



LABORATORY REPORT

CLIENT: Armacell European Compounding
Attn: Rainer Eckert
Robert-Bosch-Strabe 10
48153 Munster, Germany

PURCHASE ORDER NO: 4500058768

SAMPLE (S) RECEIVED: 3/29/12

LAB REFERENCE NO: DSM

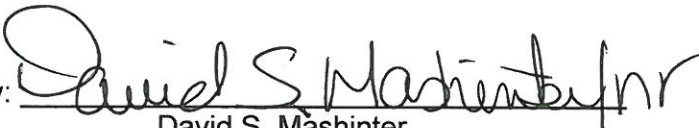
INVOICE NO: 2385

LABORATORY SERVICE PERFORMED: ASTM G21 Test Method on One (1) Sample.

RESULTS

See attachment.

BIOSAN LABORATORIES, INC.

By: 
David S. Mashinter
Microbiologist

Dated: May 7, 2012

Attachment
CC/nr

5/1/2012

Armacell

Microbiological Analysis Report

Project No: 4431
Date Received: 3/29/2012
Date of Analysis: 4/2/2012

Subject: Fungal Resistance Testing

Background & Objectives

One foam sample was received on March 29, 2012 for fungal resistance testing using the ASTM G21 test method.

Protocol

ASTM G21-96, 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

Sample Identification

4431 Armaflex Ultima

Test Inoculum

The fungal inoculum consisted of five species:

Aspergillus niger ATCC 9642

Chaetomium globosum ATCC 6205

Penicillium funiculosum ATCC 11797

Trichoderma virens ATCC 9645

Aureobasidium pullulans ATCC 15233

Test samples, tested in triplicate, were placed in petri dishes on mineral 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

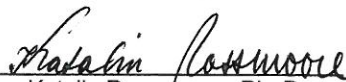
Table 1 shows the Fungal Resistance Test results.

Conclusions

The Armacell sample submitted on March 29, 2012 showed complete fungal resistance in the ASTM G21 Test Method. No fungal growth was observed on the triplicate samples.



David S. Mashinter
QA Manager



Katalin Rossmoore, Ph. D
Chief Science Officer

5/1/2012

Armacell
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Table 1. Fungal Resistance of Polymeric Surfaces

Lab Identification	Sample	¹ Observed Fungal Growth on Treated Surface after 28 days incubation at 28-30°C		
		1	2	3
4431	Armaflex Ultima	0	0	0
	Armaflex Ultima (Uninoculated)	0	0	0
PC	Growth Control (Whatman filter paper)	4	4	4

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