Customer Report

Monday, November 21, 2016

CONTACT

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Project Title

Antimicrobial Testing

ID **1116-BVQ-01 -- 1** Entry Date 11/14/2016

Project Summary

The ***ASTM E2180 - Determining the Activity of Incorporated Antimicrobial Agents In Polymeric or Hydrophobic Materials.*** *The* test method is designed to detect the microbicidal activity present in a test sample. The method provides a rapid assessment of this activity by applying an inoculated surface in intimate contact with the test sample(s)

The test method is performed using a seed agar melt with the selected microorganisms and inoculating the test sample with the melted agar. Following incubation of the test sample; extractions are conducted and the microbial counts are determined by plating of the remaining organisms.

Data for the test are reported as both a Log concentration reduction and Percent Reduction of the test test samples organisms counts relative to the untreated control test samples.

Recommended Reading
Online Resource for Product Development, Testing, and Inquiry

Method Summary http://www.situbiosciences.com/antimicrobial-testing/astm-e2180-antimicrobial-test/

Guidance on anti-microbial preservation http://www.situbiosciences.com/microbial-control-testing/

Antimicrobial testing with textiles http://www.situbiosciences.com/textile-testing-antimicrobials/

Sample List

Method Name

Sample #	*Sample Name*	*Sample Notes*
ASTM E2180 - Standard Test Method for Determining the Activity of Incorporated Antimicrobial Agent(s) In Polymeric or Hydrophobic Materials		
1	30DN (1%)	
2	30DN (3%)	
3	30DN (5%)	
4	30DN (10%)	
5	Untreated Control	

Result Table

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Title	Antimicrobial Testing		
Project ID	1116-BVQ-01 -- 1	Entry Date 11/14/2016	Test Start Date 11/14/2016

Result Table *

Test Method ASTM E2180 - Standard Test Method for Determining the Activity of Incorporated Antimicrobial Agent(s) In Polymeric or Hydrophobic Materials

Sample # 1 30DN (1%)

	Unit Measured	Result
Inoculum *K. pneumoniae (4352)*		
Notes Section		
percent reduction >99.99%; no recovered bacteria		5.03
Inoculum *S. aureus (6538)*		
Notes Section		
percent reduction >99.99%; no recovered bacteria		5.12

Sample # 2 30DN (3%)

	Unit Measured	Result
Inoculum *K. pneumoniae (4352)*		
Notes Section		
percent reduction >99.99%; no recovered bacteria		5.03
Inoculum *S. aureus (6538)*		
Notes Section		
percent reduction >99.99%; no recovered bacteria		5.12

Sample # 3 30DN (5%)

	Unit Measured	Result
Inoculum *K. pneumoniae (4352)*		
Notes Section		
percent reduction >99.99%; no recovered bacteria		5.03
Inoculum *S. aureus (6538)*		
Notes Section		
percent reduction >99.99%; no recovered bacteria		5.12

Sample # 4 30DN (10%)

	Unit Measured	Result
Inoculum *K. pneumoniae (4352)*		
Notes Section		
percent reduction >99.99%; no recovered bacteria		5.03
Inoculum *S. aureus (6538)*		
Notes Section		
percent reduction >99.99%; no recovered bacteria		5.12

Result Table *

Sample # 5 **Untreated Control**

	Unit Measured	Result
Inoculum ***K. pneumoniae (4352)***		
Notes Section		
bacteria concentration = 9.2E5 CFU/ml	**0**	
bacteria concentration = 5.3E6 CFU/ml	**24**	
Inoculum ***S. aureus (6538)***		
Notes Section		
bacteria concentration = 8.2E5 CFU/ml	**0**	
bacteria concentration = 6.5E6 CFU/ml	**24**	

Result Table *

Test Method - Additional Information

ASTM E2180

A method of evaluating the antibacterial activity of antibacterial-treated products.
Antimicrobial activity is determined in the following manner:

***R* = (*U*t -U0) - (At-U0) = Ut - At**
where
R is the antibacterial activity;
***U*0** is the average of the common logarithm of the number of viable bacteria, in cells/cm2, recovered from the untreated test specimens immediately after inoculation;
***U*t** is the average of the common logarithm of the number of viable bacteria, in cells/cm2, recovered from the untreated test specimens after 24 h;
***A*t** is the average of the common logarithm of the number of viable bacteria, in cells/cm2, recovered from the treated test specimens after 24 h.

For purposes of common reference, the % reduction and Log reduction is reported in the notes section for each sample result.

Legend
CFU = colony forming unit (typically cited per unit volume or surface area). CFU is determined by bacteral plating of the test samples according to the specified method, followed by counting of the resultant colonies.
Untreated Control (UTC) - untreated control sample material used to demonstrate normal test performance, showing robust microorganism growth.
Interval - represents the point or time point from which the result value was determine; T0 indicates that the result is from the soonest possible time from inoculation to recovery of the inoculated sample (typically < 5min).
Result - the result is the measure of change or abundance. Result units indicate the actual measurements, frequently relative to a control value depending on the method or test requirements.

Notation of changes to the published test method:
• Several references are made to 'Plate count agar' for the test method plating following neutralization and recovery of the bacterial from the test samples. As standard practice, counts are performed on appropriate plate media such as Nutrient agar, tryptic soy agar, or as required by the specific organism tested.
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The published standard refers to incubation conditions of 35 C +/- 1C. Standard microbiological practice with other international methods is for incubations to occur at 37 C +/- 1C. The test conditions performed will be conducted at 37 C +/- 1C unless specified for other temperature conditions.

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Technology Director