Purafil, Inc.
2654 Weaver Way
Doraville, GA 30340, USA

PuraWard Testing Results

Purafil has tested its proprietary anti-viral / anti-bacterial filters with independent laboratories and collected the results in the following pages.

Testing for E. Coli was completed by Sciessent in Massachusetts and a 99.96% kill rate was demonstrated.

Testing for 2013 Influenza A (H7N9) was completed by MicroBac in Virginia and a 3.76 log10 reduction was demonstrated. This is equivalent to 99.98% inactivation rate. (Note that because viruses are not alive they cannot be killed, but can be inactivated.)

Enclosed are the detailed results which demonstrate that Purafil PuraWard materials are suitable for protecting people and processes from the damaging effects of bacteria and viruses.

Tim Bryarly

Product Manager

TO: Jacki Traynor

FROM: Linda Patenaude

DATE: October 20, 2015

RE: Request for Sciessent LLC Laboratory Test Method

Jacki,

I received your email today requesting an official copy of the Sciessent test method that was used to perform assay number TXT1-15-576 for your customer.

The document attached, titled “LAB-TM-203: AATCC100 Test Method” is the internal document used by Sciessent to perform AATCC100 at this facility. This document is confidential.

Also, attached is a copy of the test report TXT1-15-576 for your customer.

If you or your customer have any questions pertaining to this test method, do not hesitate to contact me.

Respectfully,

Linda Patenaude

Certificate of Performance

Purafil

Assay Number:	TXT1-15-576	Indicate Lab Trial, Mill Trial or N/A	N/A
Test Articles:	Textiles	Test Organism:	E. coli
Sample Size:	~2" x 2"	ATCC#:	25922
Start Date:	8/6/2015	End Date:	8/7/2015
Test Method	AATCC100 (LAB-TM-203)	Rev#	0

Sample Identification	Organism Count (CFU/ml) Zero Contact Time	1 Hour Contact Time	Percent Reduction**
Assay (+)	3.6×10^5	2.8×10^5	22.22%
Assay (-)	<100*	<100*	N/A
2015-07-13-PBF-Xply Sciessent ID# 150714-1B, Rep 1		<100*	99.96%
2015-07-13-PBF-Xply Sciessent ID# 150714-1B, Rep 2		<100*	99.96%
2015-07-13-PBF-Xply Sciessent ID# 150714-1B, Rep 3		<100*	99.96%

Testing was performed in accordance with standard operating procedures of Sciessent LLC.

Notes: * *≤100 = Limits of detection of assay.*
** *Percent reduction calculated using: Assay + T1 hour.*

Prepared By: Mary Doan *Date:* 8/11/15

Reviewed By: Linda Pateraude *Date:* 8/11/15

The Agion® Antimicrobial is presently registered by the United States Environmental Protection Agency as a preservative and bacteriostatic agent for use in treated articles under 40 CFR 152.25a. This technical data is provided to substantiate the efficacy of the antimicrobial compound. However, the data are not intended to support or endorse public health claims for treated articles.

INDEPENDENT LABORATORY CERTIFICATE OF ANALYSIS

ASSESSMENT OF VIRUCIDAL EFFECTIVENESS OF TREATED FABRIC MATERIAL VIA DIRECT CONTACT– Misting study 2013 Influenza A Virus (H7N9)

Reported to: Purafil
2654 Weaver Way
Doraville, GA 30340, US

Date Tested: 08/20/2015
Project No.: 791-109

Product Tested:
2015-07013-PBF-XPLY-Active
2015-07013-PBF-XPLY-No Active

Test Performed:
The test was designed to simulate consumer use and was based on AATCC Test Method 100-2004 with customization for virus testing

Conclusions:
Purafil Sample 2015.07.13-PBF-XPLY-Active is the subject of this study and represents an 18 opsy nonwoven substrate, comprised of Naturion antimicrobial fiber.

The antiviral testing in this study is designed to evaluate the ability of the *Purafil Sample 2015.07.13-PBF-XPLY-Active* to inactivate the 2013 Influenza A (H7N9) virus after 5 minutes of direct contact with the virus. By comparing the viral reductions of the Purafil Active sample to the (1) Liquid Control (no fabric) and the (2) Fabric Control (no-active) the efficacy of the "active" material can be quantified. The results show a 2.70 to 3.76 $\log_{10}$ reduction of the virus after 5 minutes of virus exposure. The 2.70 $\log_{10}$ reduction is the result when the calculation is performed comparing the virus reduction of the active sample to a standard PET control fabric containing "no active". The 3.76 $\log_{10}$ reduction is the result when comparing the active sample to a "liquid" control (no active and no fabric).

Laboratory Qualifications:
Microbac Laboratories, Inc. operates one of the world's most diversified commercial testing and analytical laboratory groups in the environmental, food, pharmaceutical and other testing areas. The MicroBioTest division of Microbac has over 26 years of experience serving microbial and viral testing community and is fully compliant to Good Laboratory Practices (GLP) and ISO 17025.

Reported by: **MicroBioTest**

S. Steve Zhou, Ph.D. Date
Director, Virology and Molecular Biology
MicroBioTest, A Division of Microbac Laboratories, Inc.

AMENDED FINAL REPORT

(See Study Dates and Facilities Section for Details)

ASSESSMENT OF VIRUCIDAL EFFECTIVENESS OF TREATED FABRIC MATERIAL VIA DIRECT CONTACT–

Misting study

2013 Influenza A Virus (H7N9)

Test Article
2015-07-13-PBF-XPLY-Active
2015-07-13-PBF-XPLY-No Active

Author
Salimatu Lukula, M.S.

Performing Laboratory
MicroBioTest
Division of Microbac Laboratories, Inc.
105 Carpenter Drive
Sterling, Virginia 20164

Laboratory Project Identification Number
791-109

Sponsor
Purafil
2654 Weaver Way
Doraville, GA 30340, US

MicroBioTest Protocol

ASSESSMENT OF VIRUCIDAL EFFECTIVENESS OF TREATED FABRIC MATERIAL VIA DIRECT CONTACT –

Misting study

2013 Influenza A Virus (H7N9)

Testing Facility
MicroBioTest
Division of Microbac Laboratories, Inc.
105 Carpenter Drive
Sterling, VA 20164

Prepared for
Foss Manufacturing Company, LLC
11 Merrill Industrial Drive
Hampton, NH 03843-5000

MicroBioTest Protocol: 791.1.08.04.15
MicroBioTest Project: 791-109

8/6/2015