SILTEM™ RESIN STM1500

REGION AMERICAS

DESCRIPTION

SILTEM™ STM1500 resin is a flexible polyetherimide(PEI)-siloxane copolymer designed for wire and cable applications. The material is RoHS compliant and 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 processing equipment. The material may also be used for extrusion of e.g. corrugated pipes and profiles as well as flexible injection molded parts.

ISCC+ certified renewable bio-based solutions are available for this grade via differentiated color nomenclature.

INDUSTRY	SUB INDUSTRY
Automotive	Aerospace
Electrical and Electronics	Energy Management
Industrial	Electrical, Material Handling, Defense
Mass Transportation	Rail

TYPICAL PROPERTY VALUES

Revision 20231113

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Stress, yld, Type I, 50 mm/min	28	MPa	ASTM D638
Tensile Strain, brk, Type I, 50 mm/min	100	%	ASTM D638
Flexural Modulus, 2.6 mm/min, 100 mm span	380	MPa	ASTM D790
Taber Abrasion, CS-17, 1 kg	26	mg/1000cy	ASTM D1044
PHYSICAL			
Mold Shrinkage, flow	1.35	%	SABIC method
Mold Shrinkage, xflow	1.43	%	SABIC method
Specific Gravity	1.18	-	ASTM D792
Moisture Absorption (est)	0	%	ASTM D570
Melt Flow Rate, 295°C/6.6 kgf	12	g/10 min	ASTM D1238
Matrix Tg	168	°C	DMA
Halogen Content	0	%	SABIC method
ELECTRICAL			
Volume Resistivity	4.1E+16	Ω.cm	ASTM D257
Surface Resistivity	>1.E+15	Ω	ASTM D257
Dielectric Strength, in air, 3.2 mm	16.1	kV/mm	ASTM D149
Dielectric Strength, in oil, 3.2 mm	16.3	kV/mm	ASTM D149
Relative Permittivity, 50/60 Hz	3.01	-	ASTM D150
Relative Permittivity, 100 kHz	2.7	-	ASTM D150
Dissipation Factor, 50/60 Hz	0.01	-	ASTM D150
Dissipation Factor, 100 kHz	0.0056	-	ASTM D150
Comparative Tracking Index	175	V	IEC 60112
FLAME CHARACTERISTICS			
OSU peak heat release rate (5 minute test)	140	kW/m²	FAR 25.853
Oxygen Index (LOI)	46	%	ASTM D2863

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
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
Initial	37	MPa	-
Aged 1 week at 135°C	38	MPa	-
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
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	

DISCLAIMER