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## Latex Particle Challenge Final Report

Test Article: 15040815, 15040816, 15040817, 15040818, 15040819  
 Purchase Order: NA2410  
 Laboratory Number: 823922  
 Study Received Date: 27 May 2015  
 Test Procedure(s): Standard Test Protocol (STP) Number: STP0005 Rev 04

**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. Testing was performed in compliance with US FDA good manufacturing practice (GMP) regulations 21 CFR Parts 210, 211 and 820.

Test Side: Inside  
 Area Tested: Entire Mask  
 Particle Size: 0.1 µm  
 Laboratory Conditions: 21°C, 32% relative humidity (RH) at 1236; 21°C, 33% RH at 1603  
 Average Filtration Efficiency: >99.976%  
 Standard Deviation: 0.0245

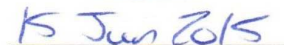
### Results:

Test Article	Average Test Article Counts	Average Control Counts	Filtration Efficiency (%)
15040815	3	10,198	99.974
15040816	1	11,250	99.9941
15040817	8	11,938	99.936
15040818	<1	12,317	>99.9973
15040819	3	12,451	99.979

  
 Study Director

Brandon L. Williams



  
 Study Completion Date