

## Holdrite

### Microbiological Analysis Report

**Project No: 14118-C**

Date Received: 2/11/2019

Date of Analysis: 2/11/2019

**Subject:** Fungal Resistance Testing**Background & Objectives**

One sample was received for fungal resistance testing using the ASTM G21 test method.

**Protocol**

ASTM G21-15, Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi, test was strictly followed.

**Overview of Test Protocol**

This test method is designed for the qualitative determination of mildew (fungus) resistance of synthetic polymeric materials, particularly those types which have been given a fungus resistant treatment.

**Specifics of the Test**

Lab ID	Sample ID
14118-C	HydroFlame™ Wrap Strip

Test Inoculum

The fungal inoculum consisted of five species:

*Aspergillus brasiliensis* ATCC 9642

*Chaetomium globosum* ATCC 6205

*Penicillium funiculosum* ATCC 11797

*Trichoderma virens* ATCC 9645

*Aureobasidium pullulans* ATCC 15233

Test samples were placed in petri dishes on nutrient salts agar and inoculated with the test fungi. The samples were incubated at 28°C for 4 weeks and examined weekly for the growth of the test organisms.

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### Evaluation of Results

For the evaluation of the relative resistance of synthetic polymeric materials, the following rating system was used:

Fungal Growth Rating Legend	
None	0
Traces of growth (less than 10%)	1
Light growth (10-30%)	2
Medium growth (30-60%)	3
Heavy growth (60% to complete coverage)	4

### **Results**

Table 1 shows the Fungal Resistance Test results.

### **Conclusions**

The Holdrite sample HydroFlame™ Wrap Strip showed fungal resistance after four weeks in the ASTM G21 test. No growth was observed on the samples.

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**Table 1. Fungal Resistance of Polymeric Surfaces**

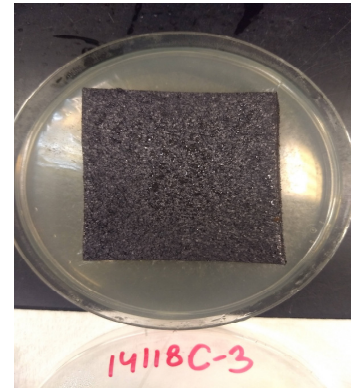
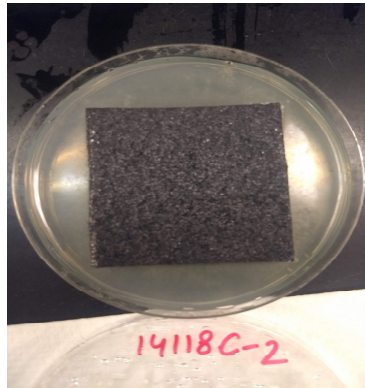
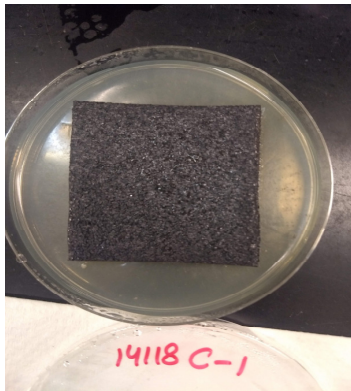
Lab Identification	Sample	Observed Fungal Growth on Treated Surface after 28 days Incubation at 28-30°C		
		1	2	3
14118-C	HydroFlame™ Wrap Strip	0	0	0
PC	Growth Control (Whatman filter paper)	4		

Fungal Growth Rating Legend	
None	0
Traces of growth (less than 10%)	1
Light growth (10-30%)	2
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Heavy growth (60% to complete coverage)	4

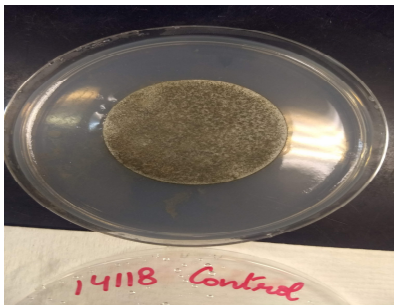
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**Photos after 4 weeks of testing:**



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Whatman Filter Paper