SILTEM™ Resin HUSTM1500

DESCRIPTION

SILTEM™ HUSTM1500 resin is a flexible polyetherimide(PEI)-siloxane copolymer. The intended use for this material is in medical devices and pharmaceutical applications. The material is biocompatible (ISO 10993) and Healthcare management of change applies.
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 self-colored and easily processed on conventional processing equipment. The material may be used for extrusion of e.g. tubing, catheters, cannulas, as well as flexible injection molded parts.

ISCC+ certified renewable bio-based solutions can be made available for this grade.

GENERAL INFORMATION	
Applications	Pharmaceutical Packaging & Drug Delivery, Surgical Devices, Healthcare, healthcare device
Features	Flame Retardant, Chemical Resistance, Good Processability, High Flow, Low Smoke and Toxicity, Thin Wall, Dielectrics, Amorphous, Healthcare, Flexible, Low Corrosivity, IR Transparent, Low Moisture Absorption, Low Specific Gravity, Bio-Renewable, Transparent/Translucent, Biocompatability-ISO10993, Healthcare/Formula lock, Non Cl/Br flame retardant, Non halogenated flame retardant, Dimensional stability, High temperature resistance, No PFAS intentionally added
Fillers	Unreinforced
Brands	SILTEM™
Polymer Types	Polyetherimide (PEI)
Processing Techniques	Compounding Extrusion, Film Extrusion, Injection Molding, Profile Extrusion, Extrusion, Compression molding, Injection compression molding, Pipe extrusion, Foam Extrusion
Regional Availability	Global

INDUSTRY	SUB INDUSTRY
Hygiene and Healthcare	Pharmaceutical Packaging and Drug Delivery, Surgical devices, General Healthcare, Patient Testing

TYPICAL PROPERTY VALUES

Revision 20260907

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Taber Abrasion, CS-17, 1 kg	60	mg/1000cy	SABIC method
Tensile Stress, yield, 50 mm/min	20	MPa	ISO 527
Tensile Stress, break, 50 mm/min	25	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	15	%	ISO 527
Tensile Strain, break, 50 mm/min	110	%	ISO 527
Tensile Modulus, 1 mm/min	590	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	20	MPa	ISO 178
Flexural Stress, break, 2 mm/min	18	MPa	ISO 178
Flexural Modulus, 2 mm/min	470	MPa	ISO 178
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
IMPACT			
Izod Impact, unnotched 80*10*4 +23°C	NB	kJ/m²	ISO 180/1U

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Izod Impact, unnotched 80*10*4 -30°C	NB	kJ/m²	ISO 180/1U
Izod Impact, notched 80*10*4 +23°C	25	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	15	kJ/m²	ISO 180/1A
THERMAL			
CTE, 23°C to 80°C, flow	1.1E-04	1/°C	ISO 11359-2
CTE, 23°C to 80°C, xflow	9.E-05	1/°C	ISO 11359-2
Ball Pressure Test, 75°C +/- 2°C	PASSES	-	IEC 60695-10-2
Vicat Softening Temp, Rate B/50	75	°C	ISO 306
Vicat Softening Temp, Rate B/120	78	°C	ISO 306
PHYSICAL			
Mold Shrinkage, flow	1.35	%	SABIC method
Mold Shrinkage, xflow	1.43	%	SABIC method
Mold Shrinkage on Tensile Bar, flow	1.2 – 1.4	%	SABIC method
Density	1.18	g/cm³	ISO 1183
Water Absorption, (23°C/saturated)	0.5	%	ISO 62-1
Melt Volume Rate			
320°C/2.16 kg	8	cm³/10 min	ISO 1133
Specific Gravity	1.18	-	ASTM D792
Moisture Absorption (est)	0.3	%	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	4.7E+14	Ω.cm	IEC 60093
Surface Resistivity, ROA	1.E+15	Ω	IEC 60093
Dielectric Strength, in oil, 3.2 mm	19	kV/mm	IEC 60243-1
Relative Permittivity, 100 Hz	3	-	IEC 60250
Dissipation Factor			
100 Hz	0.0091	-	IEC 60250
50/60 Hz	0.01	-	ASTM D150
100 kHz	0.0056	-	ASTM D150
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
Comparative Tracking Index	175	V	IEC 60112
FLAME CHARACTERISTICS			
UL Compliant, 94V-1 Flame Class Rating	1.6	mm	UL 94 by SABIC-IP
Glow Wire Flammability Index 960°C, passes at	3.2	mm	IEC 60695-2-12
Oxygen Index (LOI)	48	%	ISO 4589
OSU peak heat release rate (5 minute test)	140	kW/m²	FAR 25.853
Oxygen Index (LOI)	46	%	ASTM D2863
COMBUSTION CORROSIVITY			

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
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	100 – 110	°C	
Drying Time	6	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	
PROFILE EXTRUSION			
Barrel - Zone 1 Temperature	280 – 290	°C	
Barrel - Zone 2 Temperature	300 – 310	°C	
Barrel - Zone 3 Temperature	310 – 320	°C	
Barrel - Zone 4 Temperature	310 – 325	°C	
Hopper Temperature	60 – 100	°C	
Adapter Temperature	315 – 325	°C	
Die Temperature	300 – 320	°C	
Calibrator Temperature	60 – 80	°C	

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