

## Technical Data Sheet

April 2005

### Description

3M™ Scotchlite™ Reflective Material – 8910 Silver Fabric is composed of wide angle, exposed retroreflective lenses bonded to a durable cloth backing (65% polyester, 35% cotton).

### Retroreflective Performance

The coefficient of retroreflection ( $R_A$ , in cd/lux/m<sup>2</sup>) is measured by methods traceable to either of the following retroreflective intensity testing procedures:

ASTM E809 and E810 ( $R_A$ )  
 CIE 54: 1982 ( $R'$ )

The  $R_A$  values were measured at the listed specific entrance and observation angles.

Entrance Angle	Observation Angle	Typical $R_A$	Minimum $R_A$
-4.0°	0.2°	500	330
+5.0°	0.33°	330	250

### Color

Product Number	Daytime Color	Reflected Color
8910	Silver	White

### Physical Performance

Scotchlite reflective material – 8910 silver fabric is certified to meet ANSI/ISEA 107-2004 Level 2 retroreflective performance and EN 471 Level 2 retroreflective performance, and will meet or exceed the following specifications:

Retroreflectivity: . . . . . ANSI/ISEA 107-2004  
 (Initial) . . . . . Level 2 (Table 5)  
 . . . . . EN 471 Level 2 (Table 5)

Abrasion: . . . . . EN 530 Method 2  
 ( $R_A \geq 100$ )<sup>1</sup> . . . . . 5000 cycles

Flexing: . . . . . ISO 7854 Method A  
 ( $R_A \geq 100$ )<sup>1</sup> . . . . . 7500 cycles

Cold Fold: . . . . . ISO 4675 (-20° C)  
 ( $R_A \geq 100$ )<sup>1</sup>

Temperature Cycle: . . . . . 12 hours @ (50±2)° C  
 ( $R_A \geq 100$ )<sup>1</sup> . . . . . 20 hours @ (-30±2)° C

Wash: . . . . . ISO 6330 Method 2A  
 ( $R_A \geq 100$ )<sup>1</sup> . . . . . 50 cycles @ 60° C (140° F)

Dry-clean: . . . . . ISO 3175 Method 9.1  
 ( $R_A \geq 100$ )<sup>1</sup> . . . . . 20 cycles

Wet Reflectivity: . . . . . ANSI/ISEA 107-2004 Annex A  
 ( $R_A \geq 100$ )<sup>1</sup> . . . . . EN 471 Annex A

<sup>1</sup> Measured at 0.2° observation angle and 5.0° entrance angle.



## Performance

While use of 3M™ Scotchlite™ Reflective Material enhances visibility, no reflective material can guarantee absolute visibility, particularly in adverse weather conditions. Performance will vary depending upon actual use, exposure conditions and maintenance. Users should test reflective material to satisfy conformance to their own requirements.

## Application Instructions

Whenever two or more pieces of 3M™ Scotchlite™ Reflective Material – 8910 Silver Fabric are used together on a single surface or as a set, they should be matched to ensure uniform daytime color and nighttime reflectivity.

**Cutting:** Die-cutting is recommended, although it can also be hand-cut or guillotined.

**Sewing:** Sew in place using a lockstitch with no more than 12 stitches per inch (2.54 cm), and not less than 5/64" (2 mm) from the edge of the reflective fabric. For best results, apply to light and medium weight fabrics.

## Care and Maintenance Instructions

**Important:** Test each application according to appropriate care instructions required for the finished product. Actual life of Scotchlite reflective material – 8910 silver fabric depends on cleaning method and wear conditions. Care label recommendations:



**Wash:**  
Machine wash warm,  
40° C (105° F)



**Dry:**  
Tumble dry low



**Dry-clean:**  
Dry-clean, normal cycle



**Bleach:**  
Only non-chlorine bleach  
when needed



**Iron:**  
Use medium iron,  
150° C (300° F)

## Product Availability

Scotchlite reflective material – 8910 silver fabric is available in rolls with the following standard widths and roll lengths:

Units	Width	Width Tolerance	Standard Roll Length
inches	< 6"	± 1/32"	100 m
inches	6" ≤ w < 36" ≥ 36"	0" to +1/8" +1/8" to +1/4"	100 m (> 12" = 50 m)
mm	< 150 mm	± 1 mm (std) ± .5 mm (special)	100 m
mm	150 mm ≤ w < 900 mm ≥ 900 mm	0 mm to +4 mm +3 mm to +7 mm	100 m (> 300 mm = 50 m)

## Order and Product Information

To order 3M™ Scotchlite™ Reflective Material Products contact 3M Personal Safety Products Customer Service at 800-328-7098 Ext. 2.

## Storage and Shelf Life

Store in a cool, dry area and use within two years after date of receipt. Store rolls in original shipping cartons. Return partially used rolls to the carton or suspend horizontally through the core. Cut sheets should be stored flat.

## Handling Precautions for Hot and Humid Environments

Scotchlite reflective material – 8910 silver fabric contains an aluminum layer as part of its construction. Blemishing of this aluminum layer can occur if the front surface of the product has direct contact from hands during application and is then exposed to hot and humid conditions, greater than 80° F and greater than 70% relative humidity, for a period of weeks. These blemishes do not affect the performance of the product.

## Important Notice to User

**LIMITED WARRANTY:** In the event any 3M™ Scotchlite™ Reflective Material is found to be defective in material, workmanship, or not in conformation with any express warranty, 3M's only obligation and your exclusive remedy shall be to replace or refund the purchase price, at 3M's option, of such product upon timely notification thereof and substantiation that the product has been stored, maintained and used in accordance with 3M's written instructions.

**EXCLUSIONS TO WARRANTY: THIS WARRANTY IS EXCLUSIVE AND IN LIEU OF ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHER WARRANTY OF QUALITY, EXCEPT OF TITLE AND AGAINST PATENT INFRINGEMENT.**

**LIMITATION OF LIABILITY:** Except as provided above, 3M shall not be liable in contract or tort for any loss or damage, whether direct, indirect, incidental, special or consequential, (including, without limitation, lost profits, goodwill and business opportunity) arising out of the sale, use or misuse of the product, or the user's inability to use the product. **THE REMEDIES SET FORTH HEREIN ARE EXCLUSIVE.**

Because of the unlimited variety of potential applications for these products, BEFORE production use, the user (which may be a product designer, product specifier, converter or end product manufacturer or others) must determine that the Products are suitable for the intended use and are compatible with other component materials. User is solely responsible for determining the proper amount and placement of Products. While reflective products enhance visibility, no reflective product can ensure visibility or safety under all possible conditions.

3M may change the product, specifications and availability of the product as improvements are made; therefore, user should contact 3M for latest information before specifying the product.



**Personal Safety Products  
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