

ULTEM™ RESIN STM1600

REGION EUROPE

DESCRIPTION

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.

TYPICAL PROPERTY VALUES

Revision 20180905

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Hardness, Shore D	72	-	ASTM D 2240
Taber Abrasion, CS-17, 1 kg	50	mg/1000cy	ASTM D 1044
Tensile Stress, yield, 50 mm/min	42	MPa	ISO 527
Tensile Stress, break, 50 mm/min	41	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	10	%	ISO 527
Tensile Strain, break, 50 mm/min	74	%	ISO 527
Tensile Modulus, 1 mm/min	1380	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	55	MPa	ISO 178
Flexural Modulus, 2 mm/min	1250	MPa	ISO 178
IMPACT			
Izod Impact, notched 80*10*4 +23°C	36	kJ/m ²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	25	kJ/m ²	ISO 180/1A
THERMAL			
Vicat Softening Temp, Rate B/120	167	°C	ISO 306
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	144	°C	ISO 75/Bf
PHYSICAL			
Specific Gravity	1.19	-	ASTM D 792
Mold Shrinkage, flow, 3.2 mm	0.86 – 1.01	%	SABIC method
Melt Flow Rate, 295°C/6.6 kgf	8.6	g/10 min	ASTM D 1238
Density	1.19	g/cm ³	ISO 1183
Water Absorption, 23°C/24hrs	0.58	%	ISO 62-1
Water Absorption, (23°C/sat)	0.58	%	ISO 62
Matrix Tg	195	°C	DMA
ELECTRICAL			
Volume Resistivity	>1.E+16	Ohm-cm	ASTM D 257
Surface Resistivity	>1.E+15	Ohm	ASTM D 257
Dielectric Strength, in oil, 3.2 mm	16.6	kV/mm	ASTM D 149
Relative Permittivity, 100 Hz	3.14	-	ASTM D 150
Relative Permittivity, 100 kHz	3	-	ASTM D 150
Relative Permittivity, 1 MHz	3.02	-	ASTM D 150
Dissipation Factor, 100 Hz	0.014	-	ASTM D 150
Dissipation Factor, 100 kHz	0.0064	-	ASTM D 150
Dissipation Factor, 1 MHz	0.0055	-	ASTM D 150

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FLAME CHARACTERISTICS			
UL Compliant, 94V-0 Flame Class Rating	1.6	mm	UL 94 by SABIC-IP
Oxygen Index (LOI)	48	%	ASTM D 2863
INJECTION MOLDING			
Drying Temperature	105	°C	
Drying Time	4 – 6	hrs	
Drying Time (Cumulative)	8	hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	310 – 320	°C	
Nozzle Temperature	310 – 320	°C	
Front - Zone 3 Temperature	310 – 320	°C	
Middle - Zone 2 Temperature	310 – 320	°C	
Rear - Zone 1 Temperature	310 – 320	°C	
Mold Temperature	105 – 115	°C	
Back Pressure	0.3 – 0.7	MPa	
Screw Speed	50 – 100	rpm	
Shot to Cylinder Size	40 – 60	%	
Vent Depth	0.025 – 0.076	mm	

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