



CONFIDENTIAL
MICROBIOLOGY LABORATORY REPORT

KSG Innovations, LLC
369 Washington Street
Dedham, MA 02026

Report No. U06-0345.1M - LWR #1703
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**WET STATE FUNGAL AND DRY FILM MILDEW
RESISTANCE EVALUATION OF ONE
INTERIOR/EXTERIOR LATEX COATING SAMPLE**

PREPARED FOR
Jim Stanley – KSG Innovations LLC

KEYWORDS

- **Interior/Exterior Latex Coating**
- **Wet State Fungal Resistance**
- **Dry Film Mildew Resistance**

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PURPOSE

To evaluate the wet state fungal and dry film mildew resistance properties of one interior/exterior latex coating sample.

PROJECT DESCRIPTION

One interior/exterior latex coating sample, identified as AF-200, was tested for wet state fungal and dry film mildew resistance in accordance with Troy Antifungal Stability Test 1.3.Fung.B and Troy Mildew Resistance Test 1.6.B, a modified version of ASTM D5590-00.

RESULTS

Wet State Fungal Resistance

Sample AF-200 was free of microbial contamination as received and upon inoculation, exhibited wet state fungal resistance.

Dry Film Mildew Resistance

Films of sample AF-200 exhibited resistance to *Aureobasidium pullulans*, *Stachybotrys chartarum*, and the combination of *Aspergillus niger* and *Penicillium funiculosum* when tested unleached and after 24 hours of leaching.

For more detailed test results, please consult the attached tables and photographs.

TEST METHODOLOGIES

FUNGUS

Antifungal Stability Test: (Troy Standard Test 1.3.Fung.B) The sample was streaked on Trypticase Glucose Extract Agar and Malt Agar to determine the initial microbial condition. A 50-gram aliquot of the sample was inoculated separately with 0.5 ml of a mixed fungal spore suspension and 0.5 ml of a spore suspension of *Stachybotrys chartarum* and streaked on Malt Agar after 7 days. The petri dishes were incubated for a period of one week at 28 degrees C. The passing samples were reinoculated and retested in the same manner.

Test Organisms:

Aspergillus niger (ATCC # 9642)
Penicillium sp. (ATCC #12667)
Stachybotrys chartarum (ATCC #9182)

The fungi used for this test are the most important microbes found in the deterioration of industrial systems while in the package container, during process in the plant or in the hands of your customer.

MILDEW

Mildew Resistance Test: (Troy Standard Test 1.6.B) The sample was tested in accordance with a modified version of ASTM D5590-00. One coat of the sample was applied to both sides of Whatman #2 filter paper in duplicate and air dried for 24 hours. One part of the coating specimen from each sample was exposed for 24 hours in room temperature tap water and air dried for 24 hours. The other part of the coating specimen remained unleached. The coating specimens were then cut into 1-inch squares two of which were placed in petri dishes containing solidified Malt Agar and seeded with a combination of *Aspergillus niger* and *Penicillium funiculosum* fungal organisms, two of which were placed in petri dishes containing solidified Malt Agar and seeded with *Aureobasidium pullulans*, and two of which were placed in petri dishes containing solidified Malt Agar and seeded with *Stachybotrys chartarum*. All of the squares were then top inoculated with 0.1 ml of the test fungi. The petri dishes were incubated for a period of 3 weeks at 28 degrees C.

Test Organisms:

Aspergillus niger (ATCC #6275)
Aureobasidium pullulans (ATCC #9348)
Penicillium funiculosum (ATCC #11797)
Stachybotrys chartarum (ATCC #9182)

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TROY CORPORATION



**Lawrence Magier, Manager
Technical Service**



**Aysel Calkap, Supervisor
Microbiology Technical Services**

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TABLE I
ANTIFUNGAL STABILITY TEST

SAMPLE IDENTIFICATION	INITIAL MICROBIAL CONDITION	FIRST INOCULATION STREAKED AFTER	REINOCULATION STREAKED AFTER
		7 Day	7 Day
AF-200	0	0	0

LEGEND

0	= No Growth, Sterile
1	= Trace Growth
2	= Light Growth
3	= Moderate Growth
4	= Heavy Growth

TEST ORGANISMS:

Aspergillus niger

Penicillium sp.

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TABLE II
ANTIFUNGAL STABILITY TEST

SAMPLE IDENTIFICATION	INITIAL MICROBIAL CONDITION	FIRST INOCULATION STREAKED AFTER	REINOCULATION STREAKED AFTER
		7 Day	7 Day
AF-200	0	0	0

LEGEND

- 0** = No Growth, Sterile
- 1** = Trace Growth
- 2** = Light Growth
- 3** = Moderate Growth
- 4** = Heavy Growth

TEST ORGANISM:

Stachybotrys chartarum

TABLE III
MILDEW RESISTANCE TEST

SAMPLE IDENTIFICATION	MILDEW RATING					
	Aureobasidium pullulans		A. niger + P. funiculosum		Stachybotrys chartarum	
	Unl	24h Leach	Unl	24h Leach	Unl	24h Leach
AF-200	Z(18)	Z(15)	Z(11)	Z(2)	Z(10)	Z(5)

LEGEND

- 0** = No Growth, Zone of Inhibition May be Present, Z(n) - Zone of Inhibition in mm
- 1** = Trace Growth (<10% coverage)
- 2** = Light Growth (10-30% coverage)
- 3** = Moderate Growth (30-60% coverage)
- 4** = Heavy Growth (60% to complete coverage)

TEST ORGANISMS:

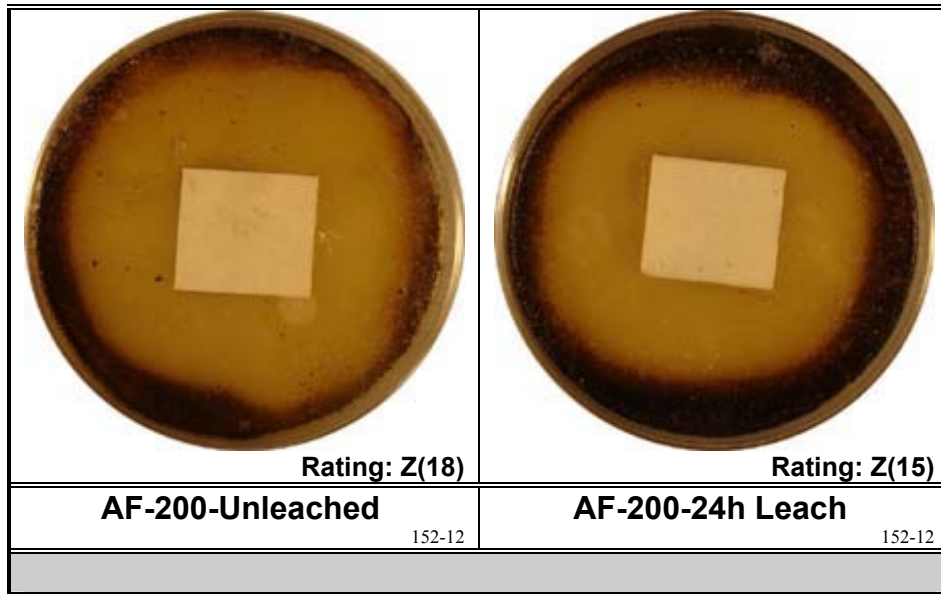
Aspergillus niger
Aureobasidium pullulans
Penicillium funiculosum
Stachybotrys chartarum

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MILDEW RESISTANCE TEST

Test Organism:

- *Aureobasidium pullulans*

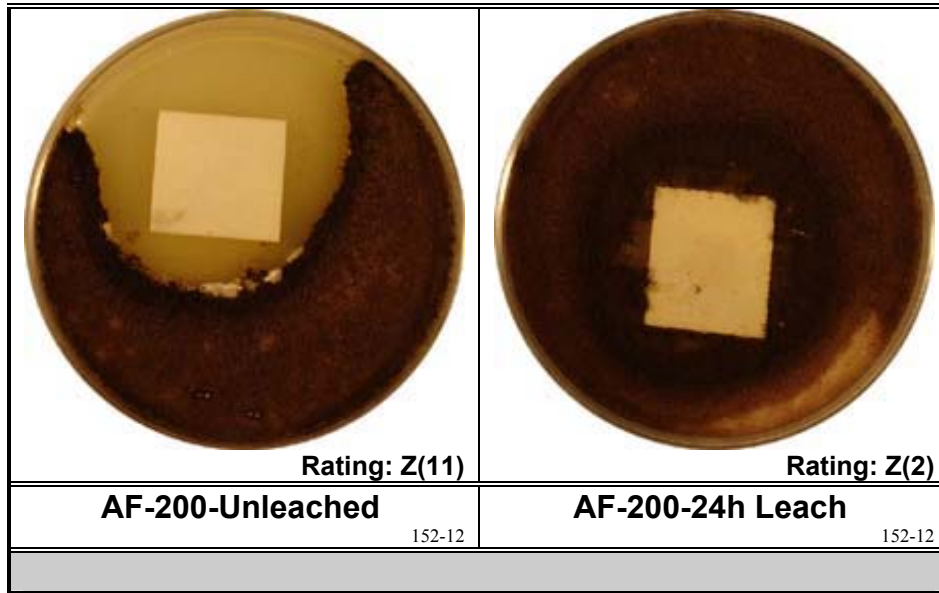


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MILDEW RESISTANCE TEST

Test Organisms:

- *Aspergillus niger*
- *Penicillium funiculosum*



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MILDEW RESISTANCE TEST

Test Organism:

- *Stachybotrys chartarum*

