ASTM E 2180 – 18

Standard Test Method for Determining the Activity of Incorporated Antimicrobial Agent(s) in Polymeric or Hydrophobic Materials

FINAL REPORT: R2019-86-1

Prepared for:
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Accredited Testing Provided by:

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TESTING CERT: #2832.01

Testing Initiated: February 26, 2019
Testing Completed: March 1, 2019
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Approved By: Debbie Koester
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Objective:

To evaluate the surface of one sample for antimicrobial effectiveness against *Staphylococcus aureus* ATCC# 6538 as demonstrated by ASTM E 2180 test method.

Test Sample Identification:

1. PVC Coated Fiberglass Fabric

Test Procedure Summary:

The test organism was adjusted and diluted to obtain the starting inoculum concentration in an agar slurry. The control was tested in triplicate at Time = 0 and Time = 24 hours. The test samples were tested in triplicate at Time = 24 hours. Each replicate was placed in a sterile Petri dish, inoculated and then incubated. At the appropriate time, the replicate was placed in sterile container with neutralizing broth and shaken to facilitate the release of the agar slurry to the neutralizing broth. Serial dilutions of the neutralizing broth containing the inoculum were plated. All plates were incubated. After incubation, bacterial colonies were counted and recorded. The results are found in the Test Results section. The results pertain only to the samples tested.

Test Variables

Test Organism:	*Staphylococcus aureus ATCC 6538*
Sample Size:	3 cm x 3 cm
Pre-Cleaning:	None
Control:	Untreated plastic control supplied by MicroStar
Neutralizing Broth Used:	10 mL D/E Neutralizing Broth
Starting Inoculum Concentration:	*S. aureus ATCC#6538:* 3.4 x 10^6; Log value 6.53
Amount of Inoculum:	1.0 mL
Contact Time:	24 hours
Deviations from Standard Test Method:	None, testing performed per ASTM E2180 without deviation.

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Test Results:

Log reduction and percent reduction is determined by comparing the treated sample after the contract time to the untreated plastic control after the contact time using the geometric mean (average of log values of each replicate) and antilog as indicated by the standard test method. The average number of recovered bacteria and log reduction are reported as Log_{10} values.

Results against S. aureus ATCC#6538 after 24-hour Contact Time

Sample	Geometric Mean of Recovered Bacteria	Log Reduction	Percent Reduction
Untreated Plastic Control	6.39		
PVC Coated Fiberglass Fabric	4.71	1.67	98

Percent reduction is translated into log reduction by the following:

90% reduction = 1 log reduction; i.e. 1,000,000 (Log Value 6.00) reduced to 100,000 (Log Value 5.00)
99% reduction = 2 log reduction; i.e. 1,000,000 (Log Value 6.00) reduced to 10,000 (Log Value 4.00)
99.9% reduction = 3 log reduction; i.e. 1,000,000 (Log Value 6.00) reduced to 1,000 (Log Value 3.00)
99.99% reduction = 4 log reduction; i.e. 1,000,000 (Log Value 6.00) reduced to 100 (Log Value 2.00)
99.999% reduction = 5 log reduction; i.e. 1,000,000 (Log Value 6.00) reduced to 10 (Log Value 1.00)

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