

# *AATCC TEST METHOD*

## *100 – 2012*

*Antibacterial Finishes on Textile Materials:  
Assessment of*

*FINAL REPORT: R2018-82*

Prepared for:  
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*Testing Initiated: February 20, 2018*  
*Testing Completed: February 23, 2018*  
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### **Objective:**

To provide a quantitative evaluation of the antibacterial activity in one sample as demonstrated by AATCC Test Method 100-2012.

### **Test Sample Identification:**

1. Blue NB Fabric Sample w/LumActiv – AD

### **Test Procedure Summary:**

Sample swatches were stacked and placed into sterile containers. The number of swatches to be tested was determined by the number of swatches that could absorb  $1.0 \pm 0.1$  mL of inoculum without leaving any free liquid. One (1.0) mL of the  $10^5$  CFU/mL inoculum was placed onto the top swatch and allowed to wick through the sample stack. The inoculated swatches were incubated for a specified contact time. At the appropriate contact time, neutralizing broth was added to each container and the containers were shaken for 1 minute to release the inoculum from the test swatches and into the neutralizing broth. Serial dilutions were made, and the plates incubated. After incubation, colonies of recovered bacteria are counted and used to determine percent reductions.

#### **Test Variables**

<b>Test Organism:</b>	Staphylococcus aureus ATCC#6538 Klebsiella pneumoniae ATCC#4352
<b>Dilution Medium Used:</b>	<i>S. aureus</i> : 1:500 Tryptic Soy Broth/Phosphate Buffered Saline with 0.05% Triton X-100 <i>K. pneumoniae</i> : Phosphate Buffered Saline with 0.05% Triton X-100
<b>Neutralizing Broth Used:</b>	100mL D/E Neutralizing Broth
<b>Method of Sterilization /Pre-Cleaning:</b>	None
<b>Sample Description:</b>	4.8cm diameter disc cut from larger submitted samples
<b>Number of Swatches per Sample:</b>	One
<b>Untreated Control:</b>	Untreated Fabric Control - ISO 105-F02 Adjacent Cotton
<b>Contact Time:</b>	24 Hours
<b>Deviations from Standard Test Method:</b>	None, testing performed per AATCC 100 without deviation.



## **Test Results:**

The results below pertain only to samples tested.

Percent reductions were determined by comparing each test sample after the contact time to the untreated fabric control immediately after inoculation.

### **Percent reduction of bacteria per sample against**

#### **Staphylococcus aureus ATCC#6538**

<b>Sample</b>	<b>Recovered Bacteria After Contact Time = 24 Hours (CFU/Sample)</b>	<b>Percent Reduction Compared to Untreated Fabric Control</b>
Blue NB Fabric Sample w/LumActiv – AD	< 1.0 x 10 <sup>2</sup>	99.97

The average number of *Staphylococcus aureus* ATCC#6538 recovered from the untreated fabric control immediately after inoculation was 3.0 x 10<sup>5</sup> CFU/sample.

### **Percent reduction of bacteria per sample against**

#### **Klebsiella pneumoniae ATCC#4352**

<b>Sample</b>	<b>Recovered Bacteria After Contact Time = 24 Hours (CFU/Sample)</b>	<b>Percent Reduction Compared to Untreated Fabric Control</b>
Blue NB Fabric Sample w/LumActiv – AD	< 1.0 x 10 <sup>2</sup>	99.96

The average number of *Klebsiella pneumoniae* ATCC#4352 recovered from the untreated fabric control immediately after inoculation was 2.3 x 10<sup>5</sup> CFU/sample.

Percent reduction is translated into log reduction by the following:

90% reduction = 1 log reduction; i.e. 1,000,000 reduced to 100,000 is a 1 log reduction

99% reduction = 2 log reduction; i.e. 1,000,000 reduced to 10,000 is a 2 log reduction

99.9% reduction = 3 log reduction; i.e. 1,000,000 reduced to 1,000 is a 3 log reduction

99.99% reduction = 4 log reduction; i.e. 1,000,000 reduced to 100 is a 4 log reduction

< 1.0 x 10<sup>2</sup> means there were no test organisms found on the lowest dilution plate. The detection limit on this test is 1.0 x 10<sup>2</sup> due to the 100x dilution that occurs with the addition of the neutralizing broth. When no bacterial colonies are found on the lowest dilution, the results are reported as < 1.0 x 10<sup>2</sup> CFU/Sample, which means less than 100 Colony Forming Units per Sample.