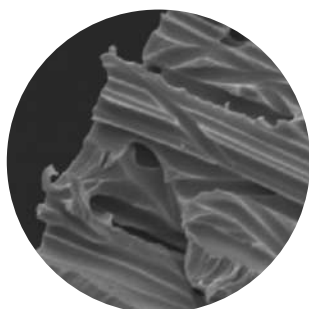


Polycarbonate Track Etched (PCTE) Membrane



GVS Polycarbonate Track Etched (PCTE) Membrane is made from a thin polycarbonate film with precisely defined pores. It is ideally suited for use in cellular-based filtration assays as well as filtration applications where high purity is required. The membrane is produced through a two-step, proprietary manufacturing process that employs high quality standards. In the first step, polycarbonate film is exposed to ion particles that pass through it. As the ions pass through the film, they create "tracks" where the polymer is damaged. The beamed film is then exposed to a chemical that etches out the tracks creating precise, cylindrical pores. Pore density is controlled by the number of tracks per unit area, and pore size is controlled by varying the temperature, strength and time of exposure to the etching solution. This unique process allows for increased control over pore size and density to ensure the physical properties of each membrane precisely fit your specifications. The resulting membrane is a thin, translucent polycarbonate film with a smooth, flat surface. All particles larger than the pore size are captured on its surface.

GVS offers a unique solution for Legionella analysis following the new standard UNI EN ISO 11731. Our sterile gridded membranes are suitable for this test and give you the best performances.

Nominal Product Characteristics

Thickness	5 - 20 μm
Refractive Indices	Birefringent at 1.584 and 1.625
Water Adsorption (% wt. gain 24-hr immersion)	0.24%
Residual Ash Weight Average	0.92 $\mu\text{g}/\text{cm}^2$
Specific Gravity	0.94-0.97
Autoclavable	Yes
Leachables	Negligible
Wetting Characteristics	Hydrophilic or Hydrophobic
Wetting Agent (hydrophilic)	Polyvinylpyrrolidone (PVP)
Burst Strength Minimum	0.7 bar (10 psi)
Migration of Filter Media	0
Optical Properties	Semi-translucent

GVS offers the PCTE Membrane for AOX use (adsorbable organic halogens) with exceptionally low protein-binding/extractable levels and precisely defined pores. These AOX -certified polycarbonate (PCTE) membranes are ideally suited for the detection of man-made pollution in groundwater and wastewater (organic halide adsorption determination).

To optimize the suitability of PCTE, we offer a variety of products with unique characteristics:

PVP (polyvinylpyrillidone)-treated for a hydrophilic membrane

AOX-certified for applications requiring extremely low extractables

Black-dyed membrane for staining applications

PVP-free for a hydrophobic membrane

Characteristics

- Absolute pore size and density allows for precise size separation
- Direct thickness and pore size measurements provide accurate characteristics
- Smooth, thin, glass-like surface is suitable for microscopy and cellular applications
- Superior strength allows for aggressive handling
- Low protein binding ensures clean results
- Resists chemical staining to ease microscopic visualization
- Passes USP VI Class toxicity testing for use

Typical Applications

- General filtration
- Legionella test (UNI EN ISO 11731_2017)
- Removal of red blood cells from plasma
- Flow control of reagents through assays
- Precise filtration and prefiltration
- Fuel testing
- Cytology
- Microscopy

Product Characteristics

Sterilization	Gamma Irradiation or Ethylene Oxide (EtO)
USP Class VI Testing	Passed
Extractables	Very Low
BSA Protein Binding	5 $\mu\text{g}/\text{cm}^2$
Maximum Operating Temperature	284°F (140°C)
Sealing Compatibility	Ultrasonic, Heat, Radio Frequency and Insert Molding
Pore Size Range	0.05 to 20 μm

Disc and Sheet Membranes

Performance Characteristics

Pore Size (a) (µm)	Pore Density (b) (pores/cm²)	Nominal Thickness (c) (µm)	Min. Bubble Point (d) (psi)	Typical Flow Rates		
				Water (e) (mL/min/cm²)	Air (L/min/cm²)	
20	4 x 10 ⁴	3	1	1000	11 (g)	(a) Tolerance + 0%, -20% (b) Tolerance + / - 15% (c) Tolerance + / - 10% (d) Measured using Isopropanol (IPA) (e) Initial flow rates using prefiltered water at 10 psid (0.7 kg/cm²) (f) Initial flow rates using prefiltered air at 10 psid (0.7 kg/cm²) (g) Initial flow rates using prefiltered air at 5 psi (0.35 kg/cm²)
14	5 x 10 ⁴	6	0.2	1400	63.5 (g)	
12	1 x 10 ⁵	8	0.4	1250	63.5 (g)	
10	1 x 10 ⁵	10	0.5	1150	34.5 (g)	
8	1 x 10 ⁵	7	0.7	1000	30 (g)	
5	4 x 10 ⁵	10	1.2	700	30 (g)	
3	2 x 10 ⁶	9	2	440	37.5 (g)	
2	2 x 10 ⁶	10	3	300	16.5 (f)	
1	2 x 10 ⁷	11	6	130	20 (f)	
0.8	3 x 10 ⁷	9	7	90	18 (f)	
0.6	3 x 10 ⁷	9	9	60	7.5 (f)	
0.4	1 x 10 ⁸	10	12	33	7.5 (f)	
0.2	3 x 10 ⁸	10	20	10	3 (f)	
0.1	4 x 10 ⁸	6	30	2.5	1.5 (f)	
0.08	4 x 10 ⁸	6	38	0.6	0.75 (f)	
0.05	6 x 10 ⁸	6	50	0.4	0.37 (f)	
0.03	6 x 10 ⁸	6	NA	0.2	0.075 (f)	
0.01	6 x 10 ⁸	6	NA	0.1	0.0075 (f)	

PCTE AOX Hydrophilic Membrane Ordering information

Pore sizes	Dimensions Packaging	25 mm 100/pk	47 mm 100/pk
	0.4 µm	3026431	1215071

PCTE Hydrophilic Black Membrane Ordering information

Pore sizes	Dimensions Packaging	13 mm 100/pk	25 mm 100/pk	47 mm 100/pk	293 mm 20/pk	203x254 mm 30/pk
	0.1 µm	1215311	1215315	1221503		3048982
	0.2 µm	1215185	1215609	1213889	3027176	
	0.4 µm	1215142	1212790	1214567		1227213
	0.6 µm	1222025	1215290	1215198		3054144**
	0.8 µm	1215236	1215138	1222028	3022140	
	1 µm	1221181	1215161	1222035		
	2 µm		1215297		3033301	
	3 µm		1222452	3032159	3033302	
	5 µm	1221286	1215188	1221230		
	8 µm		1229540			

** 100/pack

Disc and Sheet Membranes

PCTE Hydrophilic Membrane - Sheets and Rolls

Ordering information

Dimensions Packaging	19x42 mm 100/pk	25x80 mm 50/pk	203x254 mm 30/pk	300x3000 mm 1/pk
Pore sizes	0.01 µm		1215116	1225184
	0.03 µm		1227264	1239558
	0.05 µm		1215271	3027177
	0.1 µm		1215117	1239556
	0.2 µm		1215118	1239557
	0.4 µm		1215274	
	0.6 µm		1222027	
	0.8 µm		1222030	3035602
	1 µm	1268126	1221429	1267667
	2 µm		1221232	
	3 µm		1215275	3002536
	5 µm	1221295	1222080	1264835
	8 µm	1220867	1220686	3033093
	10 µm		1220823	3033092
	12 µm			1235494
	20 µm		1221231	

PCTE PVP-Free Hydrophobic Membrane

Ordering information

Dimensions Packaging	13 mm 100/pk	25 mm 100/pk	47 mm 100/pk	90 mm 30/pk	203x254 mm 30/pk	203x254 mm 30/pk	25x80 mm 50/pk
Pore sizes	0.01 µm		1226494		3032133		
	0.1 µm	1221504	1215059			1232919	
	0.2 µm		1222017	1222018		1223036	
	0.4 µm		1220835	1215073		1233373	
	0.8 µm		1222032				
	1.0 µm		1222037	1222038		1224067	
	3.0 µm	1215050	1221871	1222077		1228132	1221296
	5.0 µm	1215051	1221746	1222081	1222082	1225120	1221331
	8.0 µm	1215052	1221293	1215148	1222086	1225783	1215042
	10.0 µm	1215053	1222089	1220941		1234298	1215043
	12.0 µm	1215055	1221300				1215044
	14.0 µm	1221297					

Disc and Sheet Membranes

PCTE Hydrophilic Membrane - Disks Ordering information

Dimensions Packaging	13 mm 100/pk	19 mm 100/pk	25 mm 100/pk	37 mm 100/pk	47 mm 100/pk
0.01 µm	1215046		1215321		1215068
0.03 µm	1215047	1227353	1215057		1215069
0.05 µm	1215048	1221229	1220868		1215070
0.08 µm	1222092	1220668	1215058		1222093
0.1 µm	1215605	1215056	1215606		1215608
0.2 µm	1215610	1220694	1215611		1215612 1226157*
0.4 µm	1215613	1215147	1215614	1215615	1226156* 1215617
0.6 µm	1215618		1215619		1215620
0.8 µm	1215621	1224516	1215622	1215623	1215624
1 µm	1215625	1227203	1215627	1221302	1215628
2 µm	1215985		1215062		1215629
3 µm	1215049		1215063		1215036
5 µm	1215630		1215631		1215632
8 µm	1215633	3013894	1215634		1215637
10 µm	1221009		1215638		1212661
12 µm	1215054		1215984		3027598
14 µm	1222063		1222064		1215077
20 µm	1222072		1222073		1215078

* white, sterile and single packed for Legionella test

PCTE Hydrophilic Membrane - Disks Ordering information

Dimensions Packaging	62 mm 100/pk	76 mm 30/pk	76 mm 100/pk	90 mm 30/pk	142 mm 20/pk	293 mm 20/pk
0.05 µm			1221291	1221227	1221290	1222091
0.08 µm				1222094	1222095	1222096
0.1 µm			1220970	1215150	1215304	1215219
0.2 µm			1220891	1215151	1215215	1215385
0.4 µm	3023783		1228342	1215303	1215152	1215317
0.6 µm		1224680		1222026	1221485	1220861
0.8 µm		1225894		1215194	1215309	1221720
1 µm			1220860	1215153	1216611	1215145
2 µm				1222070	1222071	1221005
3 µm			3013824	1222074	1215113	1222075
5 µm			3013825	1221004	1215388	
8 µm			3034848	1215403	1215201	1222084
10 µm			1267014	1222482	1221292	1222088
12 µm				1239192		
14 µm				1222479		