



Clarisolve[®] Depth Filters

User Guide

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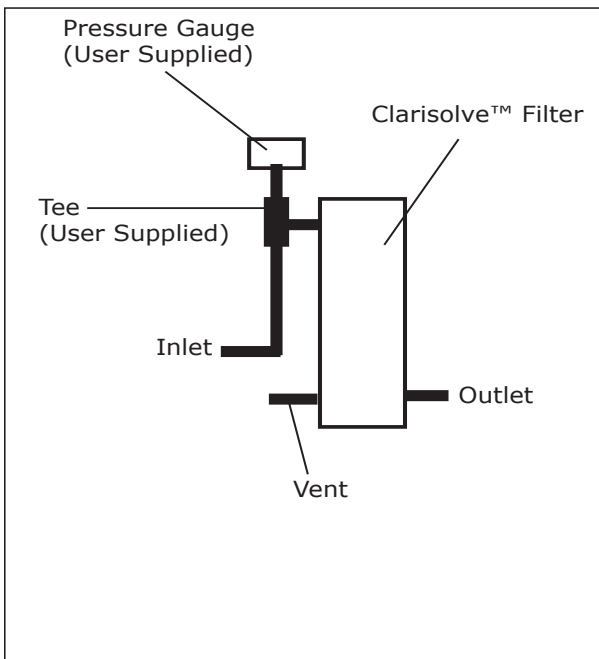
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Set-Up

NOTE A tubing kit is available, contact your local representative.

1. Connect inlet and outlet tubing to the filter if required.
2. Connect the inlet port of the filter to the feed line.
3. Connect the outlet port of the filter to the collection line.
4. Connect the vent port of the filter to the vent line.
5. Install a pressure gauge on the inlet or vent line.



Flushing

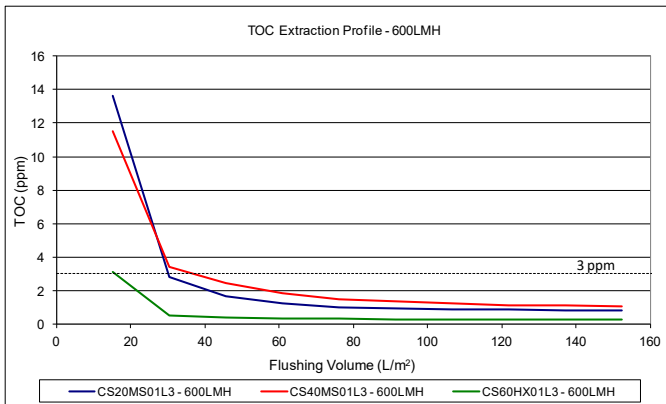
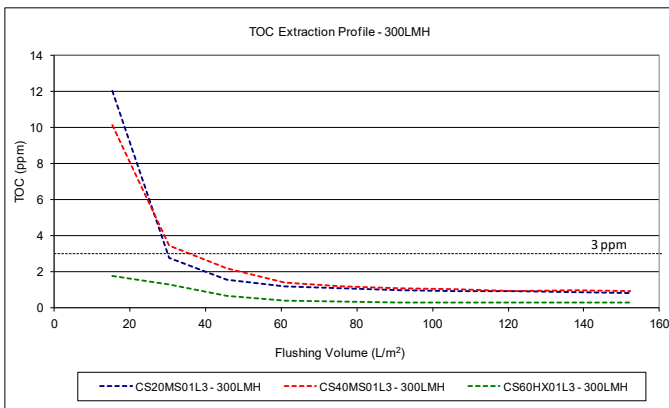
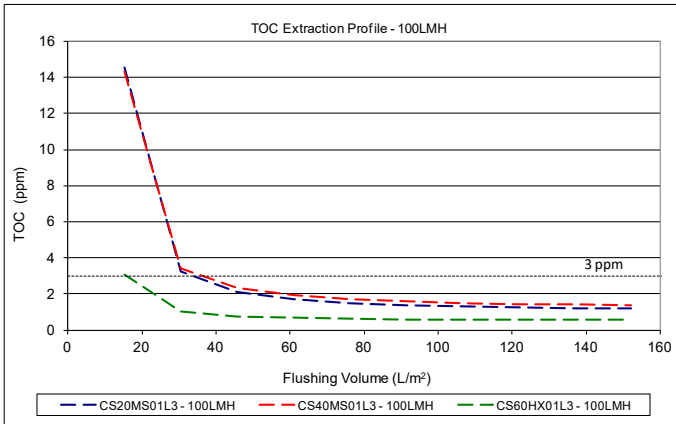
Flush devices with buffer or purified water prior to use. To fully wet the media, the filter may be flushed at three different flux rates as listed here:

Flux Rate (LMH)	Filter Area (m ²)					
	0.0023	0.014	0.027	0.11	0.33	0.55
	Flow Rate (mL/min)					
600	23	140	270	1100	3300	5500
300	11.5	70	135	550	1650	2750
100	3.8	23	45	183	550	917

To flush the filter:

1. Install new tubing on the inlet, outlet and vent lines of the filter.
2. Attach a pressure gauge to the vent or inlet port to monitor inlet pressure.
3. Attach a vent valve or clamp at the end of the vent tubing.
4. Open the vent to purge any air from the filter.
5. Close the vent. Flow will now be sent through the filter. For 100 and 300 LMH flow rates, back pressure is recommended to wet the device. To create the back pressure, close the outlet and vent valves. When the pressure in the device reaches 10 psig, gradually open the vent to purge any air from the filter.
6. Over about 30 seconds, gradually increase the flow to achieve the desired flux rate.
7. Start the flush.
8. Flush until the desired TOC level is reached (see the following graphs).

The graphs below were generated with μ Pod® device flushing data but are applicable for all filter sizes.



Process Optimization

Measure inlet pressure and filtrate turbidity (as well as original process fluid turbidity) over time to allow performance and sizing calculations.

Product Recovery

To recover product held up in the device, connect the device vent port to an air supply and apply 0.35 bar (5 psi) for up to 10 minutes.

Specifications

Materials of Construction

Component	Material		Filter		
			µPod®	Lab Scale	Pod
Housing	Glass filled polypropylene		X	X	X
Adapters	Glass Filled Polypropylene				X
Gaskets and Plugs	Thermo Plastic Elastomer (TPE)			X	X
Filter Media	20MS	Polypropylene and cellulose fiber combined with an inorganic filter aid	X	X	X
	40MS	Polypropylene and cellulose fiber combined with an inorganic filter aid	X	X	X
	60HX	Polypropylene	X	X	X

Operating Parameters

Parameter		Filter	Specification
Effective Surface Area		μPod®	23 cm ²
		Lab Scale	0.014 m ²
			0.027 m ²
		Pod	0.11 m ²
			0.33 m ²
0.55 m ²			
Inlet, Outlet and Vent Connections		μPod®	Female Luer
		Lab Scale	¼ in. (6 mm) Hose barb
		Pod	Flat seal
Operating Temperature Range		μPod®	4 to 40 °C
		Lab Scale	4 to 37 °C
		Pod	4 to 25 °C
Sterilization		μPod®	Autoclave for two cycles of 60 minutes at 123 °C
		Lab Scale	
		Pod	Autoclave for one cycle of 60 minutes at 123 °C
Typical Process Flux		100 to 600 LMH	
Maximum Differential Pressure	μPod®	Forward	2.1 bar (30 psid) at ≤ 40 °C
		Reverse	1.0 bar (15 psid) at ≤ 40 °C
	Lab Scale	Forward	2.1 bar (30 psid) at ≤ 37 °C
		Reverse	2.1 bar (30 psid) at ≤ 37 °C
	Pod	Forward	2.1 bar (30 psid) at < 25 °C 1.0 bar (15 psid) at < 80 °C
		Reverse	2.1 bar (30 psid) at < 25 °C
Housing Operating Pressure		μPod®	3.5 bar (50 psig) at ≤ 40 °C
		Lab Scale	2.1 bar (30 psig) at ≤ 37 °C
		Pod	3.5 bar (50 psid) at < 25 °C 1.0 bar (15 psid) at < 80 °C

Pressure must be monitored at inlet or vent connections.

Hold-Up Volumes

Filter	Effective Surface Area	Hold-Up Volume (mL)			
			Media Grade		
			20MS	40MS	60HX
μPod®	23 cm ²	Fully Wet	42-48	42-48	50-54
		Blow Down	16-20	16-20	4-8
Lab Scale	0.014 m ²	Fully Wet	260-320	260-320	300-360
		Blow Down	130-190	130-190	100-160
	0.027 m ²	Fully Wet	510-570	510-570	530-590
		Blow Down	300-350	300-350	240-290
Pod	0.11 m ²	Fully Wet	3100-3400	3100-3400	3200-3500
		Blow Down	500-700	500-700	300-500
	0.33 m ²	Fully Wet	8400-9000	8400-9000	7700-8300
		Blow Down	1800-2400	1800-2400	3300-3600
	0.55 m ²	Fully Wet	13500-14500	13500-14500	12800-13800
		Blow Down	3100-4100	3100-4100	3000-3400

Technical Assistance

For more information, contact the office nearest you or visit the Technical Service page at www.emdmillipore.com/techservice.

Worldwide contact information is available at www.emdmillipore.com/offices.