



## Scotchlite™

### Reflective Material

### 8850 Silver Pressure Sensitive Adhesive Film

Technical Data Sheet

April 2001

#### Description

3M™ Scotchlite™ Reflective Material - 8850 Silver Pressure Sensitive Adhesive Film is composed of wide angle, exposed retroreflective lenses bonded to a rubber-based pressure-sensitive adhesive. The reflective surface is protected by a white paper carrier for ease in handling, and should be removed after lamination. A plastic liner protects the adhesive surface.

#### 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
8850	Silver	White

#### Physical Performance

Scotchlite reflective material - 8850 silver pressure sensitive adhesive film is certified to meet ANSI/ISEA 107-1999 Level 2 retroreflective performance and EN 471 Class 2 retroreflective performance, and will meet or exceed the following specifications:

- Retroreflectivity: . . . . .ANSI/ISEA 107-1999  
(Initial) Level 2 (Table 5)  
EN 471 Class 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> 10 cycles applied to  
Polyurethane coated nylon  
(Dartex)
- Wet Reflectivity: . . . . .ANSI/ISEA 107-1999 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 - 8850 Silver Pressure Sensitive Adhesive Film are used together on a single surface or as a set, they should be matched to ensure uniform daytime color and nighttime or low-light reflectivity.

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

**Application to substrate:** Work on a flat surface where uniform pressure can be applied. Avoid applying film over seams and stitches.

1. Remove plastic liner, exposing pressure-sensitive adhesive. Do not remove paper carrier.
2. With adhesive side down, press firmly onto substrate by starting on one end and gradually working to the other end. This will prevent air bubbles. Do not let adhesive touch the substrate until just before pressure is applied.

3. Additional adhesion may be gained by evenly pressing for 5 seconds with an iron set at “synthetic.”

4. Remove the white paper liner by lifting one corner and pulling back over itself in a continuous, smooth manner.

## Care and Maintenance Instructions

**Important:** Test each application according to appropriate care instructions required for the finished product. Actual life of Scotchlite reflective material - 8850 silver pressure sensitive adhesive film depends on cleaning method and wear conditions. Use of pressure-sensitive adhesives is not recommended for permanent clothing applications that require wash durability.

**Care Recommendation:** Damp wipe only, using warm water and mild detergent. Rinse thoroughly, dry with a soft cloth or allow to air dry.

**Wash:** Do not machine wash



**Bleach:** Do not bleach



**Dry:** Line dry/hang to dry



**Iron:** Use cool iron, 110°C (230°F)



**Dry-clean:** Do not dry-clean



### Product Availability

3M™ Scotchlite™ Reflective Material - 8850 Silver Pressure Sensitive Adhesive Film is available in rolls with the following standard widths and roll lengths:

Units	Width	Width Tolerance	Standard Roll Length
inches	< 6"	±1/32"	100 yd.
inches	6" ≤ w < 36" ≥ 36"	0" to +1/8" +1/8" to +1/4"	100 yd. (> 12" = 50 yd.)
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 Department Customer Service at 800-328-7098 Ext. 2.

### Storage and Shelf Life

Store in a cool, dry area and use within one year 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 - 8850 silver pressure sensitive adhesive film contains an aluminum layer as part of its construction. Blemishing of this aluminum layer can occur if the paper carrier is removed and 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.

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### **Important Notice to Purchaser:**

Except where prohibited by law, 3M makes the following limited warranty in place of any others, express or implied, including any implied warranties or conditions of MERCHANTABILITY or fitness for a particular purpose or any implied warranty or condition commonly found in the industry: 3M shall replace or, at its option, refund the price paid to 3M for any 3M™ Scotchlite™ Reflective Material or other 3M reflective products ("Products") which at the time of shipment to 3M's purchaser do not meet 3M's published Product specifications.

Because of the unlimited variety of potential applications for Products, BEFORE production use, the User (which may be a 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 shall not be liable in contract or in tort, for any indirect, incidental, special, or consequential damages (including, without limitation, lost profits, goodwill and business opportunity) relating to the use or inability to use the Products.**



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