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Submitted by: CoreTex Products  
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Bakersfield, CA 93308

Date: September 13, 2017

Attn: Jim Boone, Jr.

Report No.: 50398

## REPORT

### Lab Sample No.:

50398 Bug X Free Natural Insect Repellant was contacted with rubber linemans gloves (Type 1, Class 2, ANSI/ASTM D120) to determine if any significant changes occur in the tested properties of the gloves.

## PROCEDURE

### Tensile Properties

The outer-surface of the glove was rubbed with a liberal amount of Bug X Free Natural Insect Repellant, wiped off, allowed to stand thusly for 4 hours and then washed with mild soap and warm water. The above procedure was repeated once a day for 3 days. On the fourth day, samples were cut from the cuff areas of the gloves and tested as reported.

### Area Swell

Test samples were measured after 24 hour soaks at 75°F in the Bug X Free Natural Insect Repellant.

### AC Electrical Proof Tests

Glove samples exposed to the Bug X Free Natural Insect Repellant as per tensile property samples but were not cut up. Test was performed at 20 KV @ 3 minutes; maximum proof test current was recorded during last 20 seconds of the test. Pass/Fail criteria is based on a maximum proof test current of 18 mA (@ 60Hz) as dictated by Class 2 and 16" glove length. Clearance from cuff to water line was set at 3 inches. Test was repeated after 16 hour soak in distilled water.

**RESULTS**

**Tensile Properties (ASTM D412, Avg. of 5)**

	<u>Control</u>	<u>Bug X Free Natural Insect Repellant</u>
<b>Tensile Strength, psi</b>		
Initial	3,863	-
After 3 day Exposure	-	3,568
% Change from Initial	-	-7.6%
Initial Aged 7 days @ 158°F	3,663	-
After 3 day Exposure and 7 day aging @ 158°F	-	3,552
% Change from Initial, aged	-5.2%	-3.0%
<b>Ultimate Elongation, %</b>		
Initial	660	-
After 3 day Exposure	-	659
% Change from Initial	-	-0.2%
Initial Aged 7 days @ 158°F	674	-
After 3 day Exposure and 7 day aging @ 158°F	-	641
% Change from Initial, aged	+2.1%	-8.9%
<b>200% Elongation, psi</b>		
Initial	94	-
After 3 day Exposure	-	92
% Change from Initial	-	-2.1%
Initial Aged 7 days @ 158°F	96	-
After 3 day Exposure and 7 day aging @ 158°F	-	93
% Change from Initial, aged	+2.1	-1.1%

**Area Swell, % (ASTM D471, Avg. of 3)**

24 hour soak	-	+12.2%
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**AC Electrical Proof Test (ASTM D120)**

A)	Initial – Glove #	<u>1</u>	<u>2</u>	<u>3</u>
	Leakage at 20 KV, mA	11.8	11.8	11.7
	Pass/Fail	Pass	Pass	Pass
	Breakdown Voltage, KV	39.1 (FO)	38.5 (FO)	38.9 (FO)
	Bug X Free Natural Insect Repellant 3 day Exposure – Glove #	<u>1</u>	<u>2</u>	<u>3</u>
	Leakage at 20 KV, mA	12.8	12.4	12.8
	Pass/Fail	Pass	Pass	Pass
	Breakdown Voltage, KV	37.0 (FO)	36.8 (FO)	36.4 (FO)
B)	16 hour Distilled Water Soak Test			
	Initial – Glove #	<u>1</u>	<u>2</u>	<u>3</u>
	Leakage @ 20 KV, mA	13.6	13.8	13.4
	Pass/Fail	Pass	Pass	Pass
	Breakdown Voltage, KV	36.5 (FO)	36.0 (FO)	36.2 (FO)
	Bug X Free Natural Insect Repellant (3 day Exposure followed by 16 hour Soak Test)			
	Glove #	<u>1</u>	<u>2</u>	<u>3</u>
	Leakage @ 20 KV, mA	14.6	14.8	15.1
	Pass/Fail	Pass	Pass	Pass
	Breakdown Voltage, KV	31.9 (FO)	32.6(FO)	33.2 (FO)

Note: (FO) Flashover indicates that the arc occurred over, but not through the glove.

**DISCUSSION**

The gloves are slightly affected as to the physical properties, but show no adverse effect as to the AC electrical proof tests. The swell value shows that there is some material interaction between the sample and the glove material, but the electrical resistance integrity is not compromised.

DALLAS LABORATORIES, INC.

  
 Kevan W. Jones, Vice President

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