



**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.

For more information regarding Air Products PRISM membrane products, please contact our Customer Service department.

Air Products PRISM Membranes

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