



CLIENT: SGS Testing Korea, CO, LTD
Attn: June Lee
18-34 Sanbon-Dong
Gunpo-Si Gyeong
Korea, Republic Of 435-837

Report No.: 001:039622/4

Date: 5/07/07

The following samples were submitted by the client as:

1). Alkenz Sunshadow

SAMPLE DESCRIPTION: White Fabric

DATE OF RECEIPT: 4/03/07

TESTING PERIOD: 4/03/07 – 4/30/07


AUTHORIZATION: Client's Purchase Order (F690501)

TESTS REQUESTED: Fungal Resistance Testing, ASTM G-21
Bacterial Resistance Testing, ASTM G-22

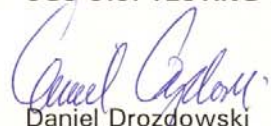
TEST RESULTS: Page 3-4

SUMMARY: The submitted sample was found to be fungus and bacteria resistant when tested as specified.

PREPARED BY:


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Supervisor, Microbiology

**SIGNED FOR AND ON BEHALF OF
SGS U.S. TESTING COMPANY INC.**


Daniel Drozdowski
Manager, Microbiology

/cp

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PROCEDURE:

A. ASTM G-21

The testing was conducted in accordance with the procedures outlined in ASTM G-21-96, "Determining Resistance of Synthetic Polymeric Materials to Fungi".

The samples were placed on a mineral salts medium and sprayed with a combined Inoculum of the following spore suspensions.

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

After inoculation with the above organisms, samples were evaluated by rating the extent of developing visible growth (including microscopic growth). Samples and controls were placed in a "tropical test chamber" and incubated at a temperature of 30 ± 1 °C and relative humidity greater than 85%. The total incubation period was 28 days.

B. ASTM G-22

The testing was conducted in accordance with the procedures outlined in ASTM G-22-96, "Standard Practice For Determining Resistance of Plastics to Bacteria".

The samples were placed on a mineral salts medium and inoculated with the test organism *Pseudomonas aeruginosa*, ATCC #13388. The test sample and controls were then incubated 21 days at 35° - 37°C.

Samples were evaluated by rating the development and extent of microbial growth on the sample or in the surrounding medium.



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TEST RESULTS:

A. ASTM G-21

Evaluation of Fungal Growth

<u>Sample</u>	<u>Replicates</u>	<u>Day 0</u>	<u>Day 7</u>	<u>Day 14</u>	<u>Day 21</u>	<u>Day 28</u>
Alkenz	1	0	0	0	0	0
Sunshadow	2	0	0	0	0	0
	3	0	0	0	0	0
Test Controls						
Positive (paper/cork)		0	4/3	4/3	4/3	4/3
Positive (viability)		0	4	4	4	4
Negative (glass slide)		0	0	0	0	0

ASTM Rating

Observed Growth on Specimens

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

Summary:

The submitted sample did not support fungal growth.

The positive and viability controls supported heavy growth, while the negative did not support growth, thus validating the test procedure.



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TEST RESULTS (cont'd):

B. ASTM G-22

Evaluation of Bacterial Growth

<u>Sample</u>	<u>Replicates</u>	<u>Day 0</u>	<u>Day 7</u>	<u>Day 14</u>	<u>Day 21</u>
Alkenz	1	0	0	0	0
Sunshadow	2	0	0	0	0
	3	0	0	0	0
<u>Test Controls</u>					
Positive (vinyl)		0	3	4	4
Positive (viability)		0	4	4	4
Negative (glass slide)		0	0	0	0

All control ratings confirmed as *Pseudomonas aeruginosa*, the test organism.

Summary:

The submitted sample did not support bacterial growth of the test organism.

The positive control supported heavy growth, while the negative did not, thus validating the test results.

End of Report