

# 3M™ Liqui-Cel™ EXF-8×20 Series Membrane Contactor for TransMembrane ChemiSorption

All operating parameters listed in this data sheet are based on a sulfuric acid stripping solution on the lumen side. Refer to Operating Guide for other acids. Usual operation is semi-batch mode with feedwater running in single pass through membrane contactor with acid in recirculation mode.

## Typical Properties

Membrane Characteristics	
Cartridge Configuration	Extra-Flow with Center Baffle
Shell Side Liquid Flow Guideline	0.25 – 2 m <sup>3</sup> /hr (1 – 9 gpm)
Lumen Side Liquid Flow Guideline	0.25 – 2 m <sup>3</sup> /hr (1 – 9 gpm)
Membrane Type	X50 Fiber
	Recommended for Transmembrane Chemisorption (TMCS) process
Membrane/Potting Material	Polypropylene/Epoxy
Priming Volume (approximate)	
Shell Side	6.6 L (1.7 gal.)
Lumen Side	5.6 L (1.5 gal.)

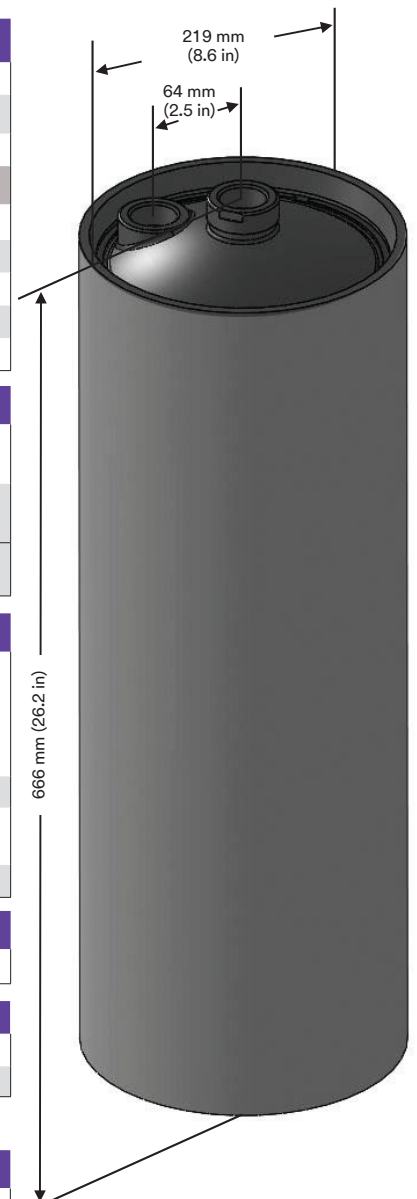
Pressure Guidelines	
Maximum Shell Side Liquid Operating Temperature/Pressure	5-50°C, 3.1 barg (41-122°F, 45 psig)
Maximum Lumen Side Liquid Operating Temperature/Pressure*	5-50°C, 3.1 barg (41-122°F, 45 psig)
* Maximum 50% acid concentration. Lumen side pressure may require derating depending on acid type. See User Guide for TransMembrane ChemiSorption (TMCS) for details.	

Housing Options and Characteristics	
Material	<b>PVC housing</b> Due to the nature of the material, scratches, blemishes and other marks may be visible on the housing surface. These do not impact contactor function. <b>Engineering thermoplastic end caps</b>
Port Connections	
Shell Side (Inlet/Outlet)	1.5 inch OD grooved pipe fitting with internal 1 inch female NPT thread
Lumen Side (Inlet/Outlet)	1 Inch female NPT

Seal Material	
FKM	

Weight (approximate)	
Dry	12 kg. (27 lbs.)
Water-Filled (Shell Side and Lumen Side)	25 kg. (54 lbs.)

Regulatory	
Complies with the limits as set by (EU) 2015/863 amending Annex II to the Restriction on Hazardous Substances (RoHS) Directive (2011/65/EU).	

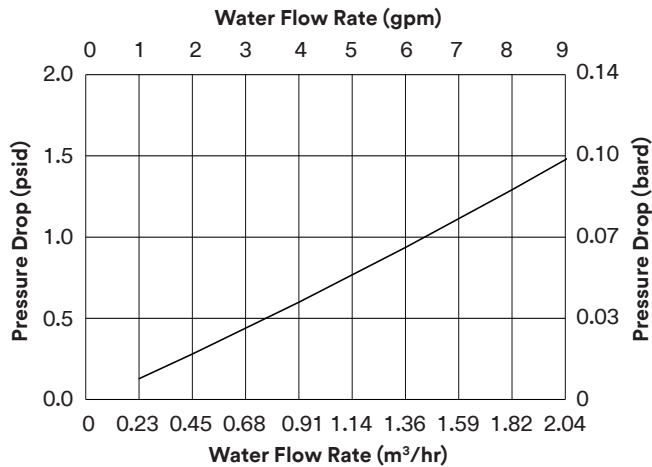


All dimensions are nominal values. See 3M.com/Liqui-Cel for all housing drawings.

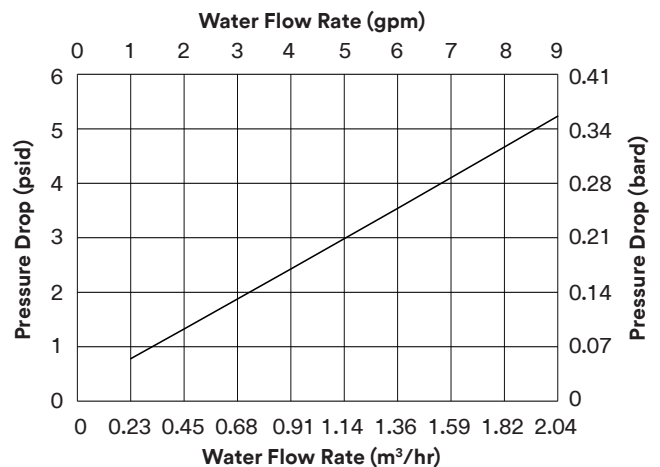
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## Shell Side Pressure Drop (dP)



## Lumen Side Pressure Drop (dP)



Pressure drop (dP) curves represent nominal values using water. Characteristics may change under different operating conditions. These charts should not be used to design systems.

### Test conditions

One membrane contactor in series  
 Water temperature shell side: 25°C (68°F)  
 Water temperature lumen side: 20°C (77°F)  
 Viscosity: 1 cP (1 mPa-s)

Viscosity has a strong influence on dP and is a function of liquid type, concentration, and temperature.

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