

SEPURAN[®] N₂

Membrane technology
for efficient on-site nitrogen
generation

EVONIK IS ONE OF THE
WORLD LEADERS IN SPECIALTY
CHEMICALS.

THE COMPANY GOES FAR
BEYOND CHEMISTRY TO CREATE
INNOVATIVE, PROFITABLE AND
SUSTAINABLE SOLUTIONS FOR
CUSTOMERS.

As global membrane technology
leader for the gas industry,
Evonik enables the transition
to a sustainable gas economy.

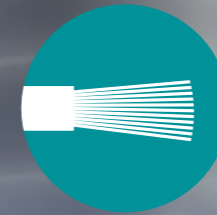
SEPURAN® stands for customized
polyimide hollow fibre membranes
for efficient gas separation.

The SEPURAN® N₂ membrane
has been especially developed for
nitrogen generation combining
low air consumption at all temper-
ature levels with high nitrogen
capacity.



EVONIK
BUSINESS

N₂ Polymer



Membrane



Module/
Cartridge System



EVONIK
TECHNOLOGY
SUPPORT

OEM Partner:
N₂ Package



APPLICATIONS

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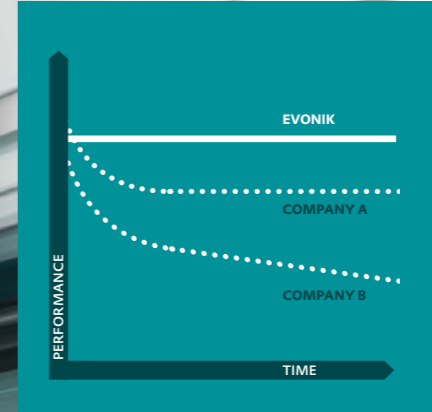
References worldwide 10

WHY ARE WE BEST IN PERFORMANCE?

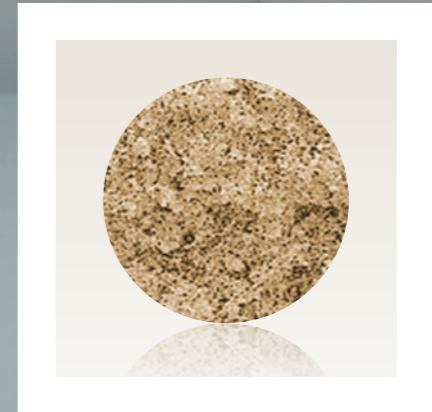
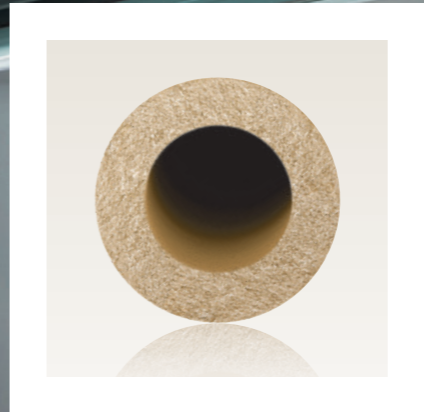
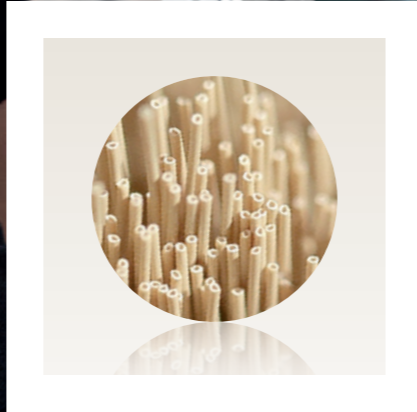
With polymer produced at Evonik, we have given our SEPURAN® N₂ products a high selectivity and permeability. This results in numerous advantages for you and your customer.



A higher pressure rating up to 50%, can minimize your membrane space. The pressure variety of up to 16 barg to 25 barg offers you a larger freedom to choose the parameters to minimize your invest cost.



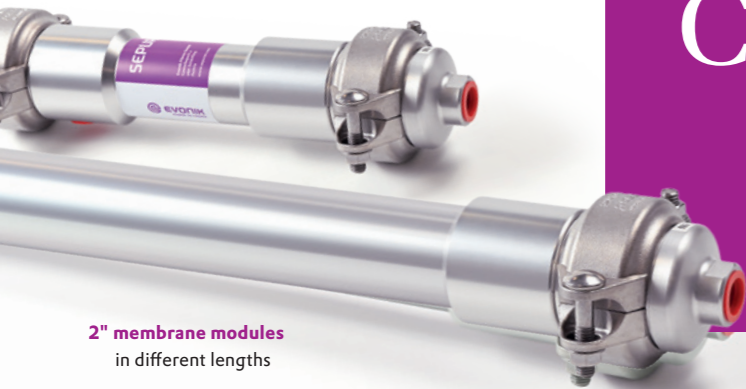
Stable performance
Unlike other gas separation membranes, with typical decreases in performance over time, SEPURAN® N₂ membranes are characterized by an extremely stable performance.



Top technical service
We offer ongoing technical support to you, before and after the project.
Worldwide.

Our products	2"		4"		6"			
	2" SHORT	2" LONG	4" SHORT	4" STANDARD	6" STANDARD	6" SELECTIVE	6" LONG	
Material	PVC	Alu	PVC	Alu	SS304	SS316	SS316	SS316
Temperature rating								
≤ 40 °C	●		●					
≤ 70 °C		●		●	●	●	●	●
Pressure rating								
≤ 10 barg	●		●					
≤ 12 barg		●		●				
≤ 16 barg				●		●		●
≤ 20 barg					●			
≤ 25 barg						●	●	
Performance	[N ₂ 95% @ 7 barg, 25°C]							
Capacity [Nm ³ /h]	0.5	0.5	1.27	1.27	11.3	22.5	50.4	11.7
AF [Air/N ₂ ratio]	2.2	2.2	2.1	2.1	2.1	2.1	2.1	1.9
Ports								
NPT	●	●	●	●	●			
NPT / BSPP						●	●	●

MAKE YOUR CHOICE!



2" membrane modules in different lengths

Take advantage of the diverse SEPURAN® N₂ product range for your individual N₂ project

Are you building nitrogen generators for inerting in the oil & gas industry, for the marine industry or just for fire protection of your customers' storage facilities? Do you construct custom made projects at higher purities or sell defined packages at fixed N₂ purity levels? Do your customers need 300 L/min N₂, purity 99.9% or have projects with 2000 Nm³/h N₂, purity 97%?

Depending on your application and your project size, you can choose among all SEPURAN® N₂ modules and cartridge systems generating nitrogen with a purity range from 95% to 99.9%, with a temperature from 0 to 70 °C. You can either pick the SEPURAN® N₂ Selective product with a very low air factor as well as the fast N₂ products with a very good capacity in different sizes.



The SEPURAN® N₂ 2" membrane modules

The SEPURAN® N₂ 2" product is available in two different lengths, 360 mm and 610 mm and with two different outer materials, PVC and Aluminum. The PVC module can operate up to 10 barg and 40°C; and the Aluminum module up to 12 barg and 70°C.

The compact size of the 2" SEPURAN® N₂ makes it an ideal product to use inside cabinets or wall-mount nitrogen generators; it is useable for all industries, be it food & drink or classic inertization.

6" membrane system cartridge and housing

4" membrane system cartridge and housing

4" membrane cartridge

The SEPURAN® N₂ 4" membrane modules and systems

We offer the SEPURAN® N₂ 4" as a short module version and as a larger version in a system that consist of a 4" cartridge and housing.

This 4" short product, made of stainless steel 304, is ideal for smaller standard N₂ generator packages with a capacity of 11.3 Nm³/h at a purity of 95% (7 barg, 25°C).

For medium flows, you can pick the 4" system, consisting of a cartridge and a housing. The housing is available in SS316, ideal for offshore applications.

Calculate your N₂ product!

Use Evonik's SEPURAN® N₂ calculator to learn how much nitrogen you can make. Estimate the number and type of membranes you need by inputting the nitrogen flow, temperature, nitrogen purity and pressure of your application.

Nitrogen quantity required Nm³/h

Temperature in °C 10 70

Nitrogen purity required in % 95 99.7

Pressure in barg 5.3 25



CALCULATOR

The housings for the 4" or the 6" system are facilitating different industries and business models

The SEPURAN® N₂ 6" system

You may choose the 6" product in a standard version as 6" system (50.4 Nm³/h) or the 6" long system (72.3 Nm³/h) consisting of cartridge and housing, for larger quantities up to several thousand Nm³/h. With the housing in SS316 quality, this product is ideal for the offshore industry.

The SEPURAN® N₂ 6" product works up to 25 barg with a temperature

range between 0 to 70 °C and a purity range from 95% to 99.9%.

The SEPURAN® N₂ Selective System 6" membranes have the highest selectivity and are characterized by an extremely good air factor with excellent capacity, resulting in more nitrogen per compression energy, a smaller compressor, lower operating cost and smaller footprint overall.

You may be choosing a system consisting of a housing and a cartridge, replacement costs are very competitive. All housings are available with G or NPT threads. The 4" housings come with a material certificate facilitating the individual regional pressure regulation of your project being PED. The 6" housings come with a material certificate facilitating the individual regional pressure regulations of your project being ASME, PED, SELO or CRN. Further certifications are available on request.



Detailed information

For detailed information on each SEPURAN® N₂ product, please ask for the individual technical information folder or have a look at our web-page www.membrane-separation.com where you will find the product information as a download.

OUR PRODUCTS



	2"				4"		6"		
	2" SHORT MODULE ALU	2" SHORT MODULE PVC	2" LONG MODULE ALU	2" LONG MODULE PVC	4" SHORT MODULE	4" SYSTEM	6" SYSTEM	6" SLECTIVE SYSTEM	6" LONG SYSTEM
	Cast in place				Cast in place		Cartridge and housing		Cartridge and housing
External material	Aluminium/SS304	PVC/SS304	Aluminium/SS304	PVC/SS304	SS304	SS316	SS316	SS316	SS316
P/T rating									
Pressure	≤ 12 barg / ≤ 174 psig	≤ 10 barg / ≤ 145 psig	≤ 12 barg / ≤ 174 psig	≤ 10 barg / ≤ 145 psig	≤ 16 barg / ≤ 232 psig	≤ 20 barg / ≤ 290 psig	≤ 25 barg / ≤ 363 psig	≤ 25 barg / ≤ 363 psig	≤ 16 barg / ≤ 232 psig
Temperature	1-70 °C / 34 - 158 °F	1-40 °C / 34 - 104 °F	1-70 °C / 34 - 158 °F	1-40 °C / 34 - 104 °F	1-70 °C / 34 - 158 °F	1-70 °C / 34 - 158 °F	1-70 °C / 34 - 158 °F	1-70 °C / 34 - 158 °F	1-70 °C / 34 - 158 °F
Performance									
7 barg / 95% / 25 °C	0.50 Nm ³ /h 18.7 scfh	0.50 Nm ³ /h 18.7 scfh	1.27 Nm ³ /h 47.4 scfh	1.27 Nm ³ /h 47.4 scfh	11.3 Nm ³ /h 7.0 scfm	22.5 Nm ³ /h 14.1 scfm	50.4 Nm ³ /h 31.5 scfm	11.7 Nm ³ /h 7.3 scfm	72.3 Nm ³ /h 45.2 scfm
Air factor	2.2	2.2	2.1	2.1	2.1	2.1	2.1	1.9	2.1
9 barg / 95% / 55 °C	1.1 Nm ³ /h 0.7 scfm	—	2.7 Nm ³ /h 1.7 scfm	—	17.9 Nm ³ /h 11.1 scfm	35.6 Nm ³ /h 22.1 scfm	80.3 Nm ³ /h 50.0 scfm	25.2 Nm ³ /h 15.7 scfm	111.8 Nm ³ /h 69.6 scfm
Air factor	2.4	—	2.4	—	2.4	2.4	2.4	2.0	2.4
Nominal dimensions									
Diameter x length	50 x 360 mm 2.0 x 14.2"	50 x 360 mm 2.0 x 14.2"	50 x 610 mm 2.0 x 24.0"	50 x 610 mm 2.0 x 24.0"	178 x 875 mm 7.0 x 34.5"	178 x 1292 mm 7.0 x 50.9"	184 x 1448 mm 7.2 x 57.0"	184 x 1448 mm 7.2 x 57.0"	184 x 1998 mm 7.2 x 78.7"
Connections									
Type	NPT	NPT	NPT	NPT	NPT	NPT / BSPP	NPT / BSPP	NPT / BSPP	NPT / BSPP
Feed and retentate	0.5"	0.5"	0.5"	0.5"	0.75"	0.75" / 0.75"	1.0" / 1.0"	1.0" / 1.0"	1.5" / 1.0"
Permeate	0.5"	0.5"	0.5"	0.5"	1.5"	1.5" / 1.5"	2.0" / 1.5"	2.0" / 1.5"	2.5" / 2.5"
Weight	2.0 kg / 4.4 lbs	1.6 kg / 3.5 lbs	2.3 kg / 5.1 lbs	1.9 kg / 4.2 lbs	10.4 kg / 22.9 lbs	21.3 kg / 47.0 lbs	39.3 kg / 86.6 lbs	39.3 kg / 86.6 lbs	48.2 kg / 106.3 lbs

REFERENCES WORLDWIDE

Overview of facilities with
SEPURAN® N₂ membrane technology



1200

References
in total



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® = registered trademark

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