

Oranergy

Orange Dual-wall Heat Shrink Tubing for Electric Vehicles
橙色电动汽车用双壁热缩管

高压识别, 电动汽车专用叠层母排
High-Voltage Identification, EV Dedicated Laminated Busbars

橙色电动汽车用双壁热缩管 (Oranergy-D) 专为新能源汽车高压系统设计, 采用醒目的橙色外观, 便于高压电路识别。其阻燃和高介电强度特性, 能在高温、高压及严苛环境下持续提供绝缘保护。Oranergy-D能牢固粘附于各类金属和绝缘材料, 适用于动力电缆、高压连接及关键部件的绝缘与密封, 助力电动汽车系统实现安全、稳定的长期运行, 是高压电缆及部件可靠防护的最佳选择。

Oranergy-D dual wall orange heat shrink tubing is specifically engineered for high-voltage systems in electric vehicles, with a distinctive orange color for easy circuit identification. It offers outstanding flame retardancy and dielectric strength, ensuring reliable insulation and protection for cables and components under high temperature and voltage conditions. Oranergy-D adheres well to various substrates, including metals and insulation materials, making it ideal for power cables, high-voltage joints, and critical component sealing. It is the optimal solution for long-term safety and stability in electric vehicle applications.



产品特性与优势 Features and benefits

性能 Property	指标要求 Requirement	测试方法 Test Method	典型值 Typical Data
操作温度范围 Operating Temperature	/	/	-40°C to +105°C
最低收缩温度 Min. Shrink Temperature	/	/	+110°C
完全收缩温度 Full recovery temperature	/	/	+130 °C
长度变化率 Longitudinal change	+1 to -5%	ASTM D 2671	通过 Pass
抗张强度 Tensile strength	≥10.3MPa	ASTM D 2671	≥10.3MPa
断裂伸长率 Elongation at break	≥200%	ASTM D 2671	≥200%
老化后的抗张强度 Tensile strength after aging	初始值的70% 70% of initial value	ASTM D 2671 (158°C/168 hrs)	≥70%
老化后断裂伸长率 Elongation at break after aging	≥100%	ASTM D 2671 (158°C/168 hrs)	≥100%
最大正割模量 Maximum secant modulus(2%)	≤172 MPa	ASTM D 2671	≤172 MPa
热冲击 Heat shock	无裂痕 No Cracking	ASTM D 2671 (250°C/4 hrs)	无裂痕 No Cracking
老化后绝缘耐压 Dielectric voltage withstand after aging (After 158°C/168 hrs)	无击穿 No Breakdown	IEC 60243-1 (2500V, 1hr)	无击穿 No Breakdown
老化后绝缘强度 Dielectric strength after aging (After 158°C/168 hrs)	Φ≤19: ≥19.7kV/mm Φ > 19: ≥15kV/mm	UL224 ASTM D 2671	Φ≤19: ≥19.7kV/mm Φ > 19: ≥15kV/mm
低温柔软性 Low temperature flexibility	无裂痕 No Cracking	ASTM D 2671 (-55°C/4 hrs)	无裂痕 No Cracking
体积电阻率 Volume resistivity	≥10 ¹³ Ω·cm	ASTM D 2671	≥10 ¹³ Ω·cm
阻燃性能 Flammability	VW-1	UL224	VW-1
铜腐蚀性 Copper corrosion	无腐蚀 No corrosion	ASTM D 2671 (150°C/16 hrs)	无腐蚀 No corrosion
铜稳定性 Copper corrosion	无腐蚀 No corrosion	ASTM D 2671 (158°C/168 hrs)	无腐蚀 No corrosion
吸水率 Water Absorption	< 0.5%	IEC 62 (23°C/24 hrs)	< 0.5%

- 收缩比3:1
- 橙色 (RAL 2003), 便于EV高压回路识别
- 阻燃半柔性结构, 优异绝缘及高介电强度
- 耐高温、耐磨损、耐热老化及水浸
- 对铝、铜、XLPE、PVC等材料粘附力强, 易安装
- Shrink ratio 3:1
- Orange (RAL 2003) for easy EV high-voltage identification
- Flame-retardant, semi-flexible, excellent insulation and dielectric strength
- Withstands high temperatures, abrasion, heat aging, and water immersion
- Strong adhesion to aluminum, copper, XLPE, PVC; easy to install

符合标准 Standards

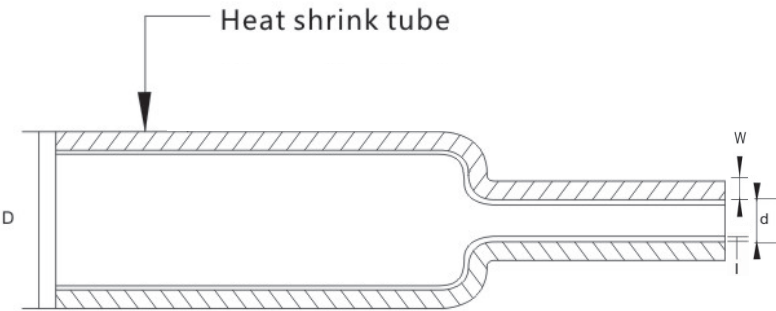
- UL224 (VW-1);
- RoHS;
- REACH;

颜色 COLOR



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标准壁厚 Standard wall thickness						
收缩比 Shrink Ratio	编号 Part No.	规格 Size (Φ mm)	收缩前 As supplied (mm)	收缩后 After recovered(mm)		
			最小内径 I.D.min (D)	最小内径 I.D.min (d)	总壁厚 W.T (w+l)	胶厚 Adhesive thickness (l)
3:1	Oranergy-D-9	9	9.00	3.00	1.40±0.25	≥0.56
	Oranergy-D-12	12	12.00	4.00	1.78±0.36	≥0.58
	Oranergy-D-19	19	19.00	6.00	2.25±0.50	≥0.58
	Oranergy-D-24	24	24.00	8.00	2.54±0.50	≥0.79
	Oranergy-D-40	40	40.00	13.00	2.54±0.50	≥0.86

接受特殊尺寸及颜色定制需求, 技术参数如有变更, 恕不另行通知。最低订购量 (MOQ) 可能与包装数量有所不同。
Custom sizes and colors are available upon request. Technical specifications are subject to change without prior notice. Minimum order quantities (MOQ) may differ from standard packaging quantities.

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