

Thermal Transfer Printable Heat Shrink Tube

PRODUCT SPECIFICATIONS:

Description:

Print Technology	Thermal Transfer
Material	Irradiated cross-linked flexible flame-retarded polyolefin
Standard Colors	White, Yellow, Black, Red
Service Temperature Range (printing)	From 5 to 35 degrees C
Recommended Application Temperature	15 degrees C or more
Storage Condition Range	From -10 to 40 degrees C
Flame-retarded	PBDE/PBB-free

Details

Model No.	Diameter	Supplied (mm)		Recovered (mm)		Longitudinal change ratio
		Inside diameter	Wall thickness	Inside diameter	Wall thickness	
205STBWPX, 205STBYPX 205STWBPX, 205STBRPX	5mm	5.9+/-0.2	0.15	Less than 3.0	More than 0.25	More than -15%
211STBWPX, 211STBYPX 211STWBPX, 211STBRPX	11mm	11.0+/-0.5	0.15	Less than 5.6	More than 0.28	
214STBWPX, 214STBYPX	14mm	14.3+/-1.0	0.18	8.00	0.28	-
221STBWPX, 221STBYPX	21mm	21.0+/-1.5	0.22	11.00	0.40	-

APPLICATIONS

Wire and cable identification

Insulation, protection and reinforcement for termination and joints of electric wire.

Color identification for wire and cable

REGULATORY/AGENCY APPROVALS

UL: Epson Heat Shrink Tube tape cartridge got an approval of UL224 by UL repackage product program.

Rating temp.: 125 degrees C / Rating voltage: 300V / Flammability: VW-1.

You can see the details of the original certified product on UL file E75077. It is available on UL.com.

RoHS: Epson Heat Shrink Tube is RoHS compliant to Directive (2011/65/ EU) and (Annex II (EU) 2015/863) established on June 8, 2011.

PROPERTIES

Properties	Test method	Average result
Weatherability	Repeat below 1 to 4 for 55 hours / 110 hours. 1. Irradiation for 10 hours 1.24kW/m ² irradiance, B.P.T 63 degrees C and 50% RH 2. Spray for 1 minute 3. Dark and condensation for 1 hour 4. Spray for 1 minute 55 hours / 110 hours acceleration test equals to 1 year / 2 years of environment of Japan in metaling weather meter machine (SUGA M6T).	No visible effect
Short High service temperature	Putting on stainless rod for 2 hours at	
	200/225/250 degrees C	Printed text is legible but some discoloration on tube.
	150 degrees C	No visible effect
High service temperature	Putting on stainless rod at 50/100 degrees C for 240 hours	No visible effect
Low Service Temperature	Putting on stainless rod	No visible effect
	-70/-30 degrees C for 72 hours	
	0 degrees C for 240 hours	
Abrasion Resistance	1. 50 cycles on 500gf pressure by Japanese 10 Yen coin	Readable
	2. 50 cycles on 2kgf pressure by plastic eraser.	Readable but slight removal of text.

Properties	Items	Requirements	Typical values *1
Mechanical	Tensile strength (before aging)	min. 10.4MPa	15.2MPa
	Tensile strength (after aging)	158 degrees C x 7 days, min. 7.3MPa	16.0MPa

	Elongation (before aging)	min. 200%	350%
	Elongation (after aging)	158 degrees C x 7 days, min. 100%	350%
	Heat shock	250 degrees C x 4 hours, no crack	Pass
	Cold bend	-30 degrees C x 1 hour, no crack	Pass
Electrical	Dielectric withstand (before aging)	AC2.5kV x 60 sec., no breakdown	Pass
	Dielectric withstand (after aging)	158 degrees C x 7 days, AC2.5kV x 60 sec., no breakdown	Pass
	Dielectric breakdown (before aging)	min. AC2.5kV	12.6kV
	Dielectric breakdown (after aging)	158 degrees C x 7 days, min. 50% of original and min. AC2.5kV	Pass
	Volume resistivity	min. $1.0 \times 10^{14} \Omega \cdot \text{cm}$	$2.5 \times 10^{16} \Omega \cdot \text{cm}$
Chemical	Corrosion against bare copper	158 degrees C x 7 days, no corrosion after leaving under 95% humidity, 23 degrees C x 24 hours	Pass
	Stability against copper	158 degrees C x 7 days, elongation min. 100% after leaving under 95% humidity, 23 degrees C x 24 hours	342%
	Flammability	Flame-retarded, pass VW-1	Pass

*1: For reference use only

CHEMICAL/ SOLVENT RESISTANCE

Chemical reagents	Test method	Results
Toluene	Attach to glass rod, then sink in each chemical / solvent for 2 hours	Printed text is legible but tube came away from rod.
Hexane		Printed text is legible but tube came away from rod.
Ethanol		No visible effort
Acetone		No visible effort
Mineral sprit		Printed text is legible but tube came away from rod.
0.1N Hydrochloric acid		No visible effort
0.1 N Sodium hydroxide		No visible effort
Ethyl acetate		Printed text is legible but tube came away from rod.
Engine oil		No visible effort

Note:

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Product availability may vary by country. Please refer to your local Epson office for full details.

Note that the information about the characteristics, such as numeric values, described in this document are the evaluation results for information only, not for guarantees.