

INDUSTRIAL TESTING LABORATORY

Report No. 040511-03E-a

Page 1 of 8

**TEST REPORT**

Report Date: 25 January 2005

Test Component: King Tech KT8201R Polyester Tricot Knitted Fluorescent Red-Orange Background Material

Submitted by: Shanghai King Tech Industry Company, Ltd.

Test Laboratory: Calcoast - ITL  
Emeryville, CA 94608

Products: Fluorescent Red-Orange Knit Material (Solid)

**SUMMARY**

Specification: ANSI/ISEA 107-2004  
American National Standard for High-Visibility Safety Apparel  
Background Material

|                                                                                   |                |
|-----------------------------------------------------------------------------------|----------------|
| Color.....                                                                        | Passed         |
| Color Fastness to Crocking.....                                                   | Passed         |
| Color Fastness to Perspiration.....                                               | Passed         |
| Color Fastness When Laundered (Method 1A).....                                    | Passed         |
| Color Fastness When Dry-cleaned,<br>Hypochlorite Bleached and/or Hot-pressed..... | Not Applicable |
| Colorfastness of Background Materials after Xenon Test.....                       | Passed         |
| Dimensional Change of Background Material.....                                    | Passed         |
| Tensile Strength of Woven Materials.....                                          | Not Applicable |
| Bursting Strength of Knitted Materials.....                                       | Passed         |
| Tear Resistance of Woven Materials.....                                           | Not Applicable |
| Resistance to Water Penetration.....                                              | Not Applicable |
| Water Repellency.....                                                             | Not Applicable |
| Water Vapor Permeability.....                                                     | Not Applicable |

Signature of Responsible Laboratory Official:

Mark A. Evans  
Photometric Engineer

**TEST DATA SHEET**

Material Tested: King Tech KT8201R Polyester Tricot Knitted Fluorescent Red-Orange Background Material

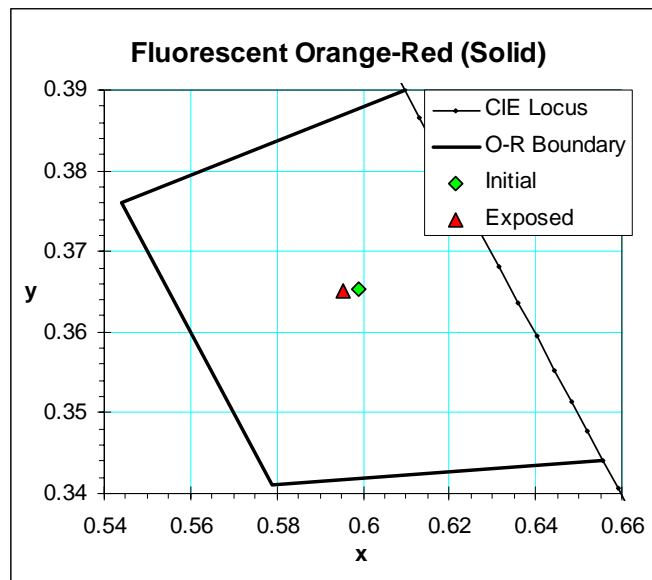
**Color**

Requirement: ANSI/ISEA 107-2004 7.1

Test Method: ASTM E1164-02  
Illuminant D65, 45/0 Geometry, 2° Standard Observer

The chromaticity coordinates shall be within one of the areas defined in Table 2 and the luminance factor shall exceed the corresponding minimum in Table 2.

| Color   | x      | y      | $\beta$ | Required $\beta$ |
|---------|--------|--------|---------|------------------|
| KT8201R | 0.5988 | 0.3654 | 0.452   | $\geq 0.40$      |



Comments: Sample meets all color requirements.

**TEST DATA SHEET**

Material Tested: King Tech KT8201R Polyester Tricot Knitted Fluorescent Red-Orange Background Material

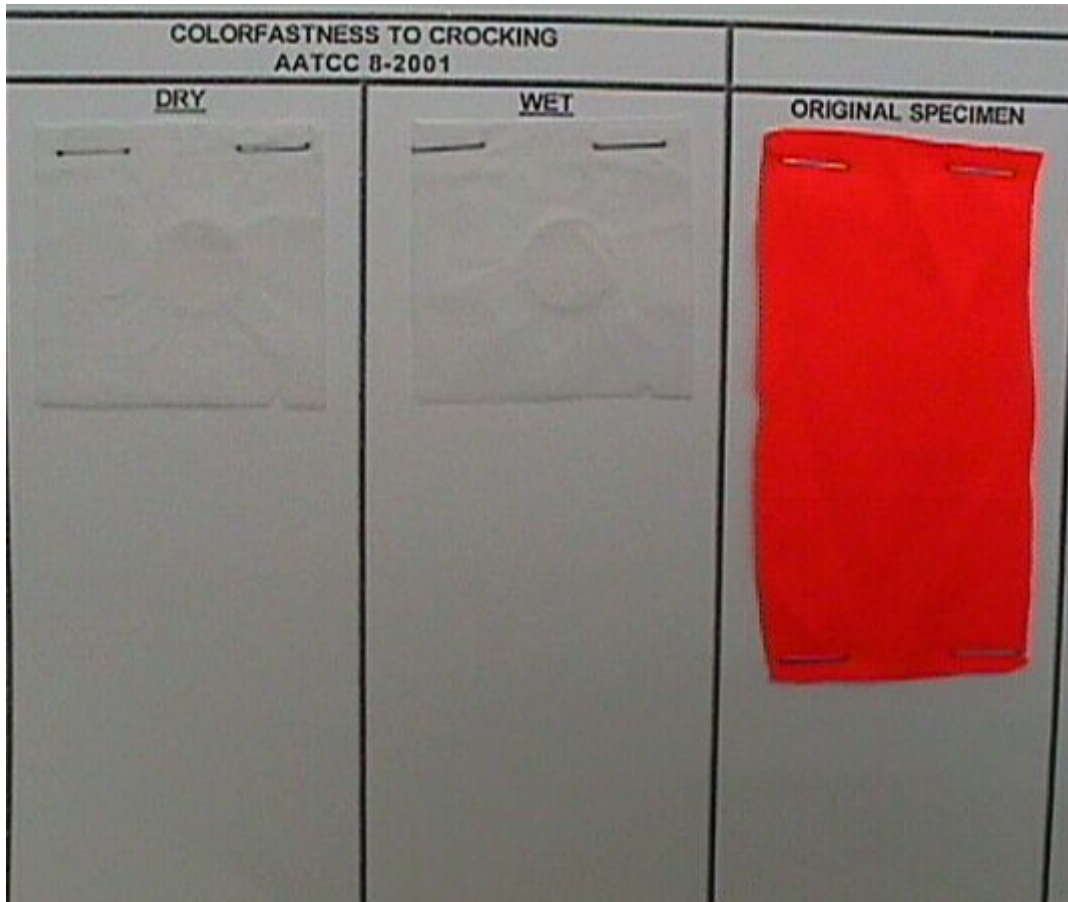
**Color Fastness to Crocking**

Requirement: ANSI/ISEA 107-2004 7.2.1

Test Method: AATCC Test Method 8 - 2001

The color fastness to crocking both wet and dry should be at least a grade 4.0 by the Gray Scale for Staining in accordance with AATCC 8-2001.

| Color   | Wet      |          | Dry      |          |
|---------|----------|----------|----------|----------|
|         | Measured | Required | Measured | Required |
| KT8201R | 4.5      | ≥4.0     | 4.5      | ≥4.0     |



Comments: Sample meets all colorfastness to crocking requirements.

**TEST DATA SHEET**

Material Tested: King Tech KT8201R Polyester Tricot Knitted Fluorescent Red-Orange Background Material

**Color Fastness to Perspiration**

Requirement: ANSI/ISEA 107-2004 7.2.2

Test Method: AATCC Test Method 15 - 2002

The color fastness to perspiration should be at least a grade 4.0 for color change by the Gray Scale for Color Change and at least a grade 3.0 for staining by the Gray Scale for Staining in accordance with AATCC 15-2002.

| Perspiration | Color Change |      | Staining |        |       |           |         |      |      |
|--------------|--------------|------|----------|--------|-------|-----------|---------|------|------|
|              | Meas.        | Req. | Acetate  | Cotton | Nylon | Polyester | Acrylic | Wool | Req. |
| KT8201R      | 4.5          | ≥4.0 | 4.5      | 5.0    | 4.5   | 5.0       | 5.0     | 5.0  | ≥3.0 |



Comments: Sample meets all colorfastness to perspiration requirements.

**TEST DATA SHEET**

Material Tested: King Tech KT8201R Polyester Tricot Knitted Fluorescent Red-Orange Background Material

**Color Fastness - When Laundered**

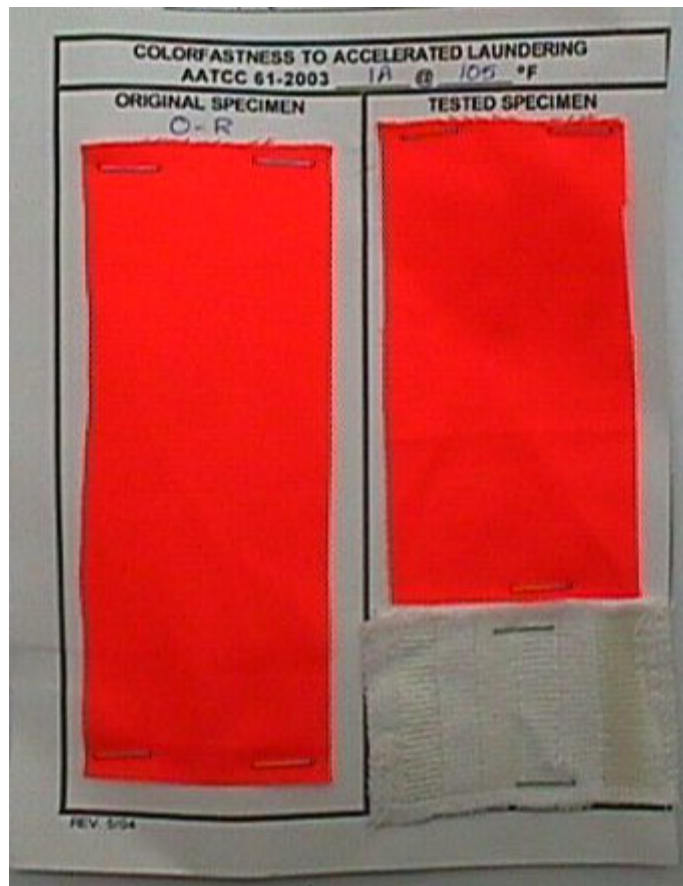
Requirement: ANSI/ISEA 107-2004 7.2.3

Test Method: Laundering - AATCC Test Method 61 - 2001 (Method 1A / 105°F)

When the care label requirements are as specified in Table 4 the color fastness shall be determined in accordance with the performance requirements and test methods stated in Table 4.

Specimens shall be dried hanging in air at a temperature not exceeding 60°C with parts in contact only at the lines of stitching.

| Laundering(1A) | Color Change |      | Staining |        |       |           |         |      |      |
|----------------|--------------|------|----------|--------|-------|-----------|---------|------|------|
|                | Meas.        | Req. | Acetate  | Cotton | Nylon | Polyester | Acrylic | Wool | Req. |
| KT8201R        | 4.5          | ≥4.5 | 4.5      | 5.0    | 4.5   | 5.0       | 5.0     | 5.0  | ≥3.0 |



Comments: Sample meets all colorfastness to home laundering requirements when tested using method 1A.

**TEST DATA SHEET**

Material Tested: King Tech KT8201R Polyester Tricot Knitted Fluorescent Red-Orange Background Material

**Colorfastness of Background Materials After Xenon Test**

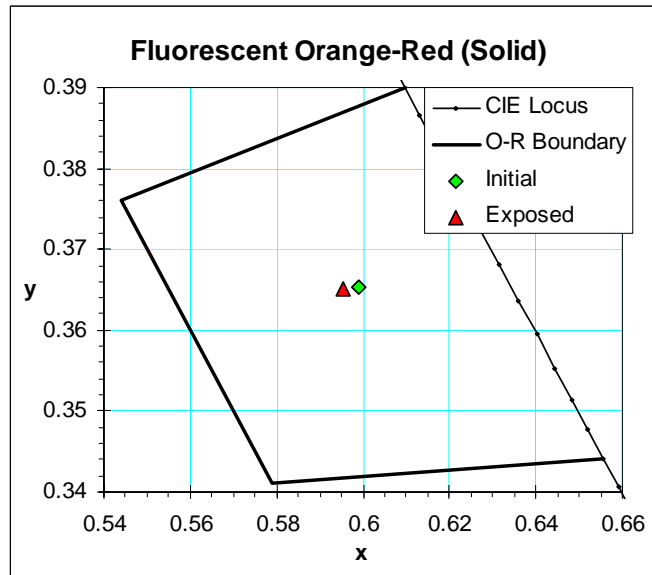
Requirement: ANSI/ISEA 107-2004 7.2.4

Test Method: AATCC Test Method 16 - 1998 (Option 3)

The color after exposure shall be within the areas defined by the coordinates in Table 2 and the luminance factor shall be not less than the corresponding minimum values in Table 2.

The light fastness of the test sample shall be determined in accordance with AATCC 16-1998 (Test Option 3). Expose the materials to 40 AATCC Fading Units.

| Color   | x      | y      | $\beta$ | Required $\beta$ |
|---------|--------|--------|---------|------------------|
| KT8201R | 0.5952 | 0.3652 | 0.420   | $\geq 0.40$      |



Comments: Sample meets all colorfastness to xenon exposure requirements.

**TEST DATA SHEET**

Material Tested: King Tech KT8201R Polyester Tricot Knitted Fluorescent Red-Orange Background Material

**Dimensional Change of Background Material**

Requirement: ANSI/ISEA 107-2004 7.3

Test Method:  
Home Laundering - AATCC Test Method 135-2000(3)(III)(A)(iii)

The dimensional change of background material shall not exceed  $\pm 4\%$  in length and  $\pm 2\%$  in width.

| Color   | Length        |            | Width         |            |
|---------|---------------|------------|---------------|------------|
|         | Ave. Measured | Required   | Ave. Measured | Required   |
| KT8201R | -0.5%         | $\leq 4\%$ | -0.6%         | $\leq 2\%$ |

Comments: Sample meets all dimensional change requirements.

**Bursting Strength of Knitted Materials**

Requirement: ANSI/ISEA 107-2004 7.4.2

Test Method: ASTM D3787-01

The minimum bursting strength shall be 267 N (60 lbs). Bursting strength shall be tested in accordance with ASTM D-3787 using sample specimens of 30mm diameter.

| Color   | Measured  | Required      |
|---------|-----------|---------------|
| KT8201R | 148.0 lbs | $\geq 60$ lbs |

Comments: Sample meets all bursting strength requirements.

Report No. 040511-03E-a

**TEST DATA SHEET**

Material Tested: King Tech KT8201R Polyester Tricot Knitted Fluorescent  
Red-Orange Background Material

**PHOTOGRAPHS**

