



**PRISM[®] membrane separators for
oxygen-enriched air applications**
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Ordering information

Catalog Number	Product Number	Shell Materials	Connection Thread Type	Connection Size	Cap Materials
199935	PA1010-N1-2A-00	High performance ABS	NPT	1/4 inch	6061 Aluminum
199787	PA1010-P3-2A-D0	High performance ABS	NPT	1/4 inch	6061 Aluminum
199933	PA1020-N1-2A-00	High performance ABS	NPT	1/4 inch	6061 Aluminum
199934	PA1020-N1-2B-00	High performance ABS	BSPP	1/4 inch	6061 Aluminum
174325	PA3020-N1-3A-00	High performance ABS	NPT	3/8-inch	6061 Aluminum
175596	PA3020-N1-3B-00	High performance ABS	BSPP	3/8-inch	6061 Aluminum
175594	PA3030-N1-3A-00	High performance ABS	NPT	3/8-inch	6061 Aluminum
175595	PA3030-N1-3B-00	High performance ABS	BSPP	3/8-inch	6061 Aluminum
155778	PA4030-N1-4A-00	High performance ABS	NPT	1/2-inch	6061 Aluminum
161930	PA4030-N1-6B-00	High performance ABS	BSPP	3/4-inch	6061 Aluminum
161931	PA4030-N1-7C-00	High performance ABS	SAE J1926	7/8-inch	6061 Aluminum
107011	PA4030-P3-4A-D0	High performance ABS	NPT	1/2-inch	6061 Aluminum
107012	PA4030-P3-6B-D0	High performance ABS	BSPP	3/4-inch	6061 Aluminum
150555	PA4050-N1-4A-00	High performance ABS	NPT	1/2-inch	6061 Aluminum
161932	PA4050-N1-6B-00	High performance ABS	BSPP	3/4-inch	6061 Aluminum
161933	PA4050-N1-7C-00	High performance ABS	SAE J1926	7/8-inch	6061 Aluminum
107137	PA4050-P3-4A-D0	High performance ABS	NPT	1/2-inch	6061 Aluminum
107016	PA4050-P3-6B-D0	High performance ABS	BSPP	3/4-inch	6061 Aluminum
107017	PA4050-P3-7C-D0	High performance ABS	SAE J1926	7/8-inch	6061 Aluminum
177108	PA6050-N1-8B-G2	6063 Aluminum	BSPP	1-inch	6061 Aluminum
177106	PA6050-N1-8C-G2	6063 Aluminum	SAE J1926	1-inch	6061 Aluminum
177109	PA6050-P3-8B-D2	6063 Aluminum	BSPP	1-inch	6061 Aluminum
177107	PA6050-P3-8C-D2	6063 Aluminum	SAE J1926	1-inch	6061 Aluminum

How membranes work for Oxygen-Enriched Air (OEA)



PRISM membrane separators use asymmetric hollow fiber membrane technology to separate oxygen and nitrogen from compressed air. Atmospheric air contains 78% nitrogen, 21% oxygen, and 1% other gases. Through selective permeation,

the oxygen molecules transport at a faster rate across the membrane than the slower nitrogen molecules. The oxygen-enriched product stream exits the membrane separator at low pressure and is ready to be used in industrial applications.

Common OEA applications include nitrox dive gas, water treatment, enhanced combustion, and oxygen-enriched breathing air at high altitudes.

Performance – quick reference

OEA flow in Nm³/H @ 55°C, 9 barg

Model	25% O ₂ Purity		30% O ₂ Purity		35% O ₂ Purity		40% O ₂ Purity		45% O ₂ Purity		50% O ₂ Purity	
	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet
PA1010 N1	0.32	0.27	0.42	0.28	0.59	0.29	0.97	0.31				
PA1020 N1	1.08	0.90	1.41	0.93	1.97	0.97	3.27	0.99				
PA3020 N1	4.71	3.92	6.17	4.08	8.60	4.23	14.3	4.32				
PA3030 N1	7.97	6.64	10.4	6.92	14.5	7.19	24.1	7.37				
PA4030 N1	14.1	11.8	18.5	12.2	25.8	12.7	42.7	13.0				
PA4050 N1	23.2	19.3	30.4	20.2	42.3	21.1	70.1	21.8				
PA6050 N1	58.4	48.8	76.5	51.0	106.7	53.3	176.7	55.4				
PA1010 P3							0.24	0.10	0.37	0.11	0.77	0.12
PA4030 P3							12.1	5.26	18.5	5.55	40.1	5.70
PA4050 P3							20.0	8.76	30.5	9.28	66.2	9.73
PA6050 P3							44.1	19.4	67.4	20.5	146.4	21.5

OEA flow in Nm³/H @ 55°C, 15 barg

Model	25% O ₂ Purity		30% O ₂ Purity		35% O ₂ Purity		40% O ₂ Purity		45% O ₂ Purity		50% O ₂ Purity	
	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet
PA1010 N1	0.53	0.44	0.69	0.46	0.94	0.49	1.44	0.51				
PA1020 N1	1.80	1.50	2.34	1.57	3.18	1.63	4.87	1.68				
PA3020 N1	7.88	6.56	10.2	6.84	13.9	7.12	21.3	7.35				
PA3030 N1	13.3	11.1	17.3	11.6	23.5	12.1	36.0	12.5				
PA4030 N1	23.6	19.7	30.6	20.5	41.6	21.4	63.7	22.1				
PA4050 N1	38.8	32.4	50.3	33.8	68.4	35.4	104.7	36.9				
PA6050 N1	97.7	81.6	126.9	85.4	172.2	89.5	263.8	93.7				
PA1010 P3							0.38	0.17	0.54	0.19	0.93	0.20
PA4030 P3							19.3	8.83	27.5	9.34	47.6	9.83
PA4050 P3							31.9	14.7	45.5	15.6	78.7	16.6
PA6050 P3							70.4	32.4	100.5	34.5	173.8	36.6

Performance is influenced by feed air pressure and temperature.
 Contact our Technical Service Department at Membrane@airproducts.com
 for specific calculations.

Nm³/H x 37.33 = SCFH

The information contained in this document is believed to be true and accurate at time of publication. Air Products PRISM Membranes reserves the right to change product specifications without notification. Please consult current *Product Design and Reference* manual for detailed information associated with these products.

Air Products PRISM Membranes quality management system is certified to ISO9001 and AS9100C.

PRISM is a registered trademark of Air Products and Chemicals, Inc.

Quality assured

Every membrane separator has to pass our rigorous testing requirements before it will be released into service. Our quality management systems are AS9100C and ISO9001 certified.

Industrial grade

PRISM membrane separators are designed to handle industrial production loads. The solid construction is a perfect match for remote and severe duty installations.

Passive technology

The selective permeation technology uses a passive system with no moving parts. This simple system allows you to engineer more reliable products that can be deployed in a wide range of environments, including mobile systems.

Simple start-up

PRISM membrane separators are easily commissioned. Simply apply clean compressed air, and production begins. No break in period, expensive media, or complex equipment is required to manage and maintain.

Lightweight

PRISM membrane separators are constructed from high-performance ABS or 6061/6063 aluminum, which makes them very lightweight. Separators are easily handled by one person, making installation and field service simple.

Air Products supplies separators to OEM Partners who are specialized and experienced membrane system builders. If your company is interested in incorporating our membrane separators into your engineered systems, please contact our Business Development specialists at Membrane@airproducts.com.

Air Products offers OEM Partners

- Preferred membrane pricing
- Technical support
- Priority lead times
- End user inquiries for system quotes

The OEM Partner's Responsibility

- Build innovative gas generating or gas purifying systems using PRISM Membrane separators
- Sell or rent completed systems to end users or distributors



A typical membrane separator contains thousands of fibers that are bundled and encased at both ends in epoxy resin. The ends of the bundle are cut, which leaves the fiber bores open on both ends, allowing the gas to travel from one end to the other. The fiber bundle is enclosed in a suitable casing which protects the fibers and routes the gas properly.

Air Products' PRISM membranes: experience, performance, and value.

