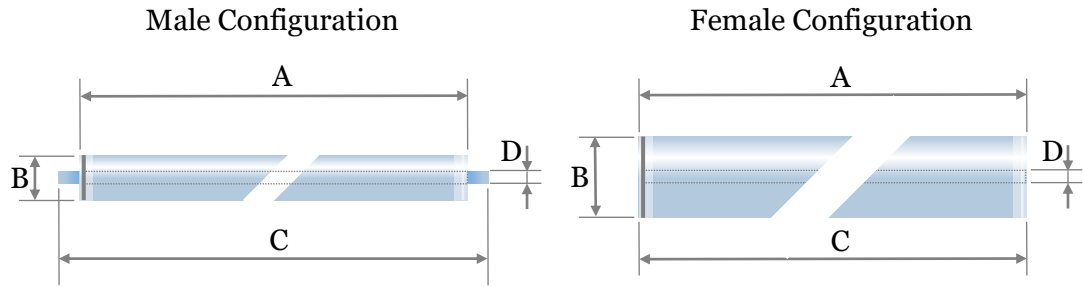
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<b>Area</b>	<b>m<sup>2</sup> (ft<sup>2</sup>)</b>	<b>1.8"</b> (aka 1812)	<b>2.5"</b> (aka 2540)	<b>4"</b> (aka 4040)	<b>8"</b> (aka 8040)
	31 mil Spacer	0.32 (3.4)	1.6 (17)	6.1 (66)	28 (300)
	46 mil Spacer	0.25 (2.7)	1.3 (14)	4.7 (51)	23 (250)

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(1) Only for indication; (2) Test conditions: pressure 40 bar (580 psi), temperature 30 °C (86 °F); (3) Flux measured with demineralized (RO) water, flux may vary for individual element within ±20% range; (4) Feed solution is 0.2% MgSO<sub>4</sub> in demineralized (RO) water; (5) Consult AMS Technologies when intend to operate at elevated pressure, temperature, concentrations.

## Dimensions



mm (inch)	1.8" (aka 1812)	2.5" (aka 2540)	4" (aka 4040)	8" (aka 8040)
Config.	Male	Male	Male	Female
A	256 (10.1)	954 (37.6)	965 (38.0)	1016 (40.00)
∅B	44.5 (1.75)	61 (2.4)	99 (3.9)	200 (7.87)
C	298 (11.7)	1016 (40.0)	1016 (40.0)	1016 (40.00)
∅D	17 (0.67)	19 (0.75)	19 (0.75)	28.5 (1.12)

## 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 ≤ 40 °C (104 °F);
- Hydrochloric acid at pH 1 – 2, temperature ≤ 40 °C (104 °F);
- Nitric acid at pH 1 – 2, temperature ≤ 40 °C (104 °F);
- Na-EDTA of 0.2 – 1.0 % w/w at pH 10.5 – 11, temperature ≤ 35 °C (91 °F);
- Anionic surfactant (e.g. sodium dodecyl sulfate) of 0.5 % at pH 10.5 – 11, temperature ≤ 35 °C (91 °F).

Only demineralized (RO) water must be used for cleaning. Consult AMS Technologies 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 “AMS 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.