



Retention of *P. diminuta* by 4CB-MM Water Filter Cartridges

Neue Artikelnummer PRO2 / PRO4

Test report ref. n°:	Everpure 01
On behalf of:	Everpure Europe nv
Customer order n°:	25000467

Cartridges ID	Two 4CB-MM Water Filter Cartridges containing a micro-filter membrane
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Beginning of test:	24/08/2005	Conclusion of test:	26/08/2005
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Test organism:	<i>Pseudomonas (Brevundimonas) diminuta</i>	(ATCC 19146)
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Objective of the test

The objective of the test is to determine the retention of *Pseudomonas (B) diminuta* in the two 4CB-MM Water Filter Cartridges.

Test description

The two identical 4CB-MM Water Filter Cartridges were identified as A and B, and successively tested.

A cartridge was connected to the drinking water distribution system after an activated carbon filter (to eliminate traces of chlorine) and a pressure controller. The pressure drop across the membrane cartridge was 1,8 bar.

The filter was first flushed with water without bacteria for 5 minutes. Then bacteria were injected during 5 minutes by means of a dosing pump into the inlet of the cartridge to a challenge of at least 1×10^6 cfu/ml. 3 samples of 1000 ml were taken at the end of the flushing period. The samples were further concentrated by membrane filtration and also plated on 869 agar. The cartridge was not sterilised prior to the test.

Test result Cartridge A

Concentration of *P. diminuta* in concentrated suspension: 2.2×10^9 cfu/ml

Flow rate through filter: 5.0 l/min

Water pressure at filter inlet: 1.8 bar, free outlet.

Sample point	Concentrated <i>P. diminuta</i> suspension: flow rate [ml/min]	Water flow rate (ml/min)	Influent concentration <i>P. diminuta</i> [cfu/ml]	Effluent concentration <i>P. diminuta</i> [cfu/ml]	Log removal <i>P. diminuta</i>
After 5 min bacterial injection	11.77	5000	3.3×10^6	$<1.0 \times 10^{-3}$	>9.52

Test result Cartridge B

Concentration of *P. diminuta* in concentrated suspension: 1.9×10^9 cfu/ml

Flow rate through filter: 5.0 l/min

Water pressure at filter inlet: 1.8 bar, free outlet

Sample point	Concentrated <i>P. diminuta</i> suspension: flow rate [ml/min]	Water flow rate (ml/min)	Influent concentration <i>P. diminuta</i> [cfu/ml]	Effluent concentration <i>P. diminuta</i> [cfu/ml]	Log removal <i>P. diminuta</i>
After 5 min bacterial injection	11.74	5000	1.0×10^6	3.0×10^{-3}	8.52

Conclusion

The two 4CB-MM Water Filter Cartridges containing a micro-filter membrane, showed respectively a log removal of >9.52 for cartridge A and 8.52 for cartridge B when challenged with *Pseudomonas (B) diminuta*.

In cartridge A microorganisms different from *Pseudomonas diminuta* were detected in the outlet, probably due to a local contamination of the coupling placed above the filter. This observation points that a clean coupling, and a preceding disinfection of the unit before placing, is crucial so that a pure end product can be guaranteed.

Mol, Monday, 29 August 2005

Analysts in charge:

All results have been reviewed and approved by:



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