

Versapor® RC
Membranes
Validation Guide

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Introduction

The Versapor RC range of hydrophobic and oleophobic membranes are used where particle, bacterial and viral retention removal may be required in medical venting applications. Versapor RC membranes represent the next generation of venting materials, having been designed to specifically address changing market requirements driven by environmental legislation and regulations.

Versapor RC membranes are composed of the same base membrane grades as the first generation Versapor R range, but employ a modified hydrophobic surface treatment. These new grades continue to offer the physical integrity and ability to reduce the risk of aerosol particulate contamination, while demonstrating consistent performance over a broad range of operating conditions and sterilization methods, as well as meeting or exceeding typical industry requirements.

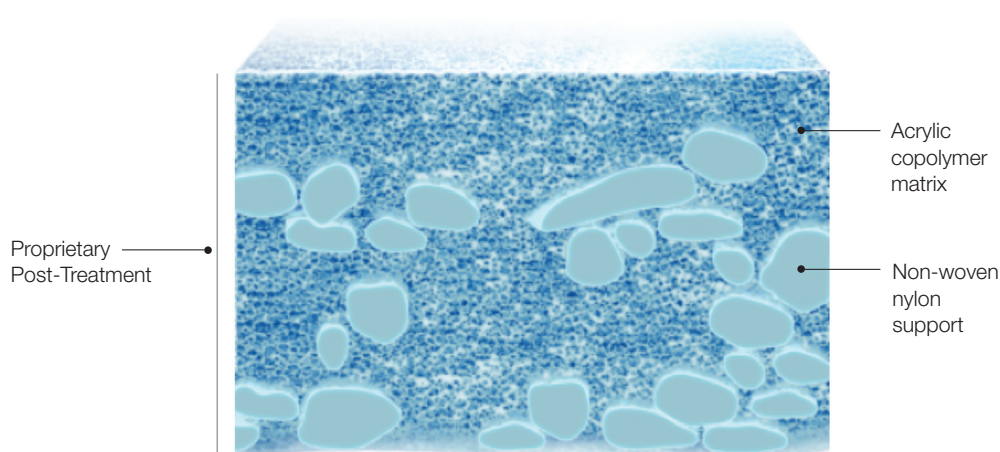
Versapor RC membranes are manufactured in accordance with current Good Manufacturing Practices (cGMP). The Pall facility where these membranes are manufactured operates and is certified to the Quality and Environmental Management Systems current revisions of ISO-9001 and ISO-14001.

Pall Corporation is committed to providing a complete line of quality products and services for filtration applications. The contents of this Validation Guide have been prepared to facilitate your product qualification process. Should you have any questions related to the information included in this document, or require further assistance, please contact your Pall representative or write to us at MedOEMcustomersupport@pall.com.

Product Overview

Materials of Construction

Filter media: Acrylic Copolymer membrane on a non-woven nylon support.



The Versapor RC membrane portfolio utilizes three materials of construction:

- **Acrylic Copolymer Matrix:** Available in multiple pore sizes, its microporous structure is designed to ensure particulate retention, while maintaining high flow rates. It also offers dimensional strength, and broad chemical compatibility.
- **Non-woven nylon support:** The support fabric is manufactured using continuous nylon fibers randomly arranged, which enhance the physical properties of the membrane by conferring high tensile strength and dimensional stability.
- **Proprietary Post-Treatment:** This environmentally friendly process involves the application of a fluoropolymer surface modification to the membrane matrix, which imparts wetting resistance against low surface tension fluids.

Product Specifications

Versapor RC				
Acrylic Copolymer membrane on non-woven nylon support				
Membrane Grade	Nominal Pore Size (μm)	Water Breakthrough (psi)	Air Flow (SLPM)	Thickness (mils)
Versapor 200RC	0.2	≥ 26.0	≥ 4.2*	6.0 - 12.0
Versapor 450RC	0.45	≥ 16.0	≥ 15.0*	
Versapor 800RC	0.8	≥ 8.0	≥ 39.0*	
Versapor 1200RC	1.2	≥ 6.0	≥ 34.0**	
Versapor 3000RC	3.0	≥ 3.0	≥ 60.0**	
Versapor 5000RC	5.0	≥ 2.0	≥ 88.0**	

* 3.7 sq.cm area @ 13.5 psi

** 3.7 sq.cm area @ 5.0 psi

Product Design

Thickness Test

Membrane thickness variation is a critical property which must be considered during device design to ensure adequate processing conditions are established resulting in a robust finished device. The Versapor RC grades are validated to meet the thickness specification as indicated below:

Membrane Grade	Thickness Minimum (mils)	Thickness Maximum (mils)	Thickness Minimum (μm)	Thickness Maximum (μm)
Versapor 200RC	6.0	12.0	152.4	304.8
Versapor 450RC				
Versapor 800RC				
Versapor 1200RC				
Versapor 3000RC				
Versapor 5000RC				

Test Method:

Equipment

Federal Thickness Gauge

Materials

Membrane test samples

Procedure:

1. Push the '**zero control button**' of the thickness gauge until readout displays '**0.000**'.
2. Manually raise the plunger.
3. Insert the membrane sample.
4. Manually lower the plunger.
5. Read the value from the analog display or digital readout.
6. Record each membrane thickness reading on the data form.

Testing Results

Membrane Grade	Sample ID	Thickness Data (mils)		Samples Tested	Samples Passed
		Min	Max		
Versapor 200RC	987382	6.7	8.9	18	18
Versapor 450RC	987353	6.4	8.8	18	18
Versapor 1200RC	987355	6.2	9.5	18	18
Versapor 3000RC	987375	6.7	9.1	18	18

Handling & Sealing

General Guidelines

When handling membranes, individuals should wear gloves. Skin oils on the hands can impact membrane performance. Static eliminators are helpful for the handling and placement of die cut membranes and processing of membrane ribbons, especially in automated operations.

The relative humidity in the membrane processing area should also be considered as a process variable. We recommend processing the membrane in a climate controlled environment.

Tension control is important to ensure proper tracking of roll stock membrane and membrane ribbons. Care must be taken not to apply excessive tension or stress to the membrane, which can result in membrane breakage or altered membrane performance. Parts and work surfaces must be clean and free of particulates. Molded parts must be free of silicone-based, mold-release agents.

Membrane Conversion

Membrane rolls can be further processed and converted into more usable formats for device assembly. Care must be taken when handling microporous membranes to prevent damage during the converting stage. Pall Corporation offers a variety of filter cutting options for membrane conversion prior to assembly into your device.

Pall representatives can provide details on slitting, die cutting, and other conversion options.

A decorative circular mosaic pattern in the bottom left corner, composed of many small, multi-colored squares (blue, yellow, orange, grey) arranged in concentric rings.

Die Cutting

Conventional steel rule, rotary, impact, or male/female dies work well with these products. To avoid thread pulls and resulting membrane failures when cutting these supported membranes, dies must be kept sharp and strike through the membrane to a hard surface.

The use of interleaving layers may be necessary. Male/female die sets must fit tightly; ideally the gap should be no more than half the membrane thickness. Static eliminators are helpful when cutting membrane ribbons in high-speed operations.

Slitting

Most commercial slitting equipment is suitable for cutting these microporous membranes into desired widths.

Static eliminators are useful for preventing static build-up on the membrane.

Sealing Compatibility

Versapor RC membranes are compatible with the following methods of sealing:

- [Adhesive](#)
- [Mechanical](#)
- [Ultrasonics](#)
- [Heat](#)
- [Radio Frequency \(RF\) welding](#)

Chemical Compatibility

The following data was compiled by Pall Corporation, and provides data based on exposure of membrane materials to specified chemicals under static conditions for 48 hours at 25 °C (77 °F). Representative samples taken from nominal lots of Versapor 200RC membrane were selected for the study to represent the product family. Following chemical exposure at the prescribed conditions, the samples were evaluated to confirm they met the functional specifications as listed below.

Membrane Grade	Nominal Pore Size (µm)	Water Breakthrough (psi)	Air Flow (L/min/3.7 cm² @ 13.5 psi)	Thickness (mils)	n-Nonane Resistance (30 seconds)
Versapor 200RC	0.2	≥ 26.0	≥ 4.2	6.0 - 12.0	Pass

If test results from a membrane property after exposure were outside of the product specification, the membrane was considered not resistant (non-compatible) with the specific chemical. The following table lists the chemicals and concentrations used for the study and the test results.

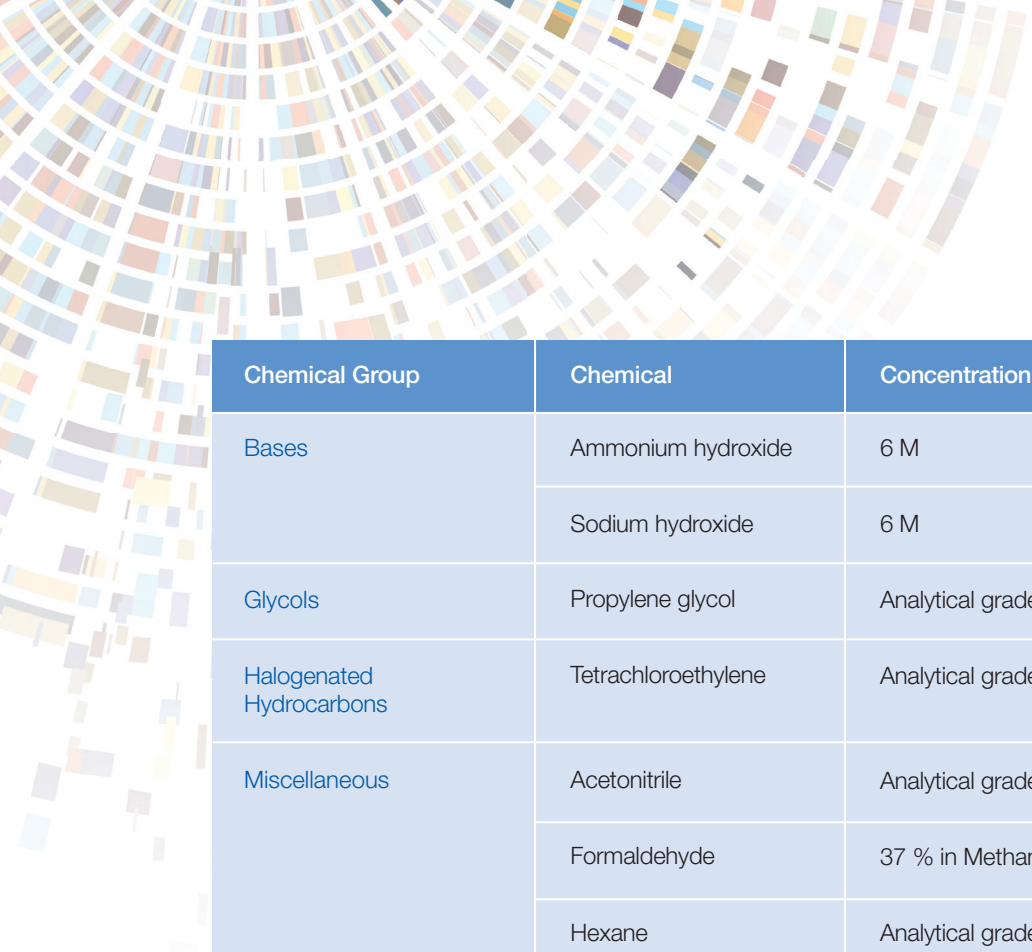
Outcome of compatibility studies for Versapor-200RC

Chemical Group	Chemical	Concentration or Purity	Results
Acids	Acetic acid	Glacial	R
	Acetic acid	30 %	R
	Hydrochloric Acid	1 M	R
	Nitric Acid	6 M	N
Alcohols	Benzyl Alcohol	Analytical grade	N
	Ethanol	200 proof SDA	R
	Isopropyl alcohol	Analytical grade	R
Aromatic Hydrocarbons	Toluene	Analytical grade	R

R = Resistant No significant change observed in the membrane properties tested, nor visible indication of chemical attack.

N = Not Resistant The membrane is unstable and is not recommended for use in these conditions

Table continued on next page.



Chemical Group	Chemical	Concentration or Purity	Results
Bases	Ammonium hydroxide	6 M	R
	Sodium hydroxide	6 M	N
Glycols	Propylene glycol	Analytical grade	R
Halogenated Hydrocarbons	Tetrachloroethylene	Analytical grade	N
Miscellaneous	Acetonitrile	Analytical grade	N
	Formaldehyde	37 % in Methanol	R
	Hexane	Analytical grade	R
	Kerosene	CAS# 64742-17-9	R
	Cyclohexanone	Analytical grade	N
Oils	Castor	Analytical grade, CAS# 8001-79-4	R
	Cottonseed	Analytical grade, CAS# 8001-29-4	R
	Fish	Laboratory grade, CAS# 8002-50-4	R
	Olive	Laboratory grade, CAS# 8001-25-0	R
	Safflower	Analytical grade, CAS# 8001-23-8	R
	Sesame	Laboratory grade, CAS# 8008-74-0	R
	Soybean	Analytical grade, CAS# 8001-22-7	R

R = Resistant No significant change observed in the membrane properties tested, nor visible indication of chemical attack.

N = Not Resistant The membrane is unstable and is not recommended for use in these conditions

Users should verify chemical compatibility with a specific membrane under actual use conditions because chemical compatibility is affected by multiple variables including temperature, pressure, concentration, and purity. The possibility of various chemical combinations and conditions of use available prevent complete accuracy.

Sterilization Compatibility

Versapor RC membranes were developed to withstand a variety of sterilization methods, ensuring compatibility with most sterilization requirements applied for medical applications.

Representative samples taken from nominal lots of Versapor 200RC membrane were selected for the study to represent the product family. Sterilization conditions are listed opposite.

Sterilization Method	Tested Processing Conditions
Gamma	40 – 50 kGy
Ethylene Oxide (EtO) – 100 %	3 cycles at typical exposure time
Autoclave	2 cycles at 121 °C, 1 hour

Following sterilization conditions, the samples were evaluated to confirm they met the functional specifications as listed below. If test results from one of the membrane properties was not comparable to test results from control samples, the membrane was considered not compatible with the specific method. The physical properties evaluated were air flow rate, water breakthrough, and wetting resistance to n-Nonane.

Functional Specifications for Versapor-200RC

Membrane Grade	Nominal Pore Size (µm)	Water Breakthrough (psi)	Air Flow (L/min/3.7 cm² @ 13.5 psi)	n-Nonane Resistance (30 seconds)
Versapor 200RC	0.2	≥ 26.0	≥ 4.2	Pass

Using one-way analysis of variance (ANOVA), no significant differences in any of the membrane properties were detected between controls (unsterilized) and sterilized samples. All samples tested passed test criteria and were determined to be stable to the sterilization conditions.

Testing Results

Specification	Units	Test Acceptance Criteria	Sterilization Method	Samples Tested	Samples Passed
Air Flow	Liters/minute/ 3.7 cm ² @ 13.5 psi	≥ 4.2	N/A (Control)	5	5
			Gamma	5	5
			EtO	5	5
			Autoclave	5	5
Water Breakthrough	psi bar	≥ 26.0 ≥ 1.79	N/A (Control)	5	5
			Gamma	5	5
			EtO	5	5
			Autoclave	5	5
n-Nonane Wetting Resistance	-	Pass @ 60 seconds exposure	N/A (Control)	6	6
			Gamma	6	6
			EtO	6	6
			Autoclave	6	6

Shelf Life and Recommended Storage Conditions

Versapor RC membrane grades are manufactured from stable materials that do not degrade during reasonable periods of storage under ambient conditions.

Engineering studies under accelerated aging conditions at 80 °C were conducted to evaluate limited membrane shelf life to an equivalent of 1, 2, 3, 4, and 6 years natural aging. Membrane properties evaluated include thickness, water breakthrough, air flow rate, and wetting resistance to n-Nonane. All test results were within the established product specifications.

Using one-way analysis of variance (ANOVA), no significant differences in the membrane properties were detected between controls and accelerated aging samples. Data indicates that this membrane is stable. Pall recommends a shelf life of 6 years, from the date of manufacture, provided the product has been stored in accordance with the conditions indicated in this section.

Testing Results

Specification	Units	Test Acceptance Criteria	Samples Tested	Samples Passed
Thickness	mils	6.0 - 12.0	5	5
Water Breakthrough	psi	≥ 26.0	5	5
	bar	≥ 1.79		
Air Flow	Liters/minute/ 3.7 cm ² @ 13.5 psi	≥ 4.2	5	5
n-Nonane Wetting Resistance	Pass @ 60 seconds exposure	Pass	6	6

Nonetheless, since storage and handling conditions may vary, OEM customers are encouraged to evaluate and determine the shelf life of the finished devices produced with our microfiltration materials. This will ensure compliance of their products with the appropriate regulatory guidelines.

The article is supplied dry, without the presence of any preserving fluid. Pall recommend the following conditions to achieve satisfactory performance:

- Store in a cool, clean environment with temperatures in the range of 15 - 30 °C (59 - 86 °F), in dry conditions.
- Do not expose to direct sunlight or other radiation or direct weather conditions.
- Storage of the product in its original packaging.
- Ensure careful handling to avoid physical damage. Ensure shipping bag and seals are intact prior to use.
- Plastics can be damaged if roughly handled – particularly at sub-zero temperatures. Thermal shock by quickly raising the temperatures from sub-zero should be avoided.
- Pall recommends a visual inspection prior to use. Do not use if the product or packaging is damaged.

Please be aware that Pall Corporation maintains product lot number history records for 10 years from the manufacturing date.



Product Performance

Air Flow Test

Flow rate data serves as an indirect measurement of pore size and frequency of pores (or ‘porosity’) in a specified area of a dry microporous material at a constant applied pressure. It is commonly expressed in units such as standard liters per minute (SLPM). Test values can be influenced by different variables such as differential pressure, number of pores, and effective filter area.

The established air flow rate specifications for Versapor RC grades are listed below:

Membrane Grade	Air Flow (Liters/minute/ 3.7 cm ²)
Versapor 200RC	≥ 4.2@ 13.5 psi
Versapor 450RC	≥ 15.0 @ 13.5 psi
Versapor 800RC	≥ 39.0 @ 13.5 psi
Versapor 1200RC	≥ 34.0 @ 5.0 psi
Versapor 3000RC	≥ 60.0 @ 5.0 psi
Versapor 5000RC	≥ 88.0 @ 5.0 psi

Test Method:

Equipment

Calibrated pressure measuring device

Calibrated Airflow Meter

Materials

Membrane samples

Procedure:

1. Verify calibration of the air permeability tester as directed in the manufacturer's instructions.
2. Test the samples in the standard atmosphere for testing textiles, which is 21 ± 1 °C (70 ± 2 °F) and 65 ± 2 % relative humidity.
3. Handle the test specimens carefully to avoid altering the natural state of the material.
4. Place each test sample onto the test head of the tester, face down and free from tension.
5. Perform the test as specified in the manufacturer's operating instructions.
6. Make tests at the pressure differential specified in material specification (13.5 psi or 5 psi).
7. Read and record the test results.
8. Move test membrane to the next location and repeat steps for rest of the samples.

Testing Results

Membrane Grade	Sample ID	Air Flow Data (L/min/3.7 cm ²)	Samples Tested	Samples Passed
Versapor 200RC	987382	≥ 6.0 @ 13.5 psi	12	12
Versapor 450RC	987353	≥ 15.0 @ 13.5 psi	12	12
Versapor 1200RC	987355	≥ 35.5 @ 5.0 psi	12	12
Versapor 3000RC	987375	≥ 76.0 @ 5.0 psi	12	12

Water Breakthrough Test

Measurement of water breakthrough pressure determines the overall integrity of a filter's property as a hydrophobic barrier. The measurement, expressed in units of pressure (i.e., psi, bar), indicates the specific pressure at which the resistance to water flow through a hydrophobic material is overcome, such that water will flow through the filter.

The established minimum water intrusion pressure for Versapor RC grades are listed below:

Membrane Grade	Water Breakthrough (psi)	Water Breakthrough (bar)
Versapor 200RC	≥ 26.0	≥ 1.79
Versapor 450RC	≥ 16.0	≥ 1.10
Versapor 800RC	≥ 8.0	≥ 0.55
Versapor 1200RC	≥ 6.0	≥ 0.41
Versapor 3000RC	≥ 3.0	≥ 0.21
Versapor 5000RC	≥ 2.0	≥ 0.14

Test Method:

Equipment

Test Stand

Pressurized fluid container with pressure gauge

Materials

Membrane test samples

RO/DI Water

Procedure:

1. Inspect the filter sample before beginning water breakthrough test.
2. Check the level of the test fluid in the fluid container before pressurizing.
3. Ensure fluid level is approximately the same height as the test stand.
4. Place the membrane sample in the test stand and connect test stand to pressurized fluid container.
5. Initiate the test and observe filter test sample.
6. At the first sign of fluid on the top of the filter sample, stop the test and note the pressure indicated on the pressure gauge.
7. Remove the sample and discard it.
8. Clean test holder in-between each test.

Testing Results

Membrane Grade	Sample ID	Water Breakthrough Data (psi)	Water Breakthrough Data (bar)	Samples Tested	Samples Passed
Versapor 200RC	987382	> 32.7	> 2.25	12	12
Versapor 450RC	987353	> 20.9	> 1.44	12	12
Versapor 1200RC	987355	> 6.3	> 0.43	12	12
Versapor 3000RC	987375	> 5.2	> 0.36	12	12

Particulate and Bacterial Removal

Bacterial Filtration Efficiency for Versapor RC Grades

Bacterial Filtration Efficiency (BFE) testing results for Pall Corporation's Hydrophobic/Oleophobic Versapor RC membrane grades indicate that these can serve as effective barriers in reducing the risk of airborne contamination in venting applications under the applied test conditions.

Representative samples taken from nominal lots of the different membrane grades were evaluated to determine their bacterial filtration efficiency using aerosolized *Staphylococcus aureus* (ATCC #6538) at a challenge level of greater than 10^6 colony forming units per ~ 40 cm². The mean particle size of the challenge aerosol was maintained at ~ 3.1 μ m and the percent bacterial filtration efficiency (% BFE) calculated based on the ratio between the bacterial counts obtained from samples taken upstream and downstream of the test filter.

Testing outcomes indicated below

Membrane Grade	Test results
Versapor 200RC	> 99.999 %
Versapor 450RC	> 99.999 %
Versapor 800RC	> 99.999 %
Versapor 1200RC	> 99.99 %
Versapor 3000RC	> 99.9 %
Versapor 5000RC	> 98.0 %

This testing was performed in compliance with US FDA Good Manufacturing Practices (GMP) regulations 21 CFR Parts 210, 211, and 820. The test method was adapted from ASTM F2101.

Viral Filtration Efficiency for Versapor RC Grades

Viral Filtration Efficiency (VFE) testing results for Pall Corporation's Hydrophobic/Oleophobic Versapor RC membrane grades indicate that these may serve as effective barriers in reducing the risk of airborne contamination in venting applications.

Representative samples taken from nominal lots of membrane were evaluated to determine their viral filtration efficiency using aerosolized Bacteriophage Φ X174 (single-stranded DNA virus) at a challenge level of greater than 10^6 plaque-forming units (PFU) per ~ 40 cm². The mean particle size of the challenge aerosol was maintained at ~ 3.1 μ m. The VFE was calculated based on the ratio between the plate counts obtained from control samples and downstream of the test filter.

Testing outcomes indicated below

Membrane Grade	Test results
Versapor 200RC	> 99.999 %
Versapor 450RC	> 99.999 %
Versapor 800RC	> 99.999 %
Versapor 1200RC	> 99.99 %
Versapor 3000RC	> 99.5 %
Versapor 5000RC	> 90.0 %

This testing was performed in compliance with US FDA Good Manufacturing Practices (GMP) regulations 21 CFR Parts 210, 211, and 820. The test method was adapted from ASTM F2101.

Wetting Resistance

An engineering study was conducted to evaluate oil repellency of the Versapor RC membrane grades. Following the methodology of the American Association of Textile Chemists and Colorists' (AATCC) Test Method 118-1997, the product's resistance to wetting was tested with a series of liquid hydrocarbons of varying surface tensions. The test results serve to corroborate the ability of these materials to serve as hydrophobic barriers in venting applications where low surface tension fluids may contact the filter membrane.

Drops of the standard test liquids listed below were placed on the membrane surface of two representative grades at 25 °C (77 °F) and observed for wetting, wicking, and contact angle for a specified period. The oil repellency grade is the highest numbered test liquid which does not wet the fabric surface.

Standard Test Liquids – analytical grade

AATCC Oil Repellency Number	Composition
6	n-Decane
*	n-Nonane
7	n-Octane
8	n-Heptane

*n-Nonane is not listed in the AATCC Test Method 118-1997.

Membrane Repellency

Membrane Grade	Isopropanol	n-Heptane	n-Octane	n-Nonane
Versapor 200RC	N	N	N	R
Versapor 450RC	N	N	N	R
Versapor 800RC	N	N	N	R
Versapor 1200RC	N	N	N	R
Versapor 3000RC	N	N	N	R
Versapor 5000RC	N	N	N	R

R = Repels fluid **N** = Wets with fluid

Users should verify wetting resistance with a specific membrane under actual use conditions as resistance is affected by multiple variables including time, temperature, pressure, concentration, and purity. Various chemical combinations prevent complete accuracy.

Compliance

Biological Safety Data

Biocompatibility testing results for Pall's Versapor RC membrane demonstrate that this material meets the requirements of the USP Biological Reactivity Testing <88> (USP Class VI Plastics Tests). The testing was conducted on gamma irradiated samples of the 0.2 µm grade as the representative for all grades within this family of microporous membranes.

Test Description	External Lab Test Report No.	Biological effect	Reference Standard	Result
L929 MEM Elution Cytotoxicity Test - ISO	19-02421-G2	Cytotoxicity	ISO 10993-5: 2009 ISO 10993-12, 2012 ISO/IEC 17025, 2017	Pass
Rabbit Hemolysis Test (Complete) – Saline Extract Method	19-02421-G3	Hemocompatibility	ASTM F756-17 ASTM F619-14 ISO 10993-4, 2017 ISO 10993-12, 2012 ISO/IEC 17025, 2017	Pass
Kligman Maximization Test – ISO	19-02421-G4	Skin sensitization	ISO 10993-10: 2010 United States Pharmacopeia 42, National Formulary 37, 2019. <1184> Sensitization Testing ISO 10993-12, 2012 ISO/IEC 17025, 2017	Pass
Reverse Mutation Assay – with Confirmation – ISO	19-02421-G1	Mutagenicity	ISO 10993-3, 2014 ISO/TR 10993-33, 2015 OECD 471 ISO 10993-12, 2012 ISO/IEC 17025, 2017	Pass

Table continued on next page.



Test Description	External Lab Test Report No.	Biological effect	Reference Standard	Result
Systemic Injection Test – ISO	19-02421-G5	Toxicity after systemic injection	United States Pharmacopeia 42, National Formulary 37, 2019 <88> Biological Reactivity Tests, <i>In Vivo</i>	Pass
Intracutaneous Injection Test – ISO	19-02421-G5	Irritation after intracutaneous injection	United States Pharmacopeia 42, National Formulary 37, 2019 <88> Biological Reactivity Tests, <i>In Vivo</i>	Pass
7 Day Muscle Implantation with Histopathology Evaluation – USP Method	19-02421-G5	Pathology after implantation	United States Pharmacopeia 42, National Formulary 37, 2019 <88> Biological Reactivity Tests, <i>In Vivo</i>	Pass
USP Physicochemical Test for Plastics	1201931-S01	Characterization of physical and chemical properties	United States Pharmacopeia 38, National Formulary 33, 2015 <661> Containers - Plastics	Pass

Regulatory Statements

The use of perfluoroalkyl and polyfluoroalkyl substances has a global environmental focus. This emphasis can be appreciated through the adoption of the voluntary 2010/2015 PFOA Stewardship Program in the US, aimed at facility emissions and product content, as well as in the implementation of European Commission Regulation (EU) number 2017/1000 of 13 June 2017, which amends Annex XVII to Regulation (EC) No 1907/2006 – setting new limits under the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) for perfluorooctanoic acid (PFOA), its salts, and PFOA-related substances, coming into effect on July 4th, 2020.

Versapor RC membrane grades have been designed to meet the requirements of Regulation 2017/1000. For additional details on this and other regulations, please visit the 'Quality at Pall' web page:

<https://www.pall.com/en/about-pall/quality.html#>

By visiting this site, users have immediate access to the most up to date information from Pall on these topics.

Other

Packaging and Shipping Formats

Membrane Grade	Dimension	Part Number
Versapor 200RC	Standard 7-inch x 10-inch Sample Sheet 3-meter roll 7-inch wide roll	VRC02S7X10 VRC02R7X3M VRC02R07000G
Versapor 450RC	Standard 7-inch x 10-inch Sample Sheet 3-meter roll 7-inch wide roll	VRC45S7X10 VRC45R7X3M VRC45R07000G
Versapor 800RC	Standard 7-inch x 10-inch Sample Sheet 3-meter roll 7-inch wide roll	VRC08S7X10 VRC08R7X3M VRC08R07000G
Versapor 1200RC	Standard 7-inch x 10-inch Sample Sheet 3-meter roll 7-inch wide roll	VRC12S7X10 VRC12R7X3M VRC12R07000G
Versapor 3000RC	Standard 7-inch x 10-inch Sample Sheet 3-meter roll 7-inch wide roll	VRC30S7X10 VRC30R7X3M VRC30R07000G
Versapor 5000RC	Standard 7-inch x 10-inch Sample Sheet 3-meter roll 7-inch wide roll	VRC50S7X10 VRC50R7X3M VRC50R07000G

Custom roll, sheet, and disc sizes are available upon request.
Please contact your local sales representative for additional information.

Manufacturing Site – ISO Certificate



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