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Technical datasheet

Heat Shrink Tubes

HSR 3000 - Polyolefin

1. Product description

3M™ HSR 3000 is a range of flexible, thin walled RoHS Heat Shrink Tubes, made of crosslinked Halogen free Polyolefin. HSR 3000 provides good insulation protection in various industrial applications. They are also suitable for cable marking and identification applications. HSR 3000 tubes have a 3:1 shrink ratio and are available in the following colours: clear, black, red, yellow, blue, white, green, grey and green/yellow striped.

2. Typical properties

2.1 Technical Information

Physical properties	Typical value	Requirement	Test method
Colour	Clear, Black, Red, Yellow, Blue, White, Green, Grey, Green/Yellow striped		
Shrink ratio	3:1		
Tensile strength	25 N/mm^2	>10	IEC 60684-2-19.1
Elongation at break	540%	>250	IEC 60684-2-19.2
Longitudinal change	-5-0%	-10<>+5	IEC 60684-2-9
Concentricity supplied (total wall)	80%	>65	IEC 60684-2-3
Concentricity fully recovered (outer wall)	90%	>85	IEC 60684-2-3
Secant modulus	80 N/mm^2	50<>175	IEC 60684-2-19.4
Relative density	0.92 g/cm^3	-	IEC 60684-2-4

Thermal tests	Typical value	Requirement	Test method
Continuous operating temperature	-55<>135°C		
Shrink temperature	135<>280°C		
Heat shock		4 hrs at 200°C	IEC 60684-2-6
Tensile strength	25 N/mm^2	>10	IEC 60684-2-19
Elongation at break	540%	>200	IEC 60684-2-19
Low temperature flexibility	Pass	4 hrs at -55°C No cracking after bending	IEC 60684-2-14
Copper corrosion	Pass	No corrosion	IEC 60684-2-33
Flammability	Not self-extinguishing	C (30s, 75mm)	IEC 60684-2-26

Electrical tests	Typical value	Requirement	Test method
Volume resistivity	10^{14} Ωm	>10^{12} at room temp.	IEC 60684-2-23
Breakdown voltage	34 kV/mm	>21	IEC 60684-2-21

Chemical tests	Typical value	Requirement	Test method
Selected fluids according to table 5 of IEC 60684-3-212 at 23 °C, 24 hrs	Pass N/mm^2 / %	Tensile/elongation >7 / >200	IEC 60684-2-36

3. User information

3.1 Product guide

Part number	Expanded ID min. (mm)	Recovered ID max. (mm)	Recovered wall thickness (nominal) (mm)
1.5	1.5	0.5	0.45
3.0	3.0	1.0	0.55
6.0	6.0	2.0	0.65
9.0	9.0	3.0	0.75
18.0	18.0	6.0	0.75
24.0	24.0	8.0	1.00

3.2 Agency approvals and self certifications

- Halogen free

3.3 Shelf life and storage

This product has a 5-year shelf life from date of manufacture when stored in a humidity controlled area (10°C to 27°C and <75% relative humidity).

4. Additional information

To request additional product information, see address below.

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