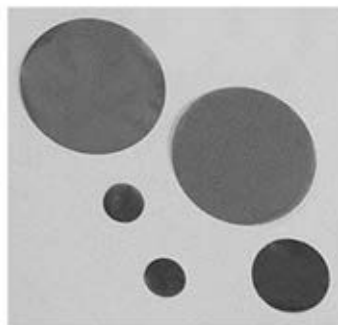
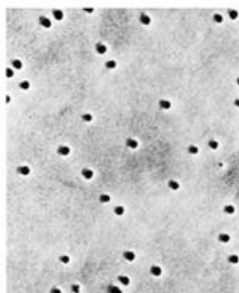


3.1 Membranes for Filtration

3.1.10 - Polycarbonate Track Etched (PCTE) Membrane - Poretics™



Description and Use

GVS Life Sciences PCTE Membrane is made from a thin, microporous polycarbonate film material. It is ideally suited for use in blood assays and high-purity and general filtration.

Standard membrane is hydrophilic due to PVP treatment. PVP-free hydrophobic membrane also available.

Typical Applications

- General filtration
- Removal of red blood cells from plasma
- Flow control of reagents through assay
- Precise filtration and prefiltration

Table 2: Product Characteristics

Sterilization	Gamma Irradiation or Ethylene Oxide (EtO)
USP Class VI Testing	Passed
Extractables	Very Low
BSA Protein Binding	5 µg/cm ²
Maximum Operating Temperature	284°F (140°C)
Sealing Compatibility	Ultrasonic, Heat, Radio Frequency and Insert Molding
Pore Size Range	0.1 to 20 µm

Table 4: Performance Characteristics

Pore Size (a) (µm)	Pore Density (b) (pores/cm ²)	Nominal Thickness (c) (µm)	Min. Bubble Point (d) (psi)	Typical Flow Rates	
				Water (e) (mL/min/cm ²)	Air (L/min/cm ²)
20	4 x 10 ⁴	3	1	1000	11 (g)
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)

(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)

Features and Benefits

- **Absolute pore size and density:** Provides flow control for liquids moving through the membrane capturing 100 percent of cells larger than pore size
- **Smooth, thin, glass-like surface:** Planar surface makes it ideal for particle identification by microscopy
- **Superior strength:** Tensile strength of 207 bar (> 3000 psi) maintains pore size and density, and will not stretch
- **Low extractables:** Ensures tests will be clean promoting consistent results
- **Low protein binding:** Low binding of < 5µg/cm² minimizes loss of protein analytes
- **Negligible absorption/adsorption:** Maximizes critical solution recovery
- **Available as hydrophilic or hydrophobic:** Allows for a wide range of product applications

Table 3: Nominal Product Characteristics

Thickness	5 - 12 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 µg/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

FILTRATION MEMBRANES

Precise Pore Size and Density

GVS Life Sciences PCTE Membrane is produced through a two-step, proprietary manufacturing process that employs high quality standards. 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 and microporous polycarbonate film with a smooth, flat surface. All particles larger than the pore size are captured on its surface. It is ideal for use when collecting samples for blood assays or for high-purity and general filtration.

Flexibility for OEM Requirements

GVS Life Sciences PCTE Membrane is available in rolls measuring 0.66 - 50 cm (1.0 to 20 inches) wide, or sheets, cut disks, capsules and cartridges, with pore sizes ranging from 0.01 μm to 20 μm . This membrane is also available with a black surface for special use in staining applications, or in its natural hydrophobic state for use in chemotaxis. All varieties of the membrane can be custom manufactured to meet your specific membrane size, pore size and pore densities requirements. Tables 2, 3 and 4 show the product and performance characteristics of the GVS Life Sciences PCTE Membrane.

Ordering information: Polycarbonate Track Etched (PCTE) AOX Membrane

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

Ordering information: Polycarbonate Track Etched (PCTE) Hydrophilic Black Membrane

	Dimensions Packaging	13mm 100/pk	25mm 100/pk	47mm 100/pk	293 20/pk	203x254mm 100/pk
Pore sizes	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	3048300	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			1236363

*100/pk

Ordering information: Polycarbonate Track Etched (PCTE) Hydrophilic Membrane (sheets/rolls)

	Dimensions Packaging	19x42mm 100/pk	25x80mm 50/pk	203x254mm 30/pk	300x3000mm 1/pk
Pore sizes	0.01 μm			1215116	1225184
	0.03 μm			1227264	1239558
	0.05 μm			1215271	3027177
	0.08 μm				
	0.1 μm			1215117	1239556
	0.2 μm			1215118	1239557
	0.4 μm			1215274	
	0.6 μm			1222027	3034261
	0.8 μm			1222030	
	1 μm		1268126	1221429	1267667
	2 μm			1221232	3034567
	3 μm	3019515		1215275	3002536
	5 μm	1221295	1215041	1222080	1264835
	8 μm	1220867	1220686	1222085	3033093
	10 μm			1220823	3033092
	12 μm				1235494
20 μm			1221231		

3.1 Membranes for Filtration

Ordering information: Polycarbonate Track Etched (PCTE) PVDF Hydrophobic Membrane

Dimensions Packaging	13mm 100/pkg	25mm 100/pkg	47mm 100/pkg	90mm 30/pkg	203x254mm 100/pkg	25x80 50/pkg
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					

Ordering information: Polycarbonate Track Etched (PCTE) Hydrophilic Membrane (disks)

Dimensions Packaging	13mm 100/pkg	19mm 100/pkg	25mm 100/pkg	37mm 100/pkg	47mm 100/pkg
0.01 μm	1215046	1227352	1215321		1215068
0.03 μm	1215047		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
0.4 μm	1215613	1215147	1215614	1215615	1215617
0.6 μm	1215618		1215619		1215620
0.8 μm	1215621		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	3013893	1222064		1215077
20 μm	1222072		1222073		1215078

FILTRATION MEMBRANES

Ordering information: Polycarbonate Track Etched (PCTE) Hydrophilic Membrane (disks)

Dimensions Packaging	62mm 100/pk	76mm 30/pk	76mm 100/pk	90mm 30/pk	142mm 20/pk	293mm 20/pk
0.01 μm			3032862	1220988		
0.03 μm				1220987		
0.05 μm			1221291	1221227	1221290	1222091
0.08 μm				1222094	1222095	1222096
0.1 μm			1220970	1215150	1215304	1215219
0.2 μm	3038824		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	
1 μm			1220860	1215153	1216611	1215145
2 μm				1222070	1222071	1221005
3 μm	3023784		3013824	1222074		1222075
5 μm	3023785		3013825	1221004	1215388	1221329
8 μm			3034848	1215403	1215201	1222084
10 μm			1267014	1222482	1221292	1222088
12 μm			1264834	1239192		
14 μm				1222479		