

Furich ePTFE filter Washability with 75% Alcohol Test

Test Article: MWPTFE95
Study number: 20200322-A12
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1. Test Method

There are currently no established standards employed by accredited testing laboratories to measure filtering efficiency of the mask after wash or alcohol disinfection. Thus we have established our own scientific test standard to simulate normal mask use and daily wash/disinfect procedures. The disinfection instruction is as follow:

1. Spray on both sides of the mask until completely soaked, with 75% alcohol.
2. Wait to dry completely before use.

The test was performed on a batch of 30 randomly selected samples of the same lot number and the efficiency must not drop by more than 5% of the initial efficiency value, measured using NaCl aerosol @0.3um particle size, with the standard flow rate of 85 LPM. Test samples are randomly selected and tagged, then is cycled through the washing instruction stated above in groups of 3. Each mask is then tested with 0.3um NaCl particles to obtain their after-wash efficiency value.

2. Results:

Test Articles	Number of wash cycles	Filtration Efficiency (%) Averaged by 3 samples
1,2,3	1	99.1
4,5,6	2	99
7,8,9	3	98.5
10,11,12	4	98.8
13,14,15	5	99.5
16,17,18	6	98.7
19,20,21	7	99.3
22,23,24	8	99.1
25,26,27	9	98.7
28,29,30	10	99.3

3. Analysis:

As can be seen from the data, there does not appear to be any statistically trend of filtration efficiency deterioration on the ePTFE membrane filter due to 75% alcohol

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wash cycles. This was expected as membrane filtration does not rely on electrostatic charge to capture particles thus is not affected by the discharge effects of 75% alcohol or water.

4. Conclusion:

Furich's proprietary ePTFE membrane filter has shown to be able to handle 75% alcohol disinfection wash cycles without any significant efficiency drop due to charge decay.