



FINAL REPORT

PROTOCOL: ASTM G21-96 Standard Practice for Determining Resistance of
Synthetic Polymeric Materials to Fungi

ORDER NO: 240804522

PREPARED FOR:
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Certificate of Analysis

Client: Plumberex Specialty Products, Inc.

Contact: Alex Lechuga

Project: ASTM G21- 96 Standard Practice for determining resistance of synthetic polymeric materials to fungi

Product: Polymer Coupons

EMSL Order NO: 240804522

Sample received: 12/04/2008

Start date: 12/04/2008

Completion Date: 12/31/2008

Experimental Summary:

Three polymer product coupons samples were received for testing. Samples were labeled as: Sample #1, Sample #3, and Sample # M-4. Testing was performed according to ASTM G21-96, which determines the resistance of synthetic polymeric materials to fungi. Samples were tested using petri dishes containing sterile nutrient salts agar (pH 6.5) and one 2"x2" piece of each coupon. Each sample was tested in triplicates. Each replicate was inoculated with a fungal suspension that consisted of equal volumes (45.0 mL) of 5 mold suspensions that were at a concentration of 1,000,000 spore \pm 200,000 per ml. The fungal species tested included *Gliocladium virens* ATCC 9645, *Aspergillus niger* ATCC 9642, *Penicillium pinophilum* ATCC 11797, *Chaetomium globosum* ATCC 6205 and *Aureobasidium pullulans* ATCC 15233. Three pieces of inoculated sterilized filter paper were included as positive controls. One set of

non inoculated coupon per sample were included as negative control as well as a set of media blanks as controls. Samples and controls were incubated at 27.0°C ± 2.0°C for 28 days at relative humidity of 85.0%.

Experimental Summary:

The following rating system was used to score each sample:

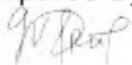
Observed Growth on Specimens Rating	Rating
None	0
Traces of Growth (less than 10%)	1
Light Growth (10-30%)	2*
Medium Growth (30-60%)	3
Heavy Growth (60% to complete coverage)	4

* According to ASTM G21-96, "continuous cobwebby growth extending over the entire specimen, even though not obscuring the specimen, should be rated as a two".

Table 1.1 Results from each of the three replicates prepared for each sample are reported.

Sample ID	Rating											
	Week 1 (12/11/08)			Week 2 (12/18/08)			Week 3 (12/24/08)			Week 4 (12/31/08)		
Sample # 1	0	0	0	0	0	0	1	1	1	1	1	1
Sample # 3	0	0	0	0	0	0	0	0	0	0	0	0
Sample # M-4	0	0	0	0	0	0	0	0	0	0	0	0
Sample #1 Control	0	0	0	0	0	0	0	0	0	0	0	0
Sample #3 Control	0	0	0	0	0	0	0	0	0	0	0	0
Sample # M-4 Control	0	0	0	0	0	0	0	0	0	0	0	0
Media Blank	0	0	0	0	0	0	0	0	0	0	0	0
Positive Control (filter paper)	3	3	3	4	4	4	4	4	4	4	4	4

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