3M Science. Applied to Life.™

Separation and Purification Sciences Division

Data sheet

# 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 $m^3$/hr (1 – 9 gpm) |
| Lumen Side Liquid Flow Guideline | 0.25 – 2 $m^3$/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 (41-122°F) | 3.1 barg (41-122°F, 45 psig) |
| Maximum Lumen Side Liquid Operating Temperature/Pressure | |
| 5-50°C (41-122°F) | 3.1 barg (41-122°F, 45 psig) |

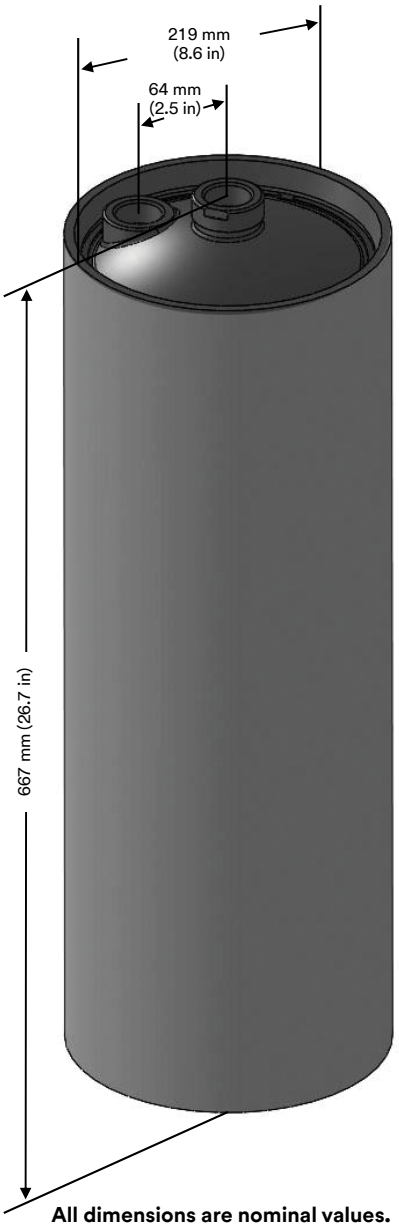
* Maximum 50% acid concentration. Lumen side pressure may require derating depending on acid type. See User Guide for TransMembrane ChemiSorption (TMCS) for details.

| **Housing Options and Characteristics** | |
|---|---|
| Material | **PVC housing:** 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. **Engineered thermoplastic end caps** |
| Port Connections | |
| Shell Side (inlet/outlet) | Each shell side port on the end caps has a dual connection with 1.5 inch OD grooved pipe fitting and 1 inch female NPT. |
| 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). |

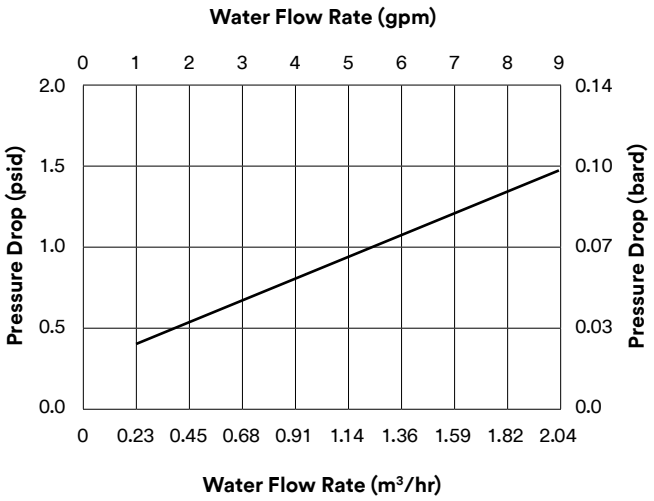



**All dimensions are nominal values. See 3M.com/Liqui-Cel for all housing drawings.**

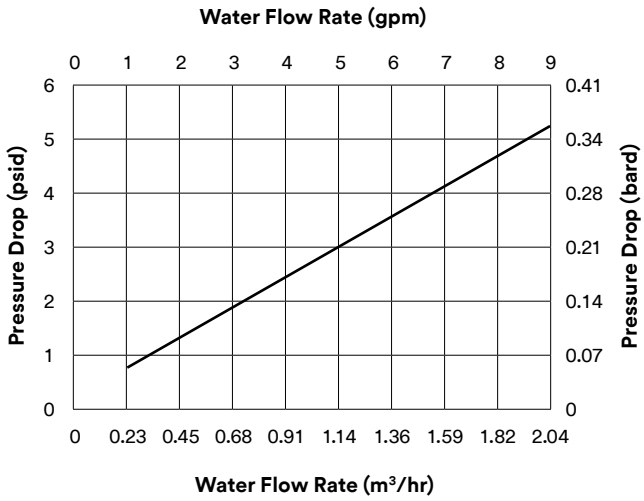
**Not for consumer sale or use.**

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

## 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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**3M Company**
**3M Separation and Purification Sciences Division**
13840 South Lakes Drive
Charlotte, North Carolina 28273 USA
Phone: +1 980 859 5400

**3M Deutschland GmbH**
**3M Separation and Purification Sciences Division**
Öhder Straße 28
42289 Wuppertal Germany
Phone: +49 202 6099 - 0

www.3M.com/Liqui-Cel



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