

ULTEM™ STM1600 resin

Polyether Imide

SABIC Innovative Plastics

Message:

Siltem 1600 is a flexible copolymer designed for wire and cable applications. It offers a halogen free (according VDE 0472) flame retardant solution that also offers low smoke emission and toxicity. It is an amber colored transparent material that can be selfcolored and easily processed on conventional equipment. The material may also have a fit in flexible profiles or injection molded parts.

General Information			
Features	Low smoke		
	Low toxicity		
	Copolymer		
	Good flexibility		
	Halogen-free		
	Flame retardancy		
Uses	Wire and cable applications		
	Profile		
RoHS Compliance	RoHS compliance		
Appearance	Transparent amber		
Processing Method	Injection molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.19	g/cm ³	ASTM D792, ISO 1183
Melt Mass-Flow Rate (MFR) (295°C/6.6 kg)	8.6	g/10 min	ASTM D1238
Molding Shrinkage - Flow (3.20 mm)	0.86 - 1.0	%	Internal method
Water Absorption			ISO 62
23°C, 24 hr	0.58	%	ISO 62
Saturated, 23°C	0.58	%	ISO 62
Hardness	Nominal Value	Unit	Test Method
Durometer Hardness (Shore D)	72		ASTM D2240
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus	1380	MPa	ISO 527-2/1
Tensile Stress			ISO 527-2/50
Yield	42.0	MPa	ISO 527-2/50
Fracture	41.0	MPa	ISO 527-2/50
Tensile Strain			ISO 527-2/50
Yield	10	%	ISO 527-2/50
Fracture	74	%	ISO 527-2/50
Flexural Modulus ¹	1250	MPa	ISO 178
Flexural Stress	55.0	MPa	ISO 178

Taber Abrasion Resistance (1000 Cycles, 1000 g, CS-17 Wheel)	50.0	mg	ASTM D1044
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact ²			ISO 180/1A
-30°C	25	kJ/m ²	ISO 180/1A
23°C	36	kJ/m ²	ISO 180/1A
Thermal	Nominal Value	Unit	Test Method
Heat Deflection Temperature ³ (0.45 MPa, Unannealed, 64.0 mm Span)	144	°C	ISO 75-2/Bf
Glass Transition Temperature	195	°C	DSC
Vicat Softening Temperature	167	°C	ISO 306/B120
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	> 1.0E+15	ohms	ASTM D257
Volume Resistivity	> 1.0E+16	ohms · cm	ASTM D257
Dielectric Strength (3.20 mm, in Oil)	17	kV/mm	ASTM D149
Dielectric Constant			ASTM D150
100 Hz	3.14		ASTM D150
100 kHz	3.10		ASTM D150
1 MHz	3.02		ASTM D150
Dissipation Factor			ASTM D150
100 Hz	0.014		ASTM D150
100 kHz	6.4E-3		ASTM D150
1 MHz	5.5E-3		ASTM D150
Flammability	Nominal Value	Unit	Test Method
Flame Rating (1.60 mm, Testing by SABIC)	V-0		UL 94
Oxygen Index	48	%	ASTM D2863
Injection	Nominal Value	Unit	
Drying Temperature	105	°C	
Drying Time	4.0 - 6.0	hr	
Drying Time, Maximum	8.0	hr	
Suggested Max Moisture	0.020	%	
Suggested Shot Size	40 - 60	%	
Rear Temperature	310 - 320	°C	
Middle Temperature	310 - 320	°C	
Front Temperature	310 - 320	°C	
Nozzle Temperature	310 - 320	°C	
Processing (Melt) Temp	310 - 320	°C	
Mold Temperature	105 - 115	°C	
Back Pressure	0.300 - 0.700	MPa	
Screw Speed	50 - 100	rpm	
Vent Depth	0.025 - 0.076	mm	
NOTE			
1.	2.0 mm/min		

2.	80*10*4
3.	80*10*4 mm

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Recommended distributors for this material

Susheng Import & Export Trading Co.,Ltd.

Tel: +86 21 5895 8519

Phone: +86 13424755533

Email: sales@su-jiao.com

No. 215, Lianhe North Road, Fengxian District, Shanghai, China

