



ULTEM™ Resin STM1500

Americas: COMMERCIAL

Siloxane polyetherimide block copolymer. Wire and cable use. Strength and flexibility.

TYPICAL PROPERTIES ¹	TYPICAL VALUE	Unit	Standard
MECHANICAL			
Tensile Stress, yld, Type I, 50 mm/min	280	kgf/cm ²	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	100	%	ASTM D 638
Flexural Modulus, 2.6 mm/min, 100 mm span	3900	kgf/cm ²	ASTM D 790
Taber Abrasion, CS-17, 1 kg	26	mg/1000cy	ASTM D 1044
PHYSICAL			
Specific Gravity	1.18	-	ASTM D 792
Moisture Absorption (est)	<0	%	ASTM D 570
Melt Flow Rate, 295°C/6.6 kgf	12	g/10 min	ASTM D 1238
Matrix Tg	168	°C	DMA
Halogen Content	0	%	SABIC Method
ELECTRICAL			
Volume Resistivity	4.1E+16	Ohm-cm	ASTM D 257
Surface Resistivity	>1.E+15	Ohm	ASTM D 257
Dielectric Strength, in air, 3.2 mm	16.1	kV/mm	ASTM D 149
Dielectric Strength, in oil, 3.2 mm	16.3	kV/mm	ASTM D 149
Relative Permittivity, 50/60 Hz	3.01	-	ASTM D 150
Relative Permittivity, 100 kHz	2.7	-	ASTM D 150
Dissipation Factor, 50/60 Hz	0.01	-	ASTM D 150
Dissipation Factor, 100 kHz	0.0056	-	ASTM D 150
FLAME CHARACTERISTICS			
OSU peak heat release rate (5 minute test)	140	kW/m ²	FAR 25.853
Oxygen Index (LOI)	46	%	ASTM D 2863
WIRE AND CABLE - UL 1581 tested on 2.0mm wire with 0.12mmx20 stranded copper			
Cable Wall Thickness	10	mil	-
Tensile Strength (Wire/Cable), break	-	-	SABIC (UL1561)

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(2) Only typical data for selection purposes. Not to be used for part or tool design.
(3) This rating is not intended to reflect hazards presented by this or any other material under actual fire conditions.

(4) Internal measurements according to UL standards.

(5) Measurements made from laboratory test coupon. Actual shrinkage may vary outside of range due to differences in processing conditions, equipment, part geometry and tool design. It is recommended that mold shrinkage studies be performed with surrogate or legacy tooling prior to cutting tools for new molded article.

(6) Needs hard coat to consistently pass 60 sec Vertical Burn.

Source GMD, last updated:

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TYPICAL PROPERTIES ¹	TYPICAL VALUE	Unit	Standard
WIRE AND CABLE - UL 1581 tested on 2.0mm wire with 0.12mmx20 stranded copper			
Initial	380	kgf/cm ²	-
Aged 1 week at 135°C	390	kgf/cm ²	-
Tensile Strength Retention	102	%	-
Tensile Elongation (Wire/Cable), break	-	-	SABIC (UL1561)
Initial	400	%	-
Aged 1 week at 135°C	370	%	-
Tensile Elongation Retention	94	%	-
COMBUSTION CORROSIVITY			
Corrosion, 1 hr (2500 angstroms max)	40	angstrom	ASTM E5.2170
Corrosion, 24 hrs	122	angstrom	ASTM E5.2170
Corrosion, 6 days	183	angstrom	ASTM E5.2170

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PROCESSING PARAMETERS	TYPICAL VALUE	Unit
Injection Molding		
Drying Temperature	105	°C
Drying Time	4 - 6	hrs
Drying Time (Cumulative)	8	hrs
Maximum Moisture Content	0.02	%
Melt Temperature	300 - 320	°C
Nozzle Temperature	300 - 320	°C
Front - Zone 3 Temperature	295 - 315	°C
Middle - Zone 2 Temperature	295 - 315	°C
Rear - Zone 1 Temperature	295 - 315	°C
Mold Temperature	65 - 95	°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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