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Quality Control
Biodegradation
Antimicrobials

Customer Report

Monday, December 14, 2015

CONTACT

Globe Industries Ltd.
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4000 Plovdiv BG160059125
Bulgaria

Plamen Dimitrov

Project Title

Antimicrobial Test

ID **1015-BPT-01 -- 2** Entry Date 12/2/2015

Project Summary

The AATCC TM 30pt3 is designed to test the performance of antifungal properties of a textile. The TM 30pt3 is conducted by inoculation of fungal spore onto the surface of the sample, followed by incubation of the sample at the appropriate temperature for the inoculated fungi. *Aspergillus niger* fungi is the standard fungi specified by the test method but other fungi can be assessed using this test method.

The method provides for two versions of the test. Both methods start by inoculation of the test sample and nutrient agar surface with the selected fungal spore. One version (7 day method) provides for additional nutrient into the fungal inoculum and agar to provide sufficient nutrient for the fungi to grow in the absence of any additional carbon source. The second version (14 day method) does not add additional carbon, requiring the fungi to metabolize the inoculated material, resulting is less robust fungal growth.

Appropriate selection of the 7d or 14d method versions depends on the needs of the samples, the intended use of the material and other parameters that can affect overall antifungal performance. For this test series, the 7 day method was used due to the non-cellulosic composition of the sample material.

Sample results are recorded according the growth scale provided in the method. Additionally, result details such as the presence of a zone of inhibition or contact inhibition (inhibition of growth where the sample is in direct contact with the agar surface) may be included.

Recommended Reading
Online Resource for Product Development, Testing, and Inquiry; ***The Wily Microbe***

Guidance on anti-microbial preservation
http://wily-microbe.situbiosciences.com/15-microbial-control/
http://wily-microbe.situbiosciences.com/34-microbial-control-testing/

Antimicrobial testing with textiles
http://wily-microbe.situbiosciences.com/1431-aatcc-30/
http://wily-microbe.situbiosciences.com/280-textile-testing-antimicrobials/

Sample List

Method Name

Sample #	*Sample Name*	*Sample Notes*
AATCC TM 30 pt 3 - Antifungal Activity, Assessment on Textile Materials: Mildew and Rot Resistance of Textile Materials		
1	T25/45 cinnamon	All - 7 day test
2	T25/45 zeolite	
3	Untreated Control	

Result Table

Contact	Globe Industries Ltd.	Plamen Dimitrov	
Title	Antimicrobial Test		
Project ID	1015-BPT-01 -- 2	Entry Date 12/2/2015	Test Start Date 12/2/2015

Result Table *

Test Method AATCC TM 30 pt 3 - Antifungal Activity, Assessment on Textile Materials: Mildew and Rot Resistance of Textile Materials

Sample # 1 **T25/45 cinnamon**

	Interval	Result
Inoculum ***A. niger (6275)***		
Notes Section		
>75% coverage by fungal mycelia and spore	**7** day	**3** 1 to 3 (3 is poor)
Image: **sample**		

Inoculum ***P. funiculosum (11797)***

Notes Section

<5% coverage by fungal mycelia and spore	**7** day	**2** 1 to 3 (3 is poor)
Image: **sample**		

Sample # 2 **T25/45 zeolite**

	Interval	Result
Inoculum ***A. niger (6275)***		
Notes Section		
>75% coverage by fungal mycelia and spore	**7** day	**3** 1 to 3 (3 is poor)
Image: **sample**		

Result Table *

Inoculum ***P. funiculosum (11797)***

Notes Section

no observed coverage, no contact inhibition

7 **day**

1 **1 to 3 (3 is poor)**

Image: **sample**

Sample # **3** **Untreated Control**

	Interval	Result
Inoculum ***A. niger (6275)***		

Notes Section

>90% coverage by fungal mycelia and spore

7 **day**

3 **1 to 3 (3 is poor)**

Image: **sample**

Inoculum ***P. funiculosum (11797)***

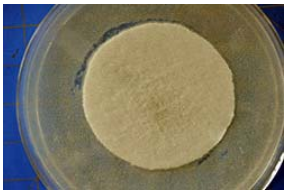
Notes Section

>90% coverage by fungal mycelia and spore

7 **day**

3 **1 to 3 (3 is poor)**

Image: **sample**



Result Table *

Test Method - Additional Information

AATCC TM 30 pt 3 - Antifungal Activity, Assessment on Textile Materials: Mildew and Rot Resistance of Textile Materials

Method Conventions

The AATCC Test Method 30 pt 3 is a qualitative antimicrobial test used to detect general fungistatic activity on textile materials. This antimicrobial testing method is useful for obtaining an estimate of activity by demonstration of a zone of growth inhibition around or in contact with an effectively treated article. The size of the zone of inhibition is not a predictive factor for any other antimicrobial attribute. Test results are reported as a number based on a rating scale of 1 to 3 and notes are provided if a zone of inhibition is present. If there is no zone present but there is contact inhibition of fungal growth with the treated article, the item will achieve a score of 1.

Terminology

activity, n..*of an antimicrobial agent*, a measure of effectiveness of the agent.
antimicrobial agent, n..*in textiles*, any chemical which kills (for example) bacteria or fungi (bactericide or fungicide) or interferes with microorganism growth.
zone of inhibition (ZOI) – the average measure of the distance from the edge of the article to the boundary where microorganism growth begins.
contact or no contact, inhibition (CI or NCI) - when no fungal growth is recorded on the surface of the sample, there may be growth of fungi at the interface between the test plate and the test sample. In these instances CI or NCI may be indicated to provide additional information on the performance of anti-fungal material at this interface. This determination is **not** part of the standard method but is provided as guidance for development or comparison of the test material.
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.

Fungal growth rating in this report.

1. No growth (if present, report the size of the growth-free zone in mm)
2. Microscopic growth (visible only under the microscope)
3. Macroscopic growth (visible to the eye) notes on an estimate of percent coverage may be provided.

d p satchell Ph.D.
Technology Director

Report Addendum

Monday, December 14, 2015

Project ID **1015-BPT-01 -- 2** Entry Date 12/2/2015 Test Start Date 12/2/2015

Image Table

Sample # 1 **T25/45 cinnamon**

Test Method AATCC TM 30 pt 3 - Antifungal Activity, Assessment on Textile Materials: Mildew and Rot Resistance of Textile Materials

Inoculum ***P. funiculosum***

Image: **sample** **<5% coverage by fungal mycelia and spore**

Test Method AATCC TM 30 pt 3 - Antifungal Activity, Assessment on Textile Materials: Mildew and Rot Resistance of Textile Materials

Inoculum ***A. niger***

Image: **sample** **>75% coverage by fungal mycelia and spore**

Image Table

Sample # 2 **T25/45 zeolite**

Test Method AATCC TM 30 pt 3 - Antifungal Activity, Assessment on Textile Materials: Mildew and Rot Resistance of Textile Materials

Inoculum ***A. niger***

Image: **sample** **>75% coverage by fungal mycelia and spore**

Test Method AATCC TM 30 pt 3 - Antifungal Activity, Assessment on Textile Materials: Mildew and Rot Resistance of Textile Materials

Inoculum ***P. funiculosum***

Image: **sample** **no observed coverage, no contact inhibition**

Image Table

Sample #	3	Untreated Control

Test Method	AATCC TM 30 pt 3 - Antifungal Activity, Assessment on Textile Materials: Mildew and Rot Resistance of Textile Materials

Inoculum ***A. niger***

Image: **sample** **>90% coverage by fungal mycelia and spore**

Inoculum ***P. funiculosum***

Image: **sample** **>90% coverage by fungal mycelia and spore**