

## ELTEK International Labs

### REPORT

Industrial Sun Screen (SPF 30+) was contacted with rubber lineman's 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 sunscreen, 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 sunscreen.

#### AC Electrical Proof Tests

Glove samples exposed to the sunscreen 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 the last 20 seconds of the test. Pass/Fail criteria is based on a maximum proof test current of 18 mA as dictated by the 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)

	Control	Industrial Sun Screen SPF 30+
<u>Tensile Strength, psi</u>		
Initial	<u>1275.2</u>	
After 3 day sunscreen exposure		<u>1127.5</u>
% Change from initial		<u>-11.5%</u>
Initial aged 7 days @ 158°F	<u>1200.1</u>	
After 3 day sunscreen exposure and 7 day aging @ 158°F		<u>954.9</u>
% Change from initial	<u>-5.8%</u>	<u>-25.1%</u>
<u>Ultimate Elongation %</u>		
Initial	<u>910</u>	
After 3 day exposure		<u>832</u>
% Change from initial		<u>-8.6%</u>
Initial aged 7 days @ 158°F	<u>811</u>	
After 3 day sunscreen exposure and 7 day aging @ 158°F		<u>810</u>
% Change from initial	<u>-10.9%</u>	<u>-10.9%</u>

	Control	Industrial Sun Screen SPF 30+
<b><u>500% Modulus, psi</u></b>		
Initial	<u>384</u>	
After 3 day sunscreen exposure		<u>383</u>
% Change from initial		<u>-0.3%</u>
Initial aged 7 days @ 158°F	<u>446</u>	
After 3 day sunscreen exposure and Aged 7 days @ 158°F		<u>359</u>
% Change from initial	<u>+16.1%</u>	<u>-6.4%</u>
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<b><u>Area Swell, % (ASTM D471, Avg. of 3)</u></b>		
24 hour soak		<u>0 %</u>

**AC Electrical Proof Test (ASTM D120)**

	#1	#2
Initial – Glove		
Leakage at 20 KV, mA	<u>13.9</u>	<u>14.2</u>
Pass/Fail	<u>Pass</u>	<u>Pass</u>
(ASTM D-149) Breakdown voltage, KV	<u>32.8 (FO)</u>	<u>34.3 (FO)</u>
3 day sunscreen exposure –	#1	#2
Leakage at 20 KV, mA	<u>13.2</u>	<u>14.6</u>
Pass/Fail	<u>Pass</u>	<u>Pass</u>
(ASTM D-149) Breakdown voltage, KV	<u>37.6 (FO)</u>	<u>37.5 (FO)</u>
16 hour distilled water soak test	#1	#2
Leakage at 20 KV, mA	<u>14.5</u>	<u>15.5</u>
Pass/Fail	<u>Pass</u>	<u>Pass</u>
(ASTM D-149) Breakdown voltage, KV	<u>32.2 (FO)</u>	<u>32.3 (FO)</u>
3 day sunscreen exposure – Followed by 16 hour distilled water soak test	#1	#2
Leakage at 20 KV, mA	<u>14.0</u>	<u>15.4</u>
Pass/Fail	<u>Pass</u>	<u>Pass</u>
(ASTM D-149) Breakdown voltage, KV	<u>37.2 (FO)</u>	<u>36.6 (FO)</u>

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

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