

# ASTM G21-15

## *Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi*

*FINAL REPORT: R2017-115*

Prepared for:  
Everkem  
5180 Indiana Ave.  
Winston Salem, NC 27106

*Accredited Testing Provided by:*



130 Erick Street  
Crystal Lake, IL 60014  
815.526.0954  
TESTING CERT: #2832.01

*Testing Initiated: March 30, 2017*  
*Testing Completed: April 27, 2017*  
*Report Issued: May 3, 2017*

Performed By: Marcy Aaron  
Title: Staff Technologist

Approved By: Debbie Koester  
Title: Quality Manager



## **Objective:**

To evaluate the mold resistance properties of one sample as seen in the ASTM G21 fungal resistance test.

## **Test Sample Identification:**

1. ST40

## **Test Procedure Summary:**

Samples are placed onto the surface of ASTM G21 nutrient salts agar and sprayed with a mixed spore suspension of five fungal strains. The nutrient salts agar provides all of the trace nutritional elements needed by fungi to support growth. However, to achieve a heavy growth, the fungi must use the test material as its primary carbon source. Inoculated samples are incubated and then examined for fungal growth.

### **Test Variables**

<b>Test Organisms:</b>	<i>Aspergillus brasiliensis</i> <sup>1</sup>	ATCC 9642
	<i>Penicillium funiculosum</i> <sup>2</sup>	ATCC 11797
	<i>Chaetomium globosum</i>	ATCC 6205
	<i>Trichoderma virens</i> <sup>3</sup>	ATCC 9645
	<i>Aureobasidium pullulans</i>	ATCC 15233

<b>Sample Description:</b>	Semi-liquid prepared by MicroStar
<b>Sample Preparation:</b>	Sample was evenly applied on 2" x 2" polyester panels. The pieces were cured for 7 days prior to testing.
<b>Number of Replicates per Sample:</b>	Three
<b>Positive Growth Control:</b>	Sterile Filter Paper
<b>Media Used:</b>	Nutrient-Salts Agar prepared according to standard
<b>Environmental Conditions:</b>	28 - 30°C; ≥85% relative humidity
<b>Incubation Duration:</b>	28 days
<b>Deviations from Standard Test Method:</b>	None, testing performed per ASTM G21 without deviation.

<sup>1</sup> Historically known as *Aspergillus niger*

<sup>2</sup> Historically known as *Penicillium pinophilum*

<sup>3</sup> Historically known as *Gliocladium virens*



**Results:**

The results for the test pieces can be found in the data table below. The filter paper control pieces had copious fungal growth at Day 14. Temperature and relative humidity were maintained for the duration of the test. These results pertain only to the samples tested.

At week 4, samples rating a “0” or “1” were examined microscopically to confirm the ratings.

The rating scale for this test is as follows:

Rating	Observed Growth
0	No Growth
1	Trace of Growth (less than 10% coverage)
2	Light Growth (10-30% coverage)
3	Medium Growth (30-60% coverage)
4	Heavy Growth (60-100% coverage)

Sample Identification	Rep	Week 1	Week 2	Week 3	Week 4
ST40	1	0	0	0	0
	2	0	0	0	0
	3	0	0	0	0