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Latex Particle Challenge Final Report

Test Article: Masks
 Laboratory Number: 697590
 Study Received Date: 19 Jun 2013
 Test Procedure(s): Standard Test Protocol (STP) Number: STP0005 Rev 03

Summary: This procedure was performed to evaluate the non-viable particle filtration efficiency (PFE) of the test article. Monodispersed polystyrene latex spheres (PSL) were nebulized, dried, and passed through the test article. The particles that passed through the test article were enumerated using a laser particle counter.

Three one-minute counts were performed, with the test article in the system, and the results averaged. Three one-minute control counts were performed, without a test article in the system, before and after each test article and the counts were averaged. Control counts were performed to determine the average number of particles delivered to the test article. The filtration efficiency was calculated using the average number of particles penetrating the test article compared to the average of the control values.

The procedure employed the basic particle filtration method described in ASTM F2299, with some exceptions; notably the procedure incorporated a non-neutralized challenge. In real use, particles carry a charge, thus this challenge represents a more natural state. The non-neutralized aerosol is also specified in the FDA guidance document on surgical face masks. All test method acceptance criteria were met.

Test Side: Outside
 Area Tested: 91.5 cm²
 Particle Size: 0.1 µm (0.102 ± 0.003 µm)
 Laboratory Conditions: 19°C, 34% relative humidity (RH) at 0829; 20°C, 34%RH at 0958
 Average Filtration Efficiency: 99.1 %
 Standard Deviation: 0.14

Results:

Test Article Number	Average Test Article Counts	Average Control Counts	Filtration Efficiency (%)
1	76	10,850	99.30
2	122	11,984	99.0
3	100	11,840	99.16
4	93	11,133	99.17
5	120	11,650	99.0


 Study Director Brandon L. Williams


 Study Completion Date