

# SAM Medical Filters

## Viral Filtration Efficiency & Protection against Covid-19

### Datasheet

#### VIRAL FILTRATION EFFICIENCY (VFE) of SAM filters MSP1002 and MSP1003



This document outlines the specific viral filtration efficiency (VFE) tests that have been carried out on the material membrane that is used within MGE's Anti-bacterial and Hydrophobic medical filters (MSP1002 and MSP1003). It has been produced to provide guidance to appropriate medical personnel regarding the level of protection that these filters offer against the SARS-CoV-2 virus (COVID-19) when used in conjunction with MGE Medical Suction equipment.

Whilst specific VFE testing utilising the COVID-19 virus has not been carried out on the filtration membrane, all VFE tests were conducted using  $\Phi$ X174 bacteriophage. This is one of the smallest known viruses with a size of 25-27nm (0.025-0.027 microns) and is a nonenveloped, isosahedral virus.

In comparison, COVID-19 particle size is 60-140nm (0.06-0.14 microns) and as such, from current Scientific information and to the best of the test laboratory's knowledge, these test results can also be applicable to COVID-19 filtration efficiency.

#### Summary of Test Process

A suspension of  $\Phi$ X174 bacteriophage was delivered to a 3" diameter test piece of filter membrane to determine the filtration efficiency. A challenge level of greater than  $10^7$  plaque-forming units (PFU) was pumped through a nebuliser at a controlled flow rate of 30 lpm at a fixed pressure. This generated aerosol droplets with a mean particle size of ~2.9 microns in a glass aerosol chamber which were drawn through the filter membrane into all glass impingers (AGIs) in parallel. The Challenge was delivered for a one-minute interval and sampling through the AGIs was conducted for two minutes to clear the aerosol chamber.

#### Test Results

The test procedure employed was a modification of a standard NLI VFE test in order to employ a more severe challenge than would typically be experienced during normal use. All test method acceptance criteria were met, and testing was performed in compliance with International regulations.

Total PFU Recovered	Filtration Efficiency (%)
<1 *	>99.9999964

\* There were no detected plaques on any of the assay plates for this test filter membrane



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LIT092 Issue-01 – June 2020