


Report # K-418502-01		<h2 style="text-align: center;">Test Report</h2> <p style="text-align: center;">Kinectrics Inc., 800 Kipling Avenue, Unit 2 Toronto, Ontario, Canada Tel: 416-207-6000, www.kinectrics.com</p>		 KINECTRICS ISO 9001-2008
Samples Received: Feb 25, 2013	Samples Tested: Feb 27, 2013			

<u>Tested for</u> International Personal Protection Inc. 7809 Adelaide Drive Austin, TX 78739	<u>Contact information for item tested:</u> International Personal Protection Inc. Jeff Stull Tel: 1-512-288-8272 Email: intlperpro@aol.com
---	--

Test item description

Name: FR Cooling Products
 Blend: Modacrylic 60%, Cotton 38%, Antistatic 2%, Colour: Dark Blue
 Nominal weight of fabric: 230 g/m², Supplier: Ergodyne
 Measured weight before test: 7.4 oz/yd² (250 g/m²)
 Fabric tested as received, prior washed 3 times arranged by IPP

Reference Standard

ASTM F1959/F1959M-12, Standard Test Method for Determining the Arc Rating of Materials for Clothing

spare

<u>Test Parameters:</u> Test current: 8 kA Arc Gap: 30 cm Distance to Fabric: 30 cm	Number of samples analysed: 21 Incident Energy Range: 4 to 10 cal/cm ²
---	--

Arc Rating, Ebt = 7.1 Cal/cm²

Heat Attenuation Factor, HAF = 75%

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 samples were tested by Kinectrics as received. The test result is applicable only to the Test Item, other material or color may have different protection level. Actual performance of the complete garment may vary depending on the final design and assembly of the garment. 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.

As of August 1, 2010, the arc testing performed to the above mentioned Standard is accredited by the Standards Council of Canada to conform to the requirements of CAN-P-4E (ISO/IEC 17025:2005) by QMI, a division of SAI Global and North America's leading QMS registrar. Adherence to this standard provides one of the strongest assurances of service quality available. As a minimum, since July 1998 all work at Kinectrics is performed to meet the requirements of ISO 9001.

Kinectrics Inc takes reasonable steps to ensure that all work performed shall meet the industry standards as set out in Kinectrics Inc.'s Quality Manual, and that all reports shall be reasonably free of errors, inaccuracies or omissions. KINECTRICS INC. DOES NOT MAKE ANY WARRANTY OR REPRESENTATION WHATSOEVER, EXPRESS OR IMPLIED, WITH RESPECT TO THE MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY INFORMATION CONTAINED IN THIS REPORT OR THE RESPECTIVE WORKS OR SERVICES SUPPLIED OR PERFORMED BY KINECTRICS INC. Kinectrics Inc. does not accept any liability for any damages, either directly, consequentially or otherwise resulting from the use of this report.

Note

- The test performed does not apply to electrical contact or electrical shock hazard.
- An unsigned copy of this report is an unofficial reporting of information. Report must be signed to validate test data and conform to quality standards.

Performed by: J. Ogrodowczyk 2013.03.21 09:15:52 -04'00' Joe Ogrodowczyk Station Operator, HCL Ph: 416-207-6000	Approved by:  Claude Maurice, Lab Manager High Current Laboratory hcl@kinectrics.com	Digitally signed by Claude Maurice Date: 2013.03.21 09:16:45 -04'00'
---	---	---

Date:
Feb 27, 2013

Report #
K-418502-01

Determination of Ebt by performing logistic regression on break-open
observations as indicated in summary Table

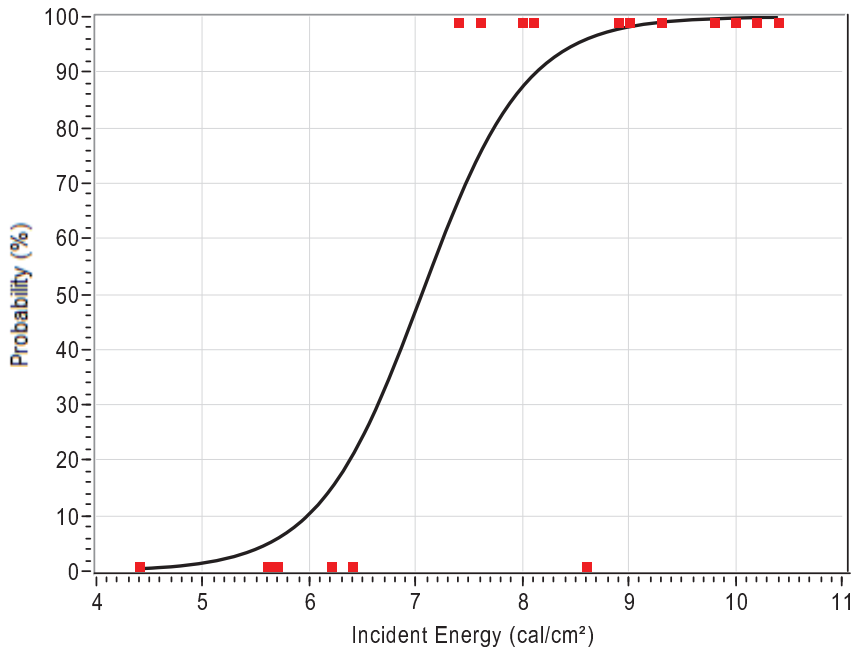
ASTM F1959/F1959M-12, Standard Test Method for Determining the Arc Rating of
Materials for Clothing



Fabric Description:

Name: FR Cooling Products
Blend: Modacrylic 60%, Cotton 38%, Antistatic 2%, Colour: Dark Blue
Nominal weight of fabric: 230 g/m², Supplier: Ergodyne
Measured weight before test: 7.4 oz/yd² (250 g/m²)
Fabric tested as received, prior washed 3 times arranged by IPP

Determination of Ebt, 50% of Probability of Breakopen

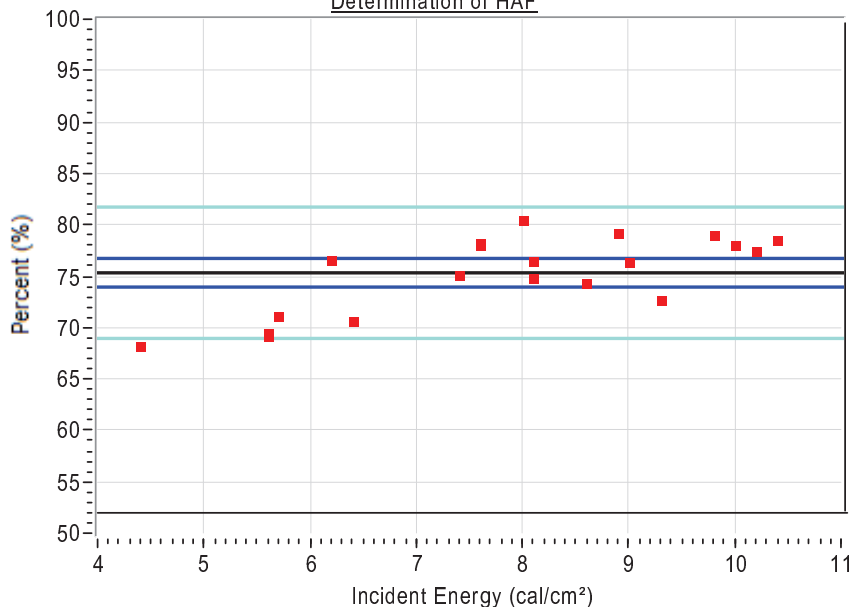


Ebt = 7.1 cal/cm²

Probability	Ei
5%	5.6
10%	6.0
20%	6.4
30%	6.6
40%	6.9
50%	7.1
60%	7.3
70%	7.5
80%	7.7
90%	8.1

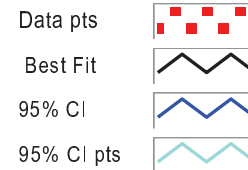
Pts = 21
Pts above Stoll = 6
Pts Break-Open = 14
Pts above mix zone = 7
Pts below mix zone = 6
Pts within 20% = 10
Pts in mix zone = 8

Determination of HAF



HAF = 75 %

Confidence Intervals
95% CI = 73.6 , 76.4



Date:
Feb 27, 2013

Report #
K-418502-01

Summary of Measured Energy and Observations

ASTM F1959/F1959M-12, Standard Test Method for Determining the Arc Rating of Materials for Clothing



Fabric Name: FR Cooling Products

Description: Blend: Modacrylic 60%, Cotton 38%, Antistatic 2%, Colour: Dark Blue

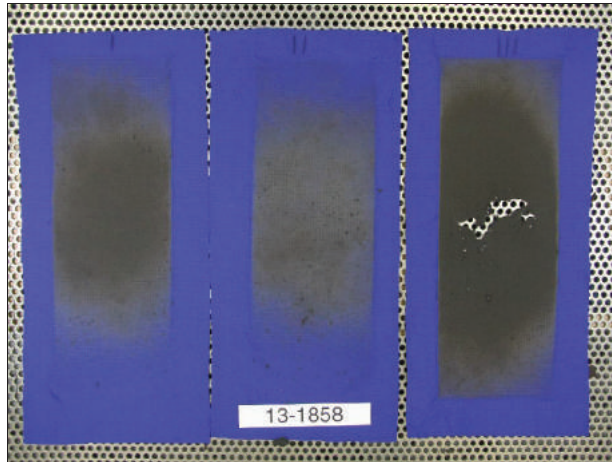
Nominal weight of fabric: 230 g/m², Supplier: Ergodyne

Measured weight before test: 7.4 oz/yd² (250 g/m²)

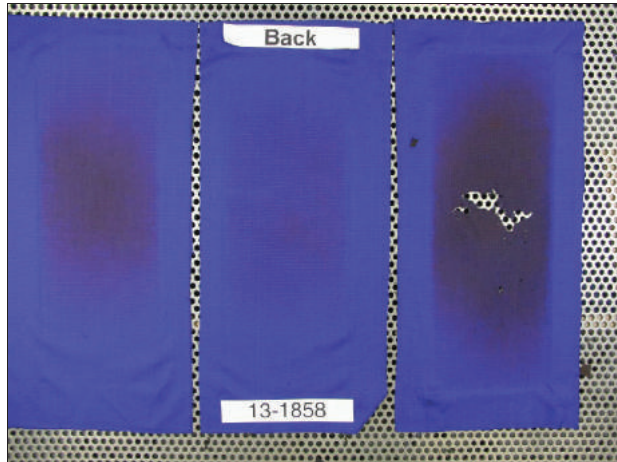
Fabric tested as received, prior washed 3 times arranged by IPP

Test #	Panel	Test Current A	Cycles of 60Hz	EI Cal/cm ²	SCD Cal/cm ²	HAF %	Burn Y/N	Break Open Y/N	Ablation Y/N	After Flame sec.	Omit Y/N	Comment
1	K-418502-1856	A	8319	10.2	8.6	-0.08	74.3	No	-	-	No	Front and back charred, weak
2	K-418502-1856	B	8319	10.2	8.9	0.1	79.2	Yes	y	-	No	Charred and break open
3	K-418502-1856	C	8319	10.2	9.0	-0.1	76.4	No	y	-	No	"
4	K-418502-1857	A	8262	12.1	10.4	0.76	78.5	Yes	y	-	No	"
5	K-418502-1857	B	8262	12.1	8.1	-0.0	76.5	No	y	-	No	"
6	K-418502-1857	C	8262	12.1	9.8	0.4	79.0	Yes	y	-	No	"
7	K-418502-1858	A	8359	8.1	5.6	-0.44	69.2	No	-	-	No	Front and back charred, weak
8	K-418502-1858	B	8359	8.1	5.6	-0.5	69.5	No	-	-	No	"
9	K-418502-1858	C	8359	8.1	7.6	-0.3	78.1	No	y	-	No	Charred and break open
10	K-418502-1859	A	8402	7.2	7.4	-0.37	75.1	No	y	-	No	"
11	K-418502-1859	B	8402	7.2	4.4	-0.6	68.2	No	-	-	No	Front charred, discoloured on back
12	K-418502-1859	C	8402	7.2	6.2	-0.6	76.6	No	-	-	No	"
13	K-418502-1860	A	8341	9.1	7.6	-0.04	78.0	No	y	-	No	Charred and break open
14	K-418502-1860	B	8341	9.1	8.1	-0.2	74.8	No	y	-	No	"
15	K-418502-1860	C	8341	9.1	7.6	-0.3	78.2	No	y	-	No	"
16	K-418502-1861	A	8393	8.6	5.7	-0.53	71.1	No	-	-	No	Front and back charred, weak
17	K-418502-1861	B	8393	8.6	6.4	-0.3	70.6	No	-	-	No	"
18	K-418502-1861	C	8393	8.6	8.0	-0.2	80.5	No	y	-	No	Charred and break open
19	K-418502-1862	A	8264	13.1	10.0	0.77	78.0	Yes	y	-	No	"
20	K-418502-1862	B	8264	13.1	10.2	1.0	77.4	Yes	y	-	No	"
21	K-418502-1862	C	8264	13.1	9.3	1.2	72.7	Yes	y	-	No	"
22												
23												
24												
25												
26												
27												
28												
29												
30												
31												
32												
33												
34												
35												
36												
37												
38												
39												

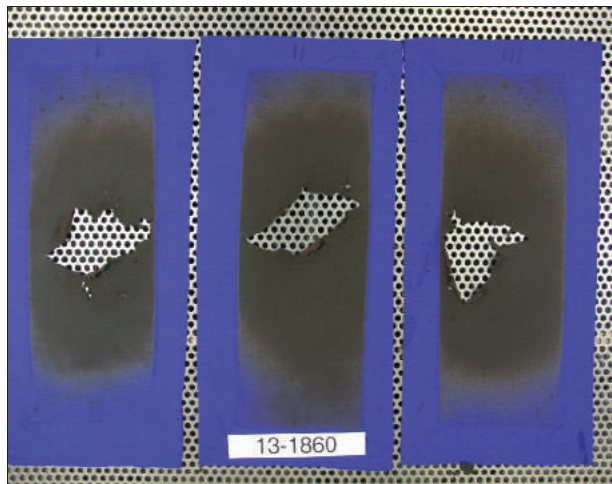
K-418502-01, Samples of fabric after testing



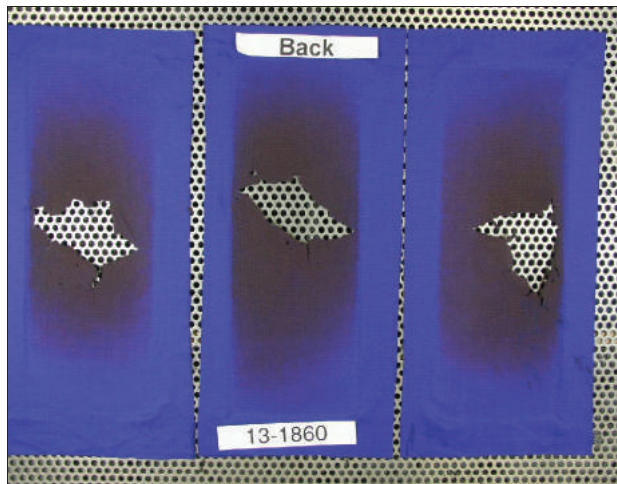
Observations at 5.6 to 7.6 cal/cm²



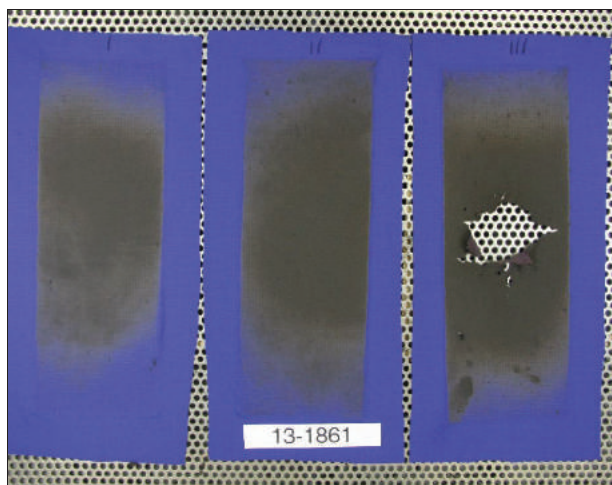
back has discoloration and B/O at 7.6 cal/cm²



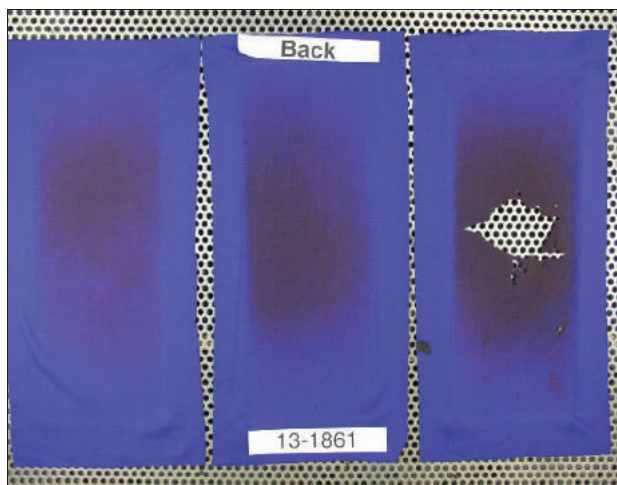
Observation at 7.6 to 8.1 cal/cm²



fabric breaks apart w when handled, charred



Observation at 6 to 8 cal/cm²



some charring, weak and cracks near 8 cal/cm²