

Quality Assurance & Compliance Testing Utilizing Textile & Related Technologies

19 West 36th Street, 10th Floor New York, NY 10018 Tel: 212 947 8391 Fax: 212 947 8719

www.vartest.com

ISO/ICC 17025 Certified Third Party Test Report

DATE:

April 3, 2020

FILE: PRECIS.A033120D

CLIENT:

ATTN: Gary Narayan

SAMPLE IDENTIFIED BY CLIENT AS:

Fabric Submitted
Name: Protect 4
Color White

BLUE LABEL SERVICE

TEST PROCEDURES:

RESISTANCE OF MATERIALS IN PROTECTIVE CLOTHING TO PENETRATION BY SYNTHETIC BLOOD (ASTM F 1670-B):

Sample	Result		
D	Pass		

Uniform results done in triplicate.



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Fabric Submitted Name: Protect 4 Color White

VIRAL PENETRATION, RESISTANCE OF MATERIALS USED IN PROTECTIVE CLOTHING TO PENETRATION BY BLOODBORNE PATHOGENS (ASTM F1671), PROCEDURE B, USING NYLON MESH RETAINING SCREEN:

Viral penetration was tested for using a $\phi X174$ bacteriophage suspension for 60 minutes. At the end of the test, the observed side of the test sample was rinsed with sterile medium and assayed for the presence of $\phi X174$ bacteriophage.

Executive Summary:

Compatibility ratio for D tested in triplicate was 0.9 (i.e., exposure of virus to the test sample for 1 h did not affect the virus titer).

Settle plates (two from hood and two from bench) showed no plaques, indicating the absence of aerosol bacteriophage spread. Testing of test cells before exposure to virus was uniformly negative for virus showing the absence of test cell contamination. Sample D is therefore a PASS.

Test Article (each in triplicate)	Pre-Challenge (PFU ^s /ml)	Post-Challenge (PFU/ml)	Test Cell wash (5ml) Bacteriophage Penetration (PFU/ml)	Visual Penetration	Test Result
D	4.0 x 10 ⁸	4.2 x 10 ⁸	0	No	Pass
Impermeable control	4.0 x 10 ⁸	4.2 x 10 ⁸	0	No	Pass
Permeable control	4.0 x 10 ⁸	4.0 x 10 ⁸	>200	Yes	Fail (expected)

^a PFU: plaque-forming units



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APPENDIX:

Level	Test	Liquid Challenge	Result	Expected Barrier Effectiveness	
1	AATCC 42 Impact Penetration	Water	= 4.5 g	Minimal water resistance (some resistance to water spray)	
2	AATCC 42 Impact Penetration	Water	= 1.0 g	Low water resistance (resistant to water spray and some resistance to	
	AATCC 127 Hydrostatic Pressure	Water	= 20 cm	water penetration under constant contact with increasing pressure)	
3	AATCC 42 Impact Penetration	Water	= 1.0 g	Moderate water resistance (resistant to water spray and some resistance to water penetration under constant contact with increasing pressure)	
	AATCC 127 Hydrostatic Pressure	Water	= 50 cm		
4	ASTM F1670 Synthetic Blood Penetration	Surrogate Blood	No Penetration at 2 psi (13.8 kpa)	Blood and viral penetration resistance (2 psi)	
	ASTM F1671 Viral Penetration	Bacteriophage Virus			

Signed For The Company By

Laboratory Manager

JG/04

States & Europeans

States

Stacy Satisbuy
Quality Assurance Manager

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All of the tests in this report were carried out in accordance with the procedures and provisions detailed in the Vartest Quality Assurance Manual. Vartest maintains a quality system in compliance with ISO/IEC 17025:2005. The findings and results in this test report apply only to the specific sample(s) submitted to by the client for testing.