ULTEM™ RESIN MD131

REGION AMERICAS

DESCRIPTION

Transparent, high flow Polyetherimide (Tg 217C). ECO Conforming. US FDA and EU Food Contact Compliant.

TYPICAL PROPERTY VALUES

Revision 20230607

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Stress, yld, Type I, 5 mm/min	110	MPa	ASTM D638
Tensile Stress, brk, Type I, 5 mm/min	105	MPa	ASTM D638
Tensile Strain, yld, Type I, 5 mm/min	7	%	ASTM D638
Tensile Strain, brk, Type I, 5 mm/min	60	%	ASTM D638
Tensile Modulus, 5 mm/min	3590	MPa	ASTM D638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	167	MPa	ASTM D790
Flexural Stress, yld, 2.6 mm/min, 100 mm span	165	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	3550	MPa	ASTM D790
Flexural Modulus, 2.6 mm/min, 100 mm span	3520	MPa	ASTM D790
Hardness, Rockwell M	109	-	ASTM D785
Taber Abrasion, CS-17, 1 kg	10	mg/1000cy	ASTM D1044
Tensile Stress, yield, 50 mm/min	105	MPa	ISO 527
Tensile Stress, break, 50 mm/min	85	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	6	%	ISO 527
Tensile Strain, break, 50 mm/min	60	%	ISO 527
Tensile Modulus, 1 mm/min	3200	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	160	MPa	ISO 178
Flexural Modulus, 2 mm/min	3300	MPa	ISO 178
Ball Indentation Hardness, H358/30	140	MPa	ISO 2039-1
IMPACT			
Izod Impact, unnotched, 23°C	1335	J/m	ASTM D4812
Izod Impact, notched, 23°C	32	J/m	ASTM D256
Izod Impact, notched, -30°C	35	J/m	ASTM D256
Izod Impact, Reverse Notched, 3.2 mm	1174	J/m	ASTM D256
Gardner, 23°C	33	J	SABIC method
Instrumented Dart Impact Total Energy, 23°C	33	J	ASTM D3763
Izod Impact, unnotched 80*10*4 +23°C	NB	kJ/m²	ISO 180/1U
Izod Impact, unnotched 80*10*4 -30°C	NB	kJ/m²	ISO 180/1U
Izod Impact, notched 80*10*4 +23°C	5	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	5	kJ/m²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	3	kJ/m²	ISO 179/1eA
THERMAL			
Vicat Softening Temp, Rate B/50	218	°C	ASTM D1525
HDT, 0.45 MPa, 3.2 mm, unannealed	205	°C	ASTM D648
HDT, 1.82 MPa, 3.2mm, unannealed	197	°C	ASTM D648

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
HDT, 0.45 MPa, 6.4 mm, unannealed	207	°C	ASTM D648
HDT, 1.82 MPa, 6.4 mm, unannealed	198	°C	ASTM D648
CTE, -40°C to 150°C, flow	5.5E-05	1/°C	ASTM E831
CTE, -40°C to 150°C, xflow	5.5E-05	1/°C	ASTM E831
Thermal Conductivity	0.22	W/m-°C	ASTM C177
Thermal Conductivity	0.21	W/m-°C	ISO 8302
CTE, 23°C to 150°C, flow	5.E-05	1/°C	ISO 11359-2
CTE, 23°C to 150°C, xflow	5.E-05	1/°C	ISO 11359-2
Ball Pressure Test, 125°C +/- 2°C	Passes	-	IEC 60695-10-2
Vicat Softening Temp, Rate A/50	215	°C	ISO 306
Vicat Softening Temp, Rate B/50	211	°C	ISO 306
Vicat Softening Temp, Rate B/120	212	°C	ISO 306
HDT/Be, 0.45MPa Edgew 120*10*4 sp=100mm	200	°C	ISO 75/Be
HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm	190	°C	ISO 75/Ae
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	190	°C	ISO 75/Af
PHYSICAL			
Specific Gravity	1.27	-	ASTM D792
Water Absorption, (23°C/24hrs)	0.25	%	ASTM D570
Water Absorption, (23°C/Saturated)	1.25	%	ASTM D570
Mold Shrinkage on Tensile Bar, flow	0.5 – 0.7	%	SABIC method
Mold Shrinkage, flow, 3.2 mm	0.5 – 0.7	%	SABIC method
Mold Shrinkage, xflow, 3.2 mm	0.5 – 0.7	%	SABIC method
Melt Flow Rate, 337°C/6.6 kgf	17.8	g/10 min	ASTM D1238
Density	1.27	g/cm³	ISO 1183
Water Absorption, (23°C/saturated)	1.25	%	ISO 62-1
Moisture Absorption (23°C / 50% RH)	0.7	%	ISO 62
Melt Volume Rate, MVR at 340°C/5.0 kg	13	cm³/10 min	ISO 1133
Melt Volume Rate, MVR at 360°C/5.0 kg	25	cm³/10 min	ISO 1133
ELECTRICAL			
Volume Resistivity	1.E+17	Ω.cm	ASTM D257
Dielectric Strength, in air, 1.6 mm	32.6	kV/mm	ASTM D149
Dielectric Strength, in oil, 1.6 mm	27.9	kV/mm	ASTM D149
Relative Permittivity, 1 kHz	3.15	-	ASTM D150
Dissipation Factor, 1 kHz	0.0013	-	ASTM D150
Dissipation Factor, 2450 MHz	0.0025	-	ASTM D150
Volume Resistivity	1.E+15	Ω.cm	IEC 60093
Surface Resistivity, ROA	>1.E+15	Ω	IEC 60093
Dielectric Strength, in oil, 0.8 mm	33	kV/mm	IEC 60243-1
Dielectric Strength, in oil, 1.6 mm	25	kV/mm	IEC 60243-1
Dielectric Strength, in oil, 3.2 mm	16	kV/mm	IEC 60243-1
Relative Permittivity, 1 MHz	2.9	-	IEC 60250
Dissipation Factor, 50/60 Hz	0.0005	-	IEC 60250
Dissipation Factor, 1 MHz	0.006	-	IEC 60250
Dissipation Factor, 2450 MHz	0.0025	-	IEC 60250
Comparative Tracking Index	150	V	IEC 60112
Comparative Tracking Index, M	100	V	IEC 60112

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Relative Permittivity, 50/60 Hz	2.9	-	IEC 60250
FLAME CHARACTERISTICS			
Oxygen Index (LOI)	44	%	ASTM D2863
Glow Wire Flammability Index 960°C, passes at	3.2	mm	IEC 60695-2-12
Oxygen Index (LOI)	47	%	ISO 4589
INJECTION MOLDING			
Drying Temperature	150	°C	
Drying Time	4 – 6	Hrs	
Drying Time (Cumulative)	24	Hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	350 – 400	°C	
Nozzle Temperature	345 – 400	°C	
Front - Zone 3 Temperature	345 – 400	°C	
Middle - Zone 2 Temperature	340 – 400	°C	
Rear - Zone 1 Temperature	330 – 400	°C	
Mold Temperature	135 – 165	°C	
Back Pressure	0.3 – 0.7	MPa	
Screw Speed	40 – 70	rpm	
Shot to Cylinder Size	40 – 60	%	
Vent Depth	0.025 – 0.076	mm	

ADDITIONAL PRODUCT NOTES

No PFAS intentionally added: The grade listed in this document does not contain PFAS intentionally added during Seller's manufacturing process and is not expected to contain unintentional PFAS impurities. Each user is responsible for evaluating the presence of unintentional PFAS impurities.

MORE INFORMATION

For curve data and CAE cards, please visit and register at https://materialfinder.sabic-specialties.com

DISCLAIMER