

# SewGlo™ ILLUMINATED THREAD

## TESTING DATA REPORT

*This report summarizes heat resistance, abrasion, aging, and automotive durability testing conducted on SewGlo™ Illuminated Thread. All data should be treated as reference values. Unless expressly agreed in writing, these values are not guaranteed specifications for the material. Data was obtained from tests conducted on standard samples at room temperature unless otherwise noted.*

### HEAT RESISTANCE AND ABRASION TESTING

Test Type	Sample Form	Test Conditions	Test Result
Heat Resistance	Bare yarn	110°C, 168 hours	Slight discoloration; 20% brightness reduction
	Leather-stitched accessory	Mold temp 130°C, pressure 315t, 90 seconds	Minor deformation; normal light emission
	Bare yarn	180°C, 4 minutes	No visible change; 10% brightness reduction
Martindale Abrasion(GB/T 21196.2-2007Method A, 795g)	Leather-stitched thread	2,000 cycles	Slight surface wear; normal light emission
		3,000 cycles	Visible surface wear; normal light emission
	Knitted luminescent fabric	3,000 cycles	Slight surface wear; normal light emission
		8,000 cycles	Visible surface wear; normal light emission

*Key takeaway: SewGlo™ thread maintains functional light emission across all heat exposure and abrasion scenarios tested. Brightness reduction of 10-20% occurs only at extreme heat thresholds (110°C+ sustained or 180°C brief). Abrasion causes surface coating wear but does not interrupt electrical function up to 8,000 Martindale cycles on knitted fabric.*

### AUTOMOTIVE QUALIFICATION TESTING

Test Item	Test Conditions	Test Result
Photo Aging	Xenon lamp aging: 350 kj/m <sup>2</sup>	No appearance change
Heat Aging	Temperature 100°C, 14 days	No appearance change
Abrasion (Gakushin)	1 kg load, 6,000 cycles	Coating slightly worn; lights normally
Abrasion (Taber)	750g / 1 kg load, 10,000 cycles	Coating slightly worn; lights normally
High Temp and Humidity	70°C, 95% humidity, 7 days	Slightly sticky surface; meets standard
Breaking Point	Varies by thread variant	3-60N (LT to HD)

*Key takeaway: All automotive qualification criteria passed. Photo and heat aging produce no visible appearance change. High-temperature and high-humidity exposure shows a surface stickiness effect that remains within acceptable limits. Abrasion under Gakushin and Taber protocols results in surface coating wear only; illumination function is maintained throughout.*

**SUMMARY**

SewGlo™ thread maintains illumination function across photo aging, heat aging, abrasion (Gakushin and Taber), and high-temperature / high-humidity conditions. Breaking strength ranges from 3N (LT) to 60N (HD), depending on variant. For XR variant specifications, contact Ellumiglow directly.

For full technical datasheet specifications, refer to the SewGlo™ Technical Specification document or contact info@ellumiglow.com.