



Scotchlite™

Reflective Material

9910 Silver Industrial Wash Fabric

Technical Data Sheet

April 2001

Description

3M™ Scotchlite™ Reflective Material - 9910 Silver Industrial Wash Fabric is composed of wide angle, exposed retroreflective lenses bonded with a special polymer layer to a durable 100% polyester cloth backing.

Retroreflective Performance

The coefficient of retroreflection (R_A , in cd/lux/m²) 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 |
|----------------|---------------|-----------------|
| 9910 | Silver | White |

Physical Performance

Scotchlite reflective material - 9910 silver industrial wash fabric 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
($R_A \geq 100$)¹ 5000 cycles
- Flexing:ISO 7854 Method A
($R_A \geq 100$)¹ 7500 cycles
- Cold Fold:ISO 4675 (-20°C)
($R_A \geq 100$)¹
- Temperature Cycle: . . .12 hours @ (50±2)°C
($R_A \geq 100$)¹ 20 hours @ (-30±2)°C
- Wash:ISO 6330 Method 2A
($R_A \geq 100$)¹ 100 cycles @ 60°C (140°F)
ISO 6330 Method 1A
50 cycles @ 90°C (195°F)
- Industrial Wash:Per product industrial
($R_A \geq 100$)¹ wash guideline using 35#
Milnor®, Commercial
Program #5 50 cycles
- Dry-clean:ISO 3175 Method 9.1
($R_A \geq 100$)¹ 50 cycles
- Wet Reflectivity:ANSI/ISEA 107-1999 Annex A
($R_A \geq 100$)¹ EN 471 Annex A

¹ 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 - 9910 Silver Industrial Wash Fabric 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 fabric 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. Thread recommendation: 100% polyester.

Care and Maintenance Instructions

Important: Test each application according to appropriate care instructions required for the finished product. Actual life of Scotchlite reflective material - 9910 silver industrial wash fabric depends on cleaning method and wear conditions. Care label recommendation for home laundering:

Home Wash Guideline

Wash: Machine wash, 60°C (140°F)



Bleach: Only non-chlorine bleach when needed



Dry: Tumble dry low



Iron: Use medium iron, 150°C (300°F)



Dry-clean: Dry-clean, normal cycle



Industrial Wash Guideline

Use low- to medium-alkaline, high-surfactant detergents. **Do not** use detergents that contain free sodium hydroxide or potassium hydroxide.

Do not use solvenated surfactants.

Stain treatment wash processing will greatly reduce the life of Scotchlite reflective material - 9910 silver industrial wash fabric.

Do not use chlorine or perborate bleach.

Maximum wash temperature: 75°C (165°F)

Break/suds cycles: Less than 15 minutes total

Tunnel dry: Tunnel input temperature must not exceed 120°C (250°F)

Tumble dry: Maximum exhaust stack temperature 90°C (195°F)

Pressing: Do not exceed 150°C (300°F)

Product Availability

3M™ Scotchlite™ Reflective Material - 9910 Silver Industrial Wash 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 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 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 - 9910 silver industrial wash 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 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.**



Personal Safety Products Department 3M Safety and Security Systems Division

3M Center, Building 225-4N-14
St. Paul, MN 55144-1000
800-328-7098, Ext. 2

3M Canada

P. O. Box 5757
London, Ontario, Canada N6A 4T1
800-364-3577

3M Mexico

Avenida Santa Fe #55
Col. Santa Fe, CP01210
Delegacion Alvaro Obregon
Telephone: 270-21-62
Fax: 270-22-94



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