

Military & Aerospace Application Cables
Jacket Material Solution (TPU)



Application Advantages

Low smoke and halogen-free TPU

- 1.The innovative flame retardant formula, greatly improves the long being problem that, the smoke density and light transmittance of the conventional halogen-free flame retardant TPU in the cable sheath application fail to meet the requirement of test.** (The density of non-flame smoke is 152, the density of flame smoke is 69).
- 2.Extreme temperature Resistance:**
Supporting cable products passed high and low temperature cycling test at -50°C~125°C and rigorous low temperature winding (-50°C) and low temperature impact test (-50°C) .
- 3.Excellent wear resistance:**
polar materials, high cohesion, abrasion resistance significantly superior to conventional low smoke halogen-free polyolefin materials (LSZH);
- 4.High mechanical properties:**
Tensile strength ($\geq 15\text{Mpa}$) , tear strength ($\geq 40\text{N}$) and modulus of elasticity are significantly superior to the traditional low smoke halogen-free polyolefin (LSZH), which is more suitable for high-standard military and aerospace cable applications.
- 5.Hydrolysis resistance:**
Supporting cables pass 1000/2000 Hrs hydrolysis resistance test (85°C/85%RH , 1000/2000Hrs) ;
- 6.Grinding (frosted) appearance:**
even and fine grinding (frosted) surface, not only endow a higher-grade texture, also meet the extinction requirement for military.

Halogen-free flame retardant and mould-resistant TPU

- 1.UL yellow card certification V0 grade polyether TPU, fully support cable/optical cable pass the UL 758/1581 VW-1, IEC 60332 single vertical combustion test;**
- 2.One of the very few TPU materials on the market, can pass the 0-1 grade mold resistance test of the Chinese Military Standard (GJB 150.01A) (test reports attached) ;**
- 3.Extreme temperature resistance:**
Supporting cable products passed high and low temperature cycling test at -50°C~125°C, rigorous low temperature winding (-50°C) , low temperature impact (-50°C) test, etc;
- 4.High wear resistance:**
polar material, high cohesive energy, excellent wear resistance than conventional low smoke halogen-free polyolefin material (LSZH);
- 5.Hydrolysis resistance:**
Supporting cables pass 1000Hrs hydrolysis resistance test (85°C/85%RH , 1000Hrs) ;
- 6.Grinding (frosted) appearance:**
even and fine grinding (frosted) surface, not only endow a higher-grade texture, also meet the extinction requirement for military.

Properties Datasheet

					Model	Model	Model
General characteristics	Material properties	Testing standard	Test condition	Units	1085TM	1185D-ENB	1195D-ESL
	Material category	-	-	-	TPU Polyether	TPU Polyether	TPU Polyether
	Appearance (light/Semi-matte/Frosted)	-	-	-	Frosted	Frosted	Semi-matte
	Extrusion/injection	-	-	-	Extrusion	Extrusion	Extrusion
Physical characteristics	Hardness	DIN 53505	155	Shore A	87	87	95
	Proportion	DIN 53479	-	g/cm³	1.17	1.17	1.43
	Melt index	DIN 53735	230°C/5kg	g/10min	2	2	8
	Brittle temperature	ISO 812	-	°C	-60	-60	-50
Mechanical properties	Elongation	DIN 53504	200mm/min	%	650	600	200
	Tensile Strength	DIN 53504	200mm/min	Mpa	30	30	13
	Tearing strength	DIN 53515	500mm/min	KN/m	70	70	30
Hot air aging	Elongation retention rate	DIN 53504	158°C/168h	%	≥75 (113°C)	≥75 (113°C)	
	Tensile strength retention	DIN 53504	158°C/168h	%	≥75 (113°C)	≥75 (113°C)	
Electrical performance	Volume resistivity	ASTM D257	-	Ohm-cm	≥1.0E+11	≥1.0E+11	≥1.0E+11
Combustion performance	Vertical burning test	UL 94	3.0/6.0mm	-	V0(6.0mm)	V2(3.0mm)	
Feature					Uniform surface sanding effect	Through GJB 150.10a grade 0~1 mildew resistant grade	Non - flame smoke density 152, flame smoke density 69



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