

## Latex Particle Challenge Final Report

Test Article: RZR Dustmask  
 Laboratory Number: 557825  
 Study Received Date: 06 Dec 2010  
 Test Procedure(s): Standard Test Protocol (STP) Number: STP0005 Rev 03

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

Three one-minute counts were performed and the results averaged. Three one-minute control counts were performed, without a test article in the system, before and after each test article. The filtration efficiency was calculated using the average of the test article value 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.

Area Tested: Entire Test Article  
 Particle Size: 0.1  $\mu\text{m}$  (0.097  $\pm$  0.003  $\mu\text{m}$ )  
 Laboratory Conditions: 19°C, 32%relative humidity (RH) at 1125; 19°C, 32%RH at 1217  
 Average Filtration Efficiency: 99.902%  
 Standard Deviation: 0.0226

**Results:**

Test Article Number	Average Test Article Counts	Average Control Counts	Filtration Efficiency (%)
1	16	12,666	99.87
2	11	11,958	99.911
3	12	11,523	99.89
4	11	11,182	99.90
5	8	11,762	99.935

  
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 Study Completion Date