

July 27, 2012

Dear customer:

Per your request related to a recent change notification, here are specifications for the cellulosic membrane used in Nalgene® MF75™ filter units and bottle top filters.

Specification	Current Membrane	New Membrane
Material	Cellulose Nitrate (Cellulose Ester)	Mixed Cellulose Ester
Pore size	0.2 microns	0.2 microns
Membrane color	white/no grid	white/no grid
Bacterial test organism	<i>B. diminuta</i>	<i>B. diminuta</i>
Bubble point with water	4.0-5.1 bar (58-74 psi)	3.5-4.5 bar (50-65 psi)
Flow rate with water	17.2-32.2 ml/(min cm ² bar)	16.8-25.1 ml/(min cm ² bar)
Flow rate with media (RPMI+10% BGS)	4.2-4.7 ml/(min cm ² bar)	4.9-6.2 ml/(min cm ² bar)
Extractable with water	≤ 1 %	≤ 1%
Pore size	0.45 microns	0.45 microns
Membrane color	white/green grid	white/no grid
Bacterial test organism	-----	<i>S.marcescens</i>
Bubble point with water	2.3-3.7 bar (33-54 psi)	2.1-2.5 bar (30-36 psi)
Flow rate with water	≥50 ml/(min cm ² bar)	50.3-83.8 ml/(min cm ² bar)
Extractable with water	≤ 2.5 %	≤ 1%
Pore size	0.8 microns	0.8 microns
Membrane color	white/black grid	white/black grid
Bacterial test organism	-----	-----
Bubble point with water	1.4-2.1 bar (20-30 psi)	0.9-1.2 bar (14-18 psi)
Flow rate	with air: 1.4-2.1 L/(m ² sx0.02 bar)	with water: 157-251 ml/(min cm ² bar)
Extractable with water	≤ 1 %	≤ 1%

Sincerely yours,



Andy Wright
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