

# Field Filtration Devices

## geofilter™ Flatstock Filter Membranes

For trace metals analysis in water, geofilter™ Flatstock Filter Membranes are designed to be used with the Geotech inline filter holders.

### FEATURES

- Excellent reputation in the environmental industry since 1978
- Wide variety of diameters and pore sizes available
- Strong, flexible and economically priced
- Resistant to variable temperatures
- Compatible with Geotech In-Line Filter Holders
- Pre-filters available for high turbidity applications

### APPLICATION

**Cellulose Acetate Membrane:** Recommended for most analytical filtration applications. Made of cellulose triacetate and diacetate, they are highly flexible with a high burst (longitudinal) and tensile (lateral) design strength. These membranes have the lowest extractable level at 0.1% (by wt.), improved heat resistance, low protein binding, and are resistant to low molecular weight alcohols.

**Cellulose Nitrate Membrane:** May be used in most Cellulose Acetate applications (see compatibility chart). Made of pure Cellulose Nitrate, they are typically 80% porous, allowing for excellent flow rates. They have a slightly higher extractable level at 3% (by wt.) and are composed of glycerin and wetting agent. As with all Geotech filter membranes, they are Triton-free and non-reactive to pyrogens (<0.005ng/cm<sup>2</sup> filter area).

**PTFE Membrane (Teflon®):** Are highly porous and resistant to most acids, bases and chemically aggressive solvents. They are naturally hydrophobic making them difficult to use in common filtration of aqueous solutions. They must be pre-wetted with methanol, acetone, or a compatible fluid having a low viscosity (≤0.6 centipoise).

**Glass Fiber Pre-filters:** Are highly recommended for sediment laden samples to reduce the particulate loading on the membrane surface. A pre-filter will greatly extend the life of the membrane. The pre-filters are made by compacting borosilicate glass to form a dense fiber matrix. They are exceptionally pure, containing no binder that could alter the filtrate. Polycarbonate membranes are also available in a variety of pore sizes.



geofilter™ - Cellulose Acetate and Cellulose Nitrate Flatstock Filter Membranes



A geofilter™ is shown being placed in the Geotech Filter Holder

Geotech Environmental Equipment, Inc.

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## Geofilter™ Flatstock Filter Membranes Specifications

CELLULOSE ACETATE MEMBRANE												
Pore Size <sup>12</sup>	Bubble 1 Point	Flow rate:			Porosity <sup>4</sup>	Thickness <sup>5</sup>	Weight <sup>6</sup>	Density <sup>7</sup>	Wetting <sup>8</sup>	Rf <sup>9</sup>	Max <sup>10</sup>	Min <sup>11</sup>
		kg/cm <sup>2</sup>	PSI	water <sup>2</sup>							air <sup>3</sup>	Oper.
µm	kg/cm <sup>2</sup>	PSI	water <sup>2</sup>	air <sup>3</sup>	Porosity <sup>4</sup>	Thickness <sup>5</sup>	Weight <sup>6</sup>	Density <sup>7</sup>	Wetting <sup>8</sup>	Rf <sup>9</sup>	Temp	Pressure
0.8 WP	1.0	14.20	160	13.5	72	125	4.7	0.39	<3	1.47	180	≥ 1.0
0.45 WP	2.6	37	35	4.0	67	125	5.5	0.44	<3	1.47	180	≥ 2.0
0.2 WP	3.3	47	16	1.9	66	125	5.8	0.46	<3	1.47	180	≥ 2.0

  

CELLULOSE NITRATE MEMBRANE												
Pore Size <sup>12</sup>	Bubble 1 Point	Flow Rate:			Porosity <sup>4</sup>	Thickness <sup>5</sup>	Weight <sup>6</sup>	Density <sup>7</sup>	Wetting <sup>8</sup>	Rf <sup>9</sup>	Max <sup>10</sup>	Min <sup>11</sup>
		kg/cm <sup>2</sup>	PSI	water <sup>2</sup>							air <sup>3</sup>	Oper.
µm	kg/cm <sup>2</sup>	PSI	water <sup>2</sup>	air <sup>3</sup>	Porosity <sup>4</sup>	Thickness <sup>5</sup>	Weight <sup>6</sup>	Density <sup>7</sup>	Wetting <sup>8</sup>	Rf <sup>9</sup>	Temp	Pressure
5.0 WP	0.75	11	400	40.9	84	160	4.2	0.26	<3	1.5	130	<0.45
3.0 WP	0.90	13	300	28.3	83	155	4.4	0.29	<3	1.5	130	<0.50
1.2 WP	1.15	16	220	20.4	83	150	4.4	0.29	<3	1.5	130	<0.60
0.8 WP	1.35	19	165	15.0	81	150	4.6	0.31	<3	1.5	130	<0.65
0.8 WG	1.10	16	145	13.9	78	135	4.9	0.36	<3	1.5	130	<0.50
0.65 WP	1.70	24	120	11.2	81	150	4.8	0.32	<3	1.5	130	<0.70
0.65 WG	1.30	18.5	100	10.2	76	135	5.0	0.36	<3	1.5	130	<0.60
0.45 WP	2.80	40	45	5.0	78	145	5.2	0.36	<3	1.5	130	<1.10
0.45 WG	1.85	26	57	5.8	77	133	5.2	0.39	<3	1.5	130	<0.80
0.3 WP	3.30	47	30	3.7	77	140	5.3	0.38	<3	1.5	130	<0.70
0.2 WP	4.30	61	17.5	2.4	75	133	5.5	0.41	<3	1.5	130	<1.10
0.1 WP	3.10	41	2.7	0.67	66	110	6.3	0.56	<3	1.5	130	<1.45

  

GLASS FIBER PRE-FILTERS											
Order No.	Applications/Characteristics	Weight (g/m <sup>2</sup> )	Thickness (mm)	Particle Retention			Pressure Drop (mm/H <sub>2</sub> O/5cm/sec)	Binder	Max Temp (°C)		
				Liquid (µm)	Water Flowrate (sec)	Gas Collection efficiency					
GGF-24	Used for coarse or general purpose pre-filtration	123	0.52	2.7	14	97	25	None	500		
GGF-28	Recommended for high volume filter holders. Has very low trace metal content.	95	0.38	2.0	18	9.9	32	None	500		
GGF-30	Recommended for suspended solids analysis of industrial waters and waste waters. Low absorption makes this filter ideal for scintillation counting.	48	0.19	1.2	27	99.9	49	None	500		

  

1	Bubble point is the minimum pressure in kg/cm <sup>2</sup> or psi required to force air through a membrane. Pre-wet with water except 0.1 micron pore size cellulose nitrate which is pre-wet with isopropanol.	6	Weight in mg/cm <sup>2</sup> .
2	Liquid flow rates reflect initial flow rates in ml/min/cm <sup>2</sup> using water pre-filtered to 0.1 µm pore size at 10 psi differential pressure.	7	Density in g/cm <sup>3</sup>
3	Air flow rates reflect initial flow rates of pre-filtered nitrogen in l/min/cm <sup>2</sup> at 10 psi differential pressure.	8	Wetting time is the maximum time in seconds to wet a 47mm diameter disc with aqueous 1% methylene blue.
4	Porosity refers to the percent of open area.	9	R <sub>f</sub> refractive index.
5	Thickness in µm.	10	Maximum operating temperature in °C.
		11	Burst pressure is the minimum pressure in kg/cm <sup>2</sup> required to rupture exactly 1 cm <sup>2</sup> area of dry unsupported membrane.
		12	W = white, P = plain, G = Grid.

  

1	Water flow rates are the time required for filtering 1 litre of deionized water at 20°C through a filter area of 9.6cm <sup>2</sup> using 300 mm Hg vacuum.
2	Tests performed are conducted in accordance with ASTM D2986-71.

**CALL GEOTECH TODAY (800) 833-7958**

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