

## Silver Bandages

(Submitted by Noble Innovations, LLC)

### Microbiological Analysis Report

**Project # 15625**

Date Received: 7/8/2020

Date of Analysis: 7/30/2020

#### Subject: AATCC 100 - Assessment of Antibacterial Finishes on Textile Materials

**Protocol:** AATCC Test Method 100, Assessment of Antibacterial Finishes on Textile Materials, was strictly followed. Any exceptions or modifications are noted.

#### Overview of Test Protocol

This test is quantitative procedure to evaluate the degree of antibacterial activity of antibacterial finishes on textile materials. Test swatches of the material are inoculated with test organisms. Following incubation, the bacteria are eluted from the swatches by shaking in known amounts of neutralizing solution. The number of bacteria present in the liquid is determined and percent reduction is calculated based on the difference in bacterial levels before and after the incubation.

$$\% \text{ reduction} = \frac{(\text{Control cfu/mL @ T=0}) - (\text{Sample cfu/mL @ T=timepoint})}{(\text{Control cfu/mL @ T=0})} \times 100$$

Test samples were cut to strips measuring 4 x 2 in., placed in sterile empty specimen cups, and inoculated with a 1.0 mL suspension of test organism. Each sample was incubated for the specific contact time, then transferred to a 10 mL volume of neutralizing solution and vigorously shaken by vortex. The resulting suspension was inoculated to media supportive of bacterial growth and incubated at 36±2°C for 18-24 hours and the colonies of surviving bacteria were counted. At each designated timepoint, the process was repeated.

#### Specifics of the Test

Test Organisms: *Staphylococcus aureus* ATCC# 6538

*Klebsiella pneumoniae* ATCC# 4352

Contact Time: 0 and 24 hours

Number of Swatches

per Sample: 2

#### Sample Identification

Lab ID	Sample Identification
15625	Bandage

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**Results**

The antibacterial activity test results are presented in Tables 1 through 6.

**Conclusions**

The Noble Innovations, LLC. test sample [Bandage] showed antibacterial activity against *Staphylococcus aureus* with >99.97% reduction at 24 hours contact time. Activity was seen against *Klebsiella pneumoniae* with >99.99% reduction.

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**Table 1. *Staphylococcus aureus* inoculum per sample (1.0 milliliter)**

<i>Staphylococcus aureus</i> (ATCC# 6538) inoculum (0.1 mL added to 100 mL agar slurry)	<b>Average cfu/sample</b>
	1.18 x 10 <sup>5</sup>

**Table 2. *Staphylococcus aureus* vs. Bandage - Averaged Data**

Control		15625
<b>Time = 0</b>	<b>Time = 24 hours</b>	<b>Time = 24 hours</b>
Recovered cfu/ml	Recovered cfu/ml	Recovered cfu/ml
3.43 x 10 <sup>4</sup>	1.60 x 10 <sup>5</sup>	<10

**Table 3. Percent Reduction**

Sample Identification	% Reduction After 24 hours <i>Staphylococcus aureus</i> vs Control at T = 0
15625 Bandage	>99.97%

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**Table 4. *Klebsiella pneumoniae* inoculum per sample (1.0 milliliter)**

<i>Klebsiella pneumoniae</i> (ATCC# 4352) inoculum (0.1 mL added to 100 mL agar slurry)	<b>Average cfu/sample</b>
	1.69 x 10 <sup>5</sup>

**Table 5. *Klebsiella pneumoniae* vs. Bandage - Averaged Data**

<b>Control</b>		<b>15625</b>
<b>Time = 0</b>	<b>Time = 24 hours</b>	<b>Time = 24 hours</b>
Recovered cfu/ml	Recovered cfu/ml	Recovered cfu/ml
8.20 x 10 <sup>4</sup>	6.63 x 10 <sup>5</sup>	<10

**Table 6. Percent Reduction**

<b>Sample Identification</b>	<b>% Reduction After 24 hours <i>Klebsiella pneumoniae</i> vs Control at T = 0</b>
15625 Bandage	>99.99%