

August 28, 2008

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RE: ASTM G-21  
Project #2008-214

**Samples:** Painted fiberglass discs

**ASTM G-21 Procedure:**

ASTM G-21 utilizes a mineral salts agar that 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 for its primary carbon source. The fungi used in this test were:

<i>Aspergillus niger</i>	ATCC 9642
<i>Penicillium funiculosum</i> *	ATCC 11797
<i>Chaetomium globosum</i>	ATCC 6205
<i>Gliocladium virens</i> *	ATCC 9645
<i>Aureobasidium pullulans</i>	ATCC 15233

\**P. funiculosum* has been reclassified as *P. pinophilium*. *Gliocladium virens* has been reclassified *Trichoderma virens*. Both organisms maintain their original ATCC numbers.

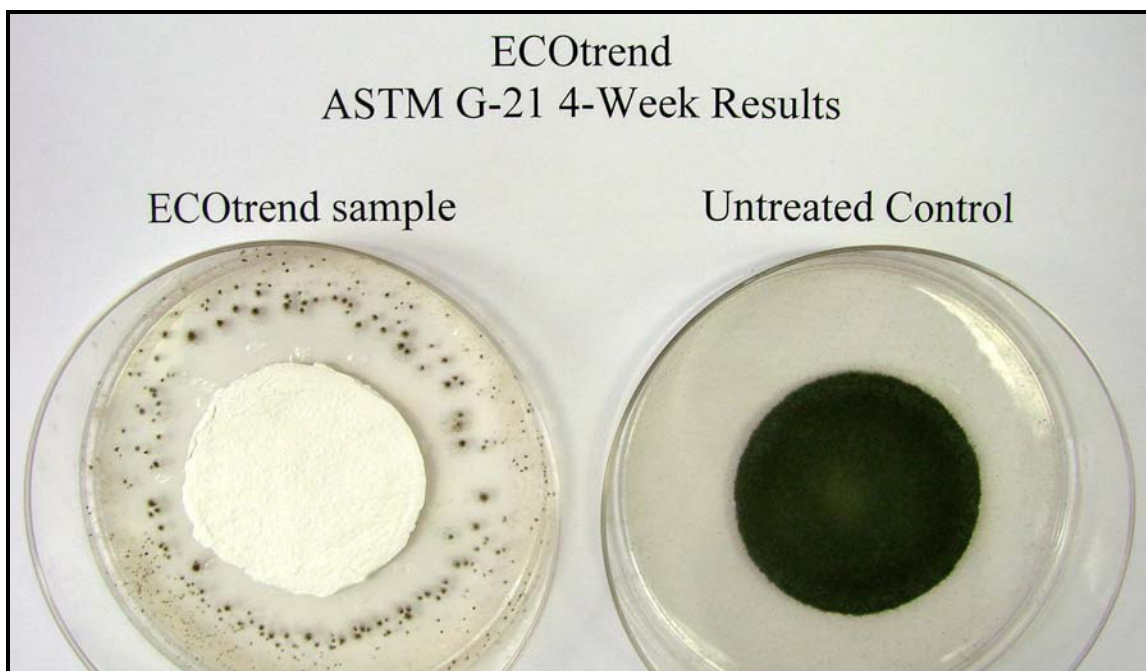
Organisms were grown on PDA for 7-14 days until mature. Spores were aseptically harvested, washed and counted. Each spore solution was adjusted to 1,000,000 spores/mL  $\pm$  200,000 spores and equal aliquots of the suspensions combined to make the final inoculation suspension. The sample replicates were placed on the surface of solidified G-21 mineral salts agar before inoculating the top surface with 200  $\mu$ L of the spore suspension. The Petri dishes were then incubated at 29-30<sup>o</sup> C for 4 weeks with readings taken after 7, 14, 21 and 28 days. Viability controls produced heavy fungal growth within 7 days, confirming the viability of the spore suspension. The grading scale for this test is shown below.

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

**ASTM G-21 Final Results:**

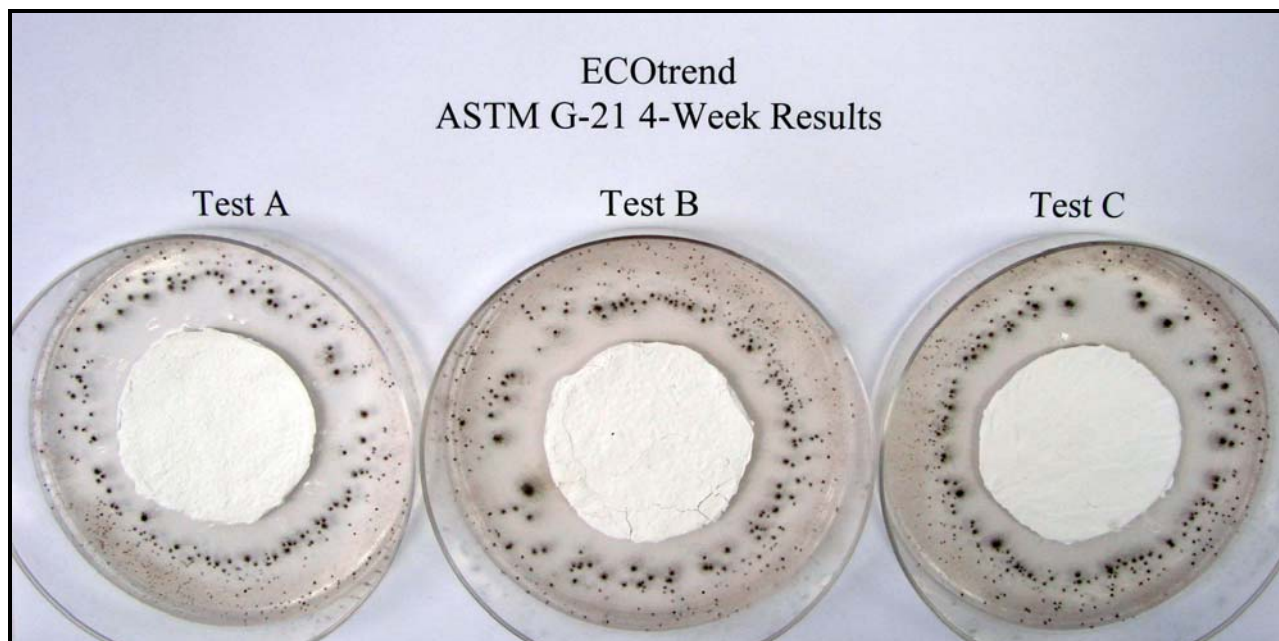
Samples		Week 1 (8/1)	Week 2 (8/8)	Week 3 (8/15)	Week 4 (8/22)
Samples Discs	1A	0	0	0	0
	1B	0	0	0	0
	1C	0	0	0	0
Untreated Control		4	4	4	4
Temperature °C		29.6	29.4	29.8	30.0
Humidity		89.1	85.1	88.7	91.0



This picture shows one of the “Painted” test pieces compared to an untreated control test piece.



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On the painted discs, not only was there no growth, but zones of inhibition can be seen with the samples. The concern over the cracking on the surface of these test pieces does not seem to be an issue as control was excellent.

If you have any questions, please do not hesitate to call.

**The MicroStar Lab, Ltd.**

*Judy LaZonby*  
Laboratory Director



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