

Report # K-419995-01-R00

Samples Received:  
Aug-25-17

Samples Tested:  
Aug-28-17

## Test Report

Kinectrics Inc., 800 Kipling Avenue, Unit 2  
Toronto, Ontario, Canada  
Tel: 416-207-6000, www.kinectrics.com



### Tested for

Oberon  
22 Logan Street  
New Bedford, MA, 02740-7324  
USA

### Contact information for item tested:

Oberon  
Jack Hirschmann  
JHirschmann@oberoncompany.com  
508-789-8983

### Test item description

Oberon Company,  
True Color Grey 40 Fabric;  
(L1) Style 1016; Blend: 60% Para-Aramid, 40% Meta-Aramid; Color: Black;  
Weave/Knit: Twill; Nominal Weight: 5.0 oz/yd<sup>2</sup>; Weight as Tested: 5.38 oz/yd<sup>2</sup>;  
Manufacturer: Insulsafe;  
(L2/L3) Style 995Q; Blend: 51% Meta-Aramid, 49% Para-Aramid, Weave/Knit: Non-Woven quilted to twill,  
Color: Yellow; Nominal Weight: 5.7 oz/yd<sup>2</sup>; Weight as Tested: 6.53 oz/yd<sup>2</sup>;  
Manufacturer: Insulsafe/DuPont/Oberon;

### Reference Standard

ASTM F1959/F1959M-14e1  
Standard Test Method for Determining the Arc Rating of Materials for Clothing

### Test Parameters:

Test current: 8 kA	Number of samples analysed: 21
Arc Gap: 30 cm	
Distance to Fabric: 30 cm	Incident Energy Range: 28 to 63 cal/cm <sup>2</sup>

**Arc Rating, ATPV = 46 Cal/cm<sup>2</sup>**  
**Heat Attenuation Factor, HAF = 94%**

No variations to standard method noted.

Samples tested as received, pre-test laundering as required by standard was arranged by client.

### Test Summary

The Arc Rating of this material is intended for use as part of a flame resistant garment or system for workers exposed to electric arcs. The test result is applicable only to the test item as described; other fiber blends, weaves, finishing or dye may have different protection level. The test articles are tested as received; no test is done to validate the fiber content or composition. The Arc Rating was calculated based on the data obtained and analysed in accordance with the latest version of the applicable standards. The individual test sheets, graphs, photographs of the samples and video of every test are provided in digital format to the Client for review.

The arc testing performed to the above mentioned Standard is accredited by the Standards Council of Canada (SCC) to conform to the requirements of CAN-P-4E (ISO/IEC 17025:2005). Accreditation by the Standards Council of Canada (SCC) is a mark of competence and reliability recognized throughout the world.

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Note: The test performed does not apply to electrical contact or electrical shock hazard.

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Prepared by:

Andrew Haines  
HCL Supervising Technologist  
Kinectrics Inc.

Approved by:

  
Kenneth Cheng, P. Eng., MBA  
Project Manager, DAM  
Kinectrics Inc.

Note: For verification about results in this report, please forward copy of the report or inquiry to hcl@kinectrics.com

Date:  
Aug-28-17

Determination of ATPV by performing logistic regression on the panel burn response as indicated in Summary Table



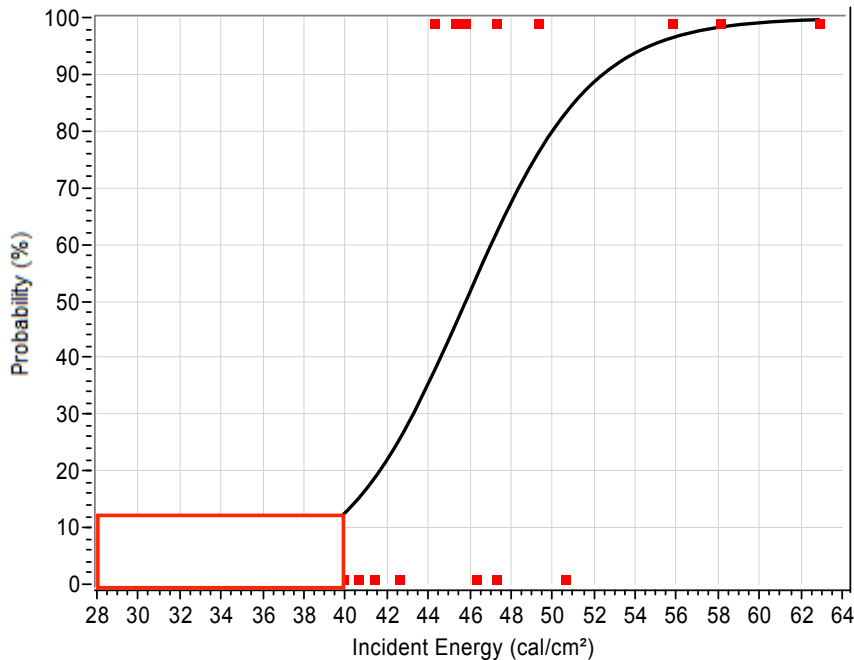
Report #  
K-419995-01-R00

Test Performed in accordance with: ASTM F1959/F1959M-14e1

**Fabric Description:**

Oberon Company,  
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Manufacturer: Insulsafe/DuPont/Oberon;

Determination of ATPV



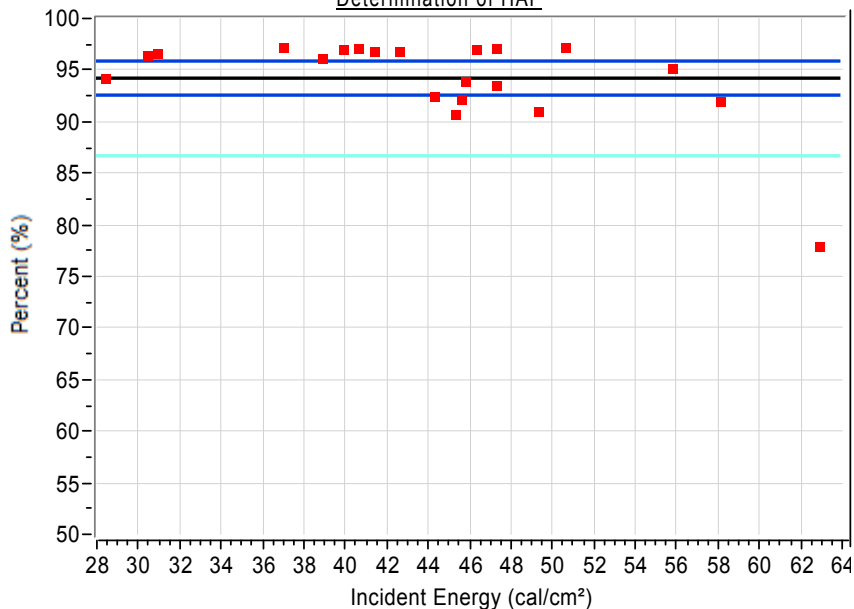
**ATPV = 46 cal/cm<sup>2</sup>**

Probability	Ei
5%	37.0
10%	39.2
20%	41.6
30%	43.3
40%	44.6
50%	45.8
60%	47.0
70%	48.4
80%	50.0
90%	52.4

(Note: ATPV is reported to nearest integer for ratings above 10 cal/cm<sup>2</sup>)

**Total points analyzed = 21**  
**Points above Stoll = 9**  
**Points above mix zone = 3**  
**Points below mix zone = 9**  
**# Pts within 20% = 15**  
**# Pts in mix zone = 9**

Determination of HAF



**HAF = 94 %**

Confidence Intervals  
95% CI = 92.4 , 95.6

Data pts

Best Fit

95% CI

95% CI pts

Date:  
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Summary of Measured Energy and Observations



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	Test #	Panel	Test Current A	Cycles of 60Hz	Ei Cal/cm <sup>2</sup>	SCD Cal/cm <sup>2</sup>	HAF %	>Stoll Y/N	Break Open Y/N	Ablation Y/N	After Flame sec.	Omit Y/N	Comment
1	K-419995-5042	A	8220	67.1	47.3	-0.8	97.1	No	N	N	-	No	
2	K-419995-5042	B	8220	67.1	49.3	2.4	91.0	Yes	Y	Y	-	No	
3	K-419995-5042	C	8220	67.1	58.1	2.8	92.0	Yes	Y	Y	-	No	
4	K-419995-5043	A	8223	60.1	41.4	-1.0	96.8	No	N	N	-	No	
5	K-419995-5043	B	8223	60.1	45.6	1.4	92.2	Yes	Y	Y	-	No	
6	K-419995-5043	C	8223	60.1	47.3	0.8	93.5	Yes	Y	Y	-	No	
7	K-419995-5044	A	8225	55.2	40.6	-1.0	97.1	No	N	N	-	No	
8	K-419995-5044	B	8225	55.2	45.3	1.8	90.7	Yes	Y	Y	-	No	
9	K-419995-5044	C	8225	55.2	42.6	-0.7	96.8	No	N	N	-	No	
10	K-419995-5045	A	8225	58.1	38.9	-0.7	96.2	No	N	N	-	No	
11	K-419995-5045	B	8225	58.1	45.8	0.6	93.9	Yes	N	N	-	No	
12	K-419995-5045	C	8225	58.1	46.3	-0.6	97.0	No	N	N	-	No	
13	K-419995-5046	A	8222	53.3	37.0	-1.0	97.2	No	N	N	-	No	
14	K-419995-5046	B	8222	53.3	44.3	1.2	92.5	Yes	Y	Y	-	No	
15	K-419995-5046	C	8222	53.3	39.9	-0.9	97.0	No	N	N	-	No	
16	K-419995-5047	A	8166	70.3	50.6	-0.9	97.2	No	N	N	-	No	
17	K-419995-5047	B	8166	70.3	62.9	12.2	77.9	Yes	Y	Y	-	No	
18	K-419995-5047	C	8166	70.3	55.8	0.3	95.2	Yes	Y	Y	-	No	
19	K-419995-5048	A	8216	40.0	28.4	-1.1	94.2	No	N	N	-	No	
20	K-419995-5048	B	8216	40.0	30.9	-1.0	96.6	No	N	N	-	No	
21	K-419995-5048	C	8216	40.0	30.4	-1.0	96.5	No	N	N	-	No	
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No evidence of afterflame in any of the samples tested.