



Scotchlite™ Reflective Material Yarns

Technical Data Sheet

August 1998

Description

3M™ Scotchlite™ Reflective Material - Yarns are composed of 3M™ Scotchlite™ Reflective Material - 8710 Silver Transfer Film laminated (one or two sides) to polyester (1 or 2 mil) film and slit to narrow widths. In addition, 3M™ Scotchlite™ Reflective Material - 9910 Silver Industrial Wash Fabric is available slit to yarn width.

Scotchlite reflective material - yarns configurations:

Product Number	Configuration	Available Widths
2P1	2 mil polyester with one side reflective	1/32", 1/23"
2P2	2 mil polyester with two sides reflective	1/69", 1/32", 1/23"
1P2	1 mil polyester with two sides reflective	1/69"
9910Y	Scotchlite reflective material - 9910 silver industrial wash fabric (one side reflective)	1/23"

Retroreflective Performance

The coefficient of retroreflection (R_A) 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 for Scotchlite reflective material - 8710 silver transfer film.

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
2P1	Silver	White
2P2	Silver	White
1P2	Silver	White
9910Y	Silver	White

Physical Performance

Scotchlite reflective material - yarns have the following typical properties:

Product Number	Elongation	Breaking Strength	Yield Point
2P1 1/32"	70%	550 grams	75 grams
2P1 1/23"	55%	750 grams	100 grams
2P2 1/69"	35-40%	250 grams	15-20 grams
2P2 1/32"	60%	550 grams	75 grams
2P2 1/23"	60%	800 grams	100 grams
1P2 1/69"	30%	140 grams	15-20 grams
9910Y	approx. 10%	2.4 kgs	NA

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, fabric construction and maintenance. Users should test reflective material to satisfy conformance to their own requirements.

Application Instructions

3M™ Scotchlite™ Reflective Material - Yarns are designed for use in fabrics and trims, webbing, rope and laces. These yarns have a rectangular cross section with the width (reflective surface) always being wider than the yarn thickness. One-sided reflective yarns may flip during the manufacturing process allowing the non-reflective surface to be exposed. In cases where this cannot be controlled, use the two-sided reflective yarn.

Note: End breaks occasionally occur during slitting and are fixed by putting knots into the yarn. Some spools may contain knots.

Care and Maintenance Instructions

Important: Test each application according to appropriate care instructions required for the finished product. Actual life of Scotchlite reflective material - yarns depends on cleaning method and wear conditions. For 3M™ Scotchlite™ Reflective Material - 9910Y Silver Industrial Wash Yarn refer to 3M™ Scotchlite™ Reflective Material - 9910 Silver Industrial Wash Fabric Technical Data Sheet.

Wash: Machine wash warm, 40°C (105°F)



Bleach: Do not bleach



Dry: Tumble dry low



Iron: Use cool iron, 110°C (230°F)



Dry-clean: Dry-clean, perchloroethylene



Product Availability

Scotchlite reflective material - yarns are available on spools with the following standard widths and are sold by the pound.

Product Number	Width	Yards/pound (typical)	Yards/spool (typical)
2P1	1/32"	2400	1500
	1/23"	1750	1200
2P2	1/69"	3050	2400
	1/32"	1400	1200
	1/23"	1000	900
1P2	1/69"	3300	2400
9910Y	1/23"	1350	1000

Order and Product Information

To order 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 spools in their original shipping cartons. Do not store spools upright because the yarn may shift, causing trapped ends.

Important Notice to Purchaser:

3M makes the following limited warranty in place of any others, express or implied, including any implied warranties of MERCHANTABILITY or fitness for a particular purpose or any implied warranty commonly found in the industry: 3M shall replace or, at its option, refund the price paid 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 converter or end product manufacturer must determine that the Products are suitable for the intended use and are compatible with other component materials. Purchaser 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. **Neither 3M nor any 3M authorized converter shall be liable for any incidental, special, or consequential damages relating to the use or inability to use the Products regardless of legal theory asserted.**



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