

BACTERIAL FILTRATION EFFICIENCY (BFE)

Test Summary The mask was clamped between a six-stage cascade impactor and an aerosol chamber. A bacterial suspension of *Staphylococcus aureus* was introduced into the aerosol chamber using a four-Jet atomizer. The aerosol was drawn through the sample material using a vacuum pump attached to the cascade impactor. The cascade impactor collects aerosol droplets that penetrate the mask material onto agar plates and sorts them by particle size. Positive control samples were also collected with no test specimen clamped in the test apparatus to verify the bacterial challenge rate (upstream counts). Following the incubating period, the colony forming units (CFU) on the agar plates were counted (downstream counts). The ratio of the upstream counts from the positive control, to the downstream counts collected for the test specimen, was calculated and reported as the bacterial filtration efficiency (BFE). This test was conducted in accordance with Test Method ASTM F2101.

Date Tested 10-Nov-2020
Test Side and Area Inside, Centre (40 cm²)
Conditioning Parameters 85 ± 5% relative humidity and 21 ± 5°C for a minimum of 4h
Flow Rate 28.3 L/min
Mean Particle Size (MPS) 3.3 µm
Negative Control Count 0 CFU
Positive Control Average 3738 CFU
Acceptance Criteria Control average must be 1.7 to 3.0 x 10³ CFU
 MPS of aerosol must be 3.0 ± 0.3 µm
 ASTM Level 1: ≥95% BFE
 ASTM Level 2 and 3: ≥98% BFE



Article No.	BFE %
1	96.98
2	96.95
3	97.27
4	97.59
5	97.22

Article No.	BFE %
6	n/a
7	n/a
8	n/a
9	n/a
10	n/a

Average Filtration Efficiency 97.2
Standard Deviation 0.260

Authorized by: