

Versapor® TR Membrane

Description

The Versapor TR membrane is a modified acrylic copolymer membrane cast on a thin, nonwoven polyester support. It is Repel™ treated for superior oleophobicity and hydrophobicity.

- Oleophobic/hydrophobic
- Excellent air permeability
- Broad chemical compatibility
- Compatible with a variety of sealing methods
- Excellent handling properties
- Manufacture is carried out according to procedures within a quality management system certified to ISO9001

The Versapor TR membrane is repellent to a variety of fluids including, but not limited to, the following.

- Body fluids
- Lipid solutions
- Water
- Oils
- Organic solvents
- Gasoline
- Starter fluid
- Brake fluid
- Transmission fluid
- Steering fluid
- Wiper fluid

Specifications

Dimensions

Custom roll, sheet, and disc sizes available

Please contact your local Pall representative for more information.

Packaging

Core: 7.6 cm (3.0 in) ID, PVC

Packaging: For widths up to 22.86 cm (9.0 in), shrink-wrap around each roll; for widths 22.86 cm (9.0 in) and larger, bag around each roll



Versapor® TR membrane

Qualification Services

Pall Corporation offers qualification services to support regulatory compliance.

Benefits of Venting

- Contamination control
- Controlled air/gas exchange rates
- Cost savings
- Design flexibility
- High permeability rates
- Higher throughput; increased fill rates
- Increased system reliability
- Parts remain free of corrosion
- Pressure equalization
- Reactive surfaces are not poisoned
- Sensing surfaces protection
- Short circuits are prevented
- Temperature stabilization

Applications and Media Requirements by Industry¹

Automotive

Application

- ABS brake systems
- Air conditioning pressure sensors
- Electric motors: windows, windshield wipers
- Electronic control units
- Fuel tanks: pressure sensors, gas caps, roll-over valve protection
- Lighting assemblies: headlight, taillight
- Powertrain control units

Media Requirements

- Easily die cut and sealed
 - Good chemical resistance
 - High mechanical strength
 - High permeability
 - High repellency to gasoline and other automotive fluids
 - High vapor transport rate
 - Low back pressure
-

Electronics

Application

- Acoustically transparent microphone protection
- Enclosure vents
- Micro-Electro-Mechanical Systems (MEMS) protection
- Portable electronic devices
- Transducer protectors
- Vented packaging

Media Requirements

- Easily die cut and sealed
 - Good chemical resistance
 - High acoustic transparency
 - High water intrusion pressure
 - Low back pressure
 - Resistant to salt water
 - Resistant to UV
 - Thin or low profile
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Food and Beverage

Application

- Food packaging: processing, moisture protection, shipping
- Liquid bottling: filling, packaging, shipping
- Thermal vents
- Vented cap and lid liners

Media Requirements

- Easily customized for unusual shapes
 - Easily die cut and sealed
 - Good chemical resistance
 - Good mechanical strength
 - Good repellency
 - High permeability
 - High temperature resistance
-

Other Industrial Applications²

- Cap and lid vents
- Moisture barriers
- Packaging vents
- Reactive product packaging
- Sensor protection

¹ This table is intended to serve as a guide only. Since applicable regulations and requirements may differ from country-to-country, please contact your local Pall representative for specific information.

² The Versapor TR membrane is used in a variety of Industrial markets and applications. For information about those not listed above, please contact your local Pall representative.

Chemical Resistance^{3,4}

Acids

- Acetic acid - 10%
- Acetic acid - 30%
- Acetic acid - 90%
- Hydrochloric acid - 1N (3.3%)

Alcohols

- Amyl alcohol
- Benzyl alcohol
- Butanol
- Ethanol
- Isopropanol
- Methanol
- n-Propanol

Aromatic Hydrocarbons

- Benzene
- Toluene
- Xylene

Bases

- Ammonium hydroxide - 3N (5.7%)
- Ammonium hydroxide - 6N (11.4%)
- Potassium hydroxide - 3N (15%)
- Sodium hydroxide - 3N (11%)
- Sodium hydroxide - 6N (22%)

Esters

- Amyl acetate
- Butyl acetate
- Cellosolve acetate
- Ethyl acetate: limited resistance
- Isopropyl acetate: limited resistance
- Methyl acetate: limited resistance

Ethers

- Ethyl ether
- Isopropyl ether
- Tetrahydrofuran/water (50/50 v/v): limited resistance

Glycols

- Ethylene glycol
- Glycerol
- Propylene glycol

Halogenated Hydrocarbons

- Carbon tetrachloride
- Ethylene dichloride: limited resistance
- Freon TF: limited resistance
- Genesolv D
- Perchloroethylene
- Tetrachloroethylene
- Trichloroethylene

Ketones

- Methyl isobutyl ketone

Miscellaneous

- 18 MOhm water
- Acetonitrile
- Formaldehyde - 37%
- Formaldehyde - 4%
- Gasoline
- Hexane - dry
- JP-4
- Kerosene
- Skydrol 500
- Water

Oils

- Cottonseed
- Lubrication
- MIL-L-7808
- Peanut
- Sesame

³ The Versapor TR membrane has demonstrated resistance to the chemicals on this list.

⁴ This table is intended to serve as a guide only. Accuracy cannot be guaranteed. Users are responsible for verifying chemical compatibility under their own conditions of use. Chemical compatibility is affected by many variables including temperature, pressure, concentration, and chemical purity.

Sealing Method Compatibility⁵

(• Compatible)

Material	Method					
	Adhesive Sealing	Heated Dies	Insert Molding	Mechanical Seal	Radio Frequency	Ultrasonic
ABS	•	•	•	•	•	•
Acrylic	•	•		•	•	
EVA		•	•	•	•	•
Latex	•			•		
Natural rubber	•			•		
Polycarbonate	•	•		•	•	•
Polyester (PBT)	•	•		•		•
Polyethylene		•	•	•		
Polypropylene		•	•	•		•
PVC		•	•	•	•	
Silicone	•					
Styrene		•	•	•		•
Synthetic rubber	•			•		
Urethane (thermoplastic)	•	•	•	•		•

⁵ This table is intended to serve as a guide only. Accuracy cannot be guaranteed. Users should verify chemical compatibility with their specific membrane under actual conditions. Additional information about Pall materials is available online at www.pall.com/industrialmaterials.

Performance⁶

Part Number	Description	Rating (um)	Support Type	Suggested Maximum Operating Temp. C° (F°)	Oil Rating (1-8) ⁷	Minimum Thickness (mils)	Maximum Thickness (mils)	Water Intrusion psi (bar)	Air Flow Rate
80417	Versapor 200 TR	0.2	Nonwoven polyester	240 (464)	8	2.2	5.5	≥ 26.0 (1.79)	≥ 4.7 ⁸
80421	Versapor 450 TR	0.45	Nonwoven polyester	240 (464)	8	2.2	5.5	≥ 16.0 (1.10)	≥ 16.6 ⁸
80425	Versapor 800 TR	0.8	Nonwoven polyester	240 (464)	8	2.2	5.5	≥ 8.0 (0.55)	≥ 43.5 ⁸
80429	Versapor 1200 TR	1.2	Nonwoven polyester	240 (464)	8	2.2	5.5	≥ 6.0 (0.41)	≥ 28.7 ⁹
80433	Versapor 3000 TR	3.0	Nonwoven polyester	240 (464)	8	2.2	5.5	≥ 3.0 (0.21)	≥ 60.3 ⁹
80437	Versapor 5000 TR	5.0	Nonwoven polyester	240 (464)	8	2.2	5.5	≥ 2.0 (0.14)	≥ 88.0 ⁹

⁶ The maximum operating temperatures listed are guidelines only. Accuracy cannot be guaranteed. Users should verify maximum temperature during continuous operation under actual conditions.

⁷ Hydrocarbon resistance test was performed according to AATCC Test Method 118-1989.

⁸ Air flow rate units: Lpm / 3.7 cm² @ 13.5 psi (0.9 bar)

⁹ Air flow rate units: Lpm / 3.7 cm² @ 5.0 psi (0.34 bar)

Ordering Information

For ordering information, or to place an order, please contact your local Pall representative.



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