Polyetherimide **SABIC**

Technical Data

Product Description

20% Glass fiber filled, standard flow Polyetherimide (Tg 217C). ECO Conforming, UL94 V0 and 5VA listing.

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

Material Status	 Commercial: Active 		
Literature ¹	 Brochure - BIO-CIRCULAR ULTEM[™] RESINS ISCC+ CERTIFIED SUSTAINABILITY (English) Brochure - INNOVATIVE ULTEM[™] RESINS FOR ADVANCED CONNECTORS (English) Brochure - STRIVING FOR A HYDROGEN ECONOMY?DISCOVER OUR SPECIALTY POLYMERS THAT MAY HELP ACCELERATEE YOUR SUCCESS (English) Drones EZISURG MEDICAL SCALPEL CASE STUDY ISCC+ CERTIFIED RENEWABLE BIO-BASED ULTEM[™] RESINS SABIC-MOBILITY-ADAS CAMERA FLYER SABIC-MOBILITY-ADAS LIDAR FLYER Technical Datasheet THERMOPLASTIC SOLUTIONS FOR AUTOMOTIVE OIL PUMPS ULTEM[™] RESIN: AN ALTERNATIVE SOLUTION TO SULFONE POLYMERS 		
UL Yellow Card ²	E121562-502535E121562-221093		
Search for UL Yellow Card	SABICULTEM™ Resin		
Availability	Latin America	North America	
Filler / Reinforcement	Glass Fiber, 20% Filler by We	light	
Features	 Amorphous Chemical Resistant Creep Resistant Electrically Insulating Flame Retardant Good Dimensional Stability Halogen Free 	 High Heat Resistance High Stiffness High Strength Hydrolytically Stable Low (to None) Ion Content Low Shrinkage Low Smoke Emission 	 Low to No Outgassing Low Toxicity Low Warpage PFAS not intentionally added Platable Renewable Resource Contertion
Uses	 Aerospace Applications Aircraft Interiors Appliances Automotive Under the Hood Building Materials Cell Phones Communication Applications Consumer Components Consumer Applications Displays Drone Applications Electrical Parts Electrical/Electronic Applications Eyeglasses 	 Filters Fluid Handling Furniture Heavy Transportation Housings Hygiene Industrial Applications Lighting Applications Material Handling Medical Devices Medical/Healthcare Applications Motorcycle Applications Oil/Gas Applications Packaging 	 Personal Care Pharmaceutical Packaging Printer Rail Applications Recreational Vehicle Applications Seats Speaker Applications Sporting Goods Surgical Instruments Textile Applications Water Management Wire & Cable Applications
Agency Ratings	ISCC PLUS		
Processing Method	Injection Molding		

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General	
Multi-Point Data	 Coefficient of Thermal Expansion vs. Temperature (ASTM E831) Elastic Modulus vs. Temperature (ASTM D4065) Flexural DMA (ASTM D5023) Instrumented Impact (Energy) (ASTM D3763) Instrumented Impact (Load) (ASTM D3763) Shear DMA (ASTM D4065) Specific Heat vs. Temperature (ASTM E1269) Specific Volume vs. Temperature (PVT) Tensile Creep (ASTM D2990) Tensile Fatigue Tensile Stress vs. Strain (ASTM D638) Thermal Conductivity vs. Temperature (ASTM E1530) Viscosity vs. Shear Rate (ASTM D3835)
Also Available In	Asia Pacific Europe

Tensile Modulus ⁴ 6890 MPa ASTM D638 Tensile Strength ⁵ (Break) 131 MPa ASTM D638 Tensile Elongation ⁵ (Break) 4.0 % ASTM D638 Flexural Modulus ⁶ (100 mm Span) 6890 MPa ASTM D790 Flexural Strength ⁶ (Break, 100 mm Span) 227 MPa ASTM D790 mpact Nominal Value Unit Test Method Notched Izod Impact (23°C) 64 J/m ASTM D256 Unnotched Izod Impact (3.20 mm) 460 J/m ASTM D256 Hardness Nominal Value Unit Test Method Reverse Notch Izod Impact (3.20 mm) 460 J/m ASTM D256 Hardness Nominal Value Unit Test Method Rockwell Hardness (M-Scale) 114 ASTM D785 Thermal Nominal Value Unit Test Method Deflection Temperature Under Load 210 °C ASTM D648 0.45 MPa, Unannealed, 6.40 mm 210 °C ASTM D1525 ⁷ CLTE - Flow (-20 to 150°C) 2.1E-5 cm/cm/°C ASTM D1525 ⁷ CLTE - Flow (-20 to 150°C) 2.1E-5 cm/cm/°C ASTM D648 RTI Elec	Physical	Nominal Value Unit	Test Method
Molding Shrinkage - Flow (3.20 mm) 0.30 to 0.50 % Internal Method Water Absorption ASTM D570 24 hr, 23°C 0.19 % Saturation, 23°C 0.19 % Saturation, 23°C 1.1 % Outdoor Suitability f1 UL 746C Mechanical Nominal Value Unit Test Method Aechanical Nominal Value Unit Test Method 36890 MPa ASTM D638 Tensile Strength ⁶ (Break) 131 MPa ASTM D638 36890 MPa ASTM D638 Tensile Elongation ⁶ (Break) 4.0 % ASTM D638 36890 MPa ASTM D638 Flexural Modulus ⁶ (100 mm Span) 6890 MPa ASTM D638 36900 MPa ASTM D638 Flexural Strength ⁶ (Break, 100 mm Span) 227 MPa ASTM D790 36900 MPa ASTM D790 mpact Nominal Value Unit Test Method 3600 J/m ASTM D256 Unnotched Izod Impact (23°C) 64 J/m ASTM D256 3610 J/m ASTM D256 Unnotched Izod Impact (3.20 mm) 460 J/m ASTM D4812 3600 J/m ASTM D4812 Recerse Noth Izod Impact (3.20 mm) <td< td=""><td>Density / Specific Gravity</td><td>1.42 g/cm³</td><td>ASTM D792</td></td<>	Density / Specific Gravity	1.42 g/cm ³	ASTM D792
Water Absorption ASTM D570 24 hr, 23°C 0.19% Saturation, 23°C 1.1% Outdoor Suitability fl UL 746C Acchanical Nominal Value Unit Test Method Tensile Modulus ⁴ 6890 MPa ASTM D638 Tensile Strength ⁶ (Break) 131 MPa ASTM D638 Tensile Elongation ⁵ (Break) 4.0% ASTM D638 Flexural Modulus ⁶ (100 mm Span) 6890 MPa ASTM D790 Flexural Strength ⁶ (Break, 100 mm Span) 227 MPa ASTM D790 Flexural Strength ⁶ (Break, 100 mm Span) 227 MPa ASTM D790 Notched Izod Impact (23°C) 64 J/m ASTM D256 Unnotched Izod Impact (23°C) 460 J/m ASTM D780 Reverse Notch Izod Impact (3.20 mm) 460 J/m ASTM D785 Termal Nominal Value Unit Test Method Deflection Temperature Under Load Nominal Value Unit Test Method Nother Load Impact (23°C) ASTM D785 ASTM D785 Termal Nominal Value Unit Test Method Deflection Temperature Under Load </td <td>Melt Mass-Flow Rate (MFR) (337°C/6.6 kg)</td> <td>6.0 g/10 min</td> <td>ASTM D1238</td>	Melt Mass-Flow Rate (MFR) (337°C/6.6 kg)	6.0 g/10 min	ASTM D1238
24 hr, 23°C 0.19% Saturation, 23°C 1.1% Outdor Suitability f1 UL 746C Aechanical Nominal Value Unit Test Method Tensile Modulus ⁴ 6890 MPa ASTM D638 Tensile Strength ⁶ (Break) 131 MPa ASTM D638 Tensile Elongation ⁵ (Break) 4.0% ASTM D638 Flexural Modulus ⁶ (100 mm Span) 6890 MPa ASTM D638 Flexural Strength ⁶ (Break, 100 mm Span) 227 MPa ASTM D790 mpact Nominal Value Unit Test Method Notched Izod Impact (23°C) 64 J/m ASTM D790 Reverse Notch Izod Impact (3.20 mm) 460 J/m ASTM D796 Innotched Izod Impact (3.20 mm) 460 J/m ASTM D796 Reverse Notch Izod Impact (3.20 mm) 460 J/m ASTM D786 Outforched Izod Impact (3.20 mm) 460 J/m ASTM D780 Nominal Value Unit Test Method ASTM D786 Netwerse Notch Izod Impact (3.40 mm 210 °C ASTM D780 1.8 MPa, Unannealed, 6.40 mm 210 °C ASTM D780 0.45 MPa	Molding Shrinkage - Flow (3.20 mm)	0.30 to 0.50 %	Internal Method
Saturation, 23°C 1.1% Outdoor Suitability f1 UL 746C Aechanical Nominal Value Unit Test Method Tensile Modulus ⁴ 6890 MPa ASTM D638 Tensile Strength ⁶ (Break) 131 MPa ASTM D638 Tensile Elongation ⁵ (Break) 4.0% ASTM D638 Flexural Modulus ⁶ (100 mm Span) 6890 MPa ASTM D790 Flexural Strength ⁶ (Break, 100 mm Span) 227 MPa ASTM D790 Mothed Izod Impact (23°C) 464 J/m ASTM D266 Unnotched Izod Impact (23°C) 460 J/m ASTM D266 Unnotched Izod Impact (3.20 mm) 460 J/m ASTM D266 Vereres Notch Izod Impact (3.20 mm) 460 J/m ASTM D780 Reverse Notch Izod Impact (3.20 mm) 460 J/m ASTM D266 Iardness Nominal Value Unit Test Method Rockwell Hardness (M-Scale) 114 ASTM D780 Inemal Nominal Value Unit Test Method Deflection Temperature Under Load 210 °C ASTM D780 0.45 MPa, Unannealed, 6.40 mm 210 °C ASTM D585	Water Absorption		ASTM D570
Outdoor Suitability f1 UL 746C Aechanical Nominal Value Unit Test Method Tensile Modulus 4 6890 MPa ASTM D638 Tensile Strength 5 (Break) 131 MPa ASTM D638 Tensile Elongation 5 (Break) 4.0 % ASTM D638 Tensile Elongation 5 (Break) 4.0 % ASTM D638 Flexual Modulus 6 (100 mm Span) 6890 MPa ASTM D790 Plexual Strength 6 (Break, 100 mm Span) 227 MPa ASTM D790 mpact Nominal Value Unit Test Method Notched Izod Impact (23°C) 64 J/m ASTM D256 Unnotched Izod Impact (23°C) 460 J/m ASTM D256 Unnotched Izod Impact (23°C) 480 J/m ASTM D256 Iardness Nominal Value Unit Test Method Reverse Notch Izod Impact (3.20 mm) 460 J/m ASTM D256 Iardness Nominal Value Unit Test Method Rockwell Hardness (M-Scale) 114 ASTM D268 Ibremal Nominal Value Unit Test Method Deflection Temperature Under Load 210 °C 1.8 MPa, Unann	24 hr, 23°C	0.19%	
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Tensile Elongation ⁵ (Break) 4.0 % ASTM D638 Flexural Modulus ⁶ (100 mm Span) 6890 MPa ASTM D790 Flexural Strength ⁶ (Break, 100 mm Span) 227 MPa ASTM D790 mpact Nominal Value Unit Test Method Notched Izod Impact (23°C) 64 J/m ASTM D256 Unnotched Izod Impact (3.20 mm) 460 J/m ASTM D4812 Reverse Notch Izod Impact (3.20 mm) 460 J/m ASTM D256 Hardness Nominal Value Unit Test Method Rockwell Hardness (M-Scale) 114 ASTM D785 Thermal Nominal Value Unit Test Method Deflection Temperature Under Load ASTM D785 ASTM D648 0.45 MPa, Unannealed, 6.40 mm 210 °C ASTM D648 0.45 MPa, Unannealed, 6.40 mm 210 °C ASTM D525 ⁷ CLTE - Flow (-20 to 150°C) 2.1E-5 cm/cm/°C ASTM 258 RTI Elec 170 °C UL 7468 RTI Elec 170 °C UL 7468 RTI Str 170 °C UL 7468 RTI Str 170 °C UL 7468	Tensile Modulus ⁴	6890 MPa	ASTM D638
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Reverse Notch Izod Impact (3.20 mm)460 J/mASTM D256IardnessNominal Value UnitTest MethodRockwell Hardness (M-Scale)114ASTM D785ThermalNominal Value UnitTest MethodDeflection Temperature Under LoadASTM D6480.45 MPa, Unannealed, 6.40 mm210 °C1.8 MPa, Unannealed, 6.40 mm210 °CVicat Softening Temperature220 °CVicat Softening Temperature220 °CCLTE - Flow (-20 to 150°C)2.1E-5 cm/cm/°CRTI Elec170 °CRTI Str170 °CUL 746BRTI Str170 °CVolume Resistivity7.0E+16 ohms·cmVolume Resistivity7.0E+16 ohms·cmDielectric Strength (1.60 mm, in Oil)26 kV/mm	Notched Izod Impact (23°C)	64 J/m	ASTM D256
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Deflection Temperature Under LoadASTM D6480.45 MPa, Unannealed, 6.40 mm210 °C1.8 MPa, Unannealed, 6.40 mm210 °CVicat Softening Temperature220 °CASTM D1525 7CLTE - Flow (-20 to 150°C)2.1E-5 cm/cm/°CRTI Elec170 °CImp170 °CRTI Str170 °CUL 746BElectricalNominal Value UnitVolume Resistivity7.0E+16 ohms·cmDielectric Strength (1.60 mm, in Oil)26 kV/mm	Rockwell Hardness (M-Scale)	114	ASTM D785
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RTI Elec 170 °C UL 746B RTI Imp 170 °C UL 746B RTI Str 170 °C UL 746B Electrical Nominal Value Unit Test Method Volume Resistivity 7.0E+16 ohms cm ASTM D257 Dielectric Strength (1.60 mm, in Oil) 26 kV/mm ASTM D149	Vicat Softening Temperature	220 °C	ASTM D1525 7
RTI Imp170 °CUL 746BRTI Str170 °CUL 746BElectricalNominal Value UnitTest MethodVolume Resistivity7.0E+16 ohms·cmASTM D257Dielectric Strength (1.60 mm, in Oil)26 kV/mmASTM D149	CLTE - Flow (-20 to 150°C)	2.1E-5 cm/cm/°C	ASTM E831
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Electrical Nominal Value Unit Test Method Volume Resistivity 7.0E+16 ohms·cm ASTM D257 Dielectric Strength (1.60 mm, in Oil) 26 kV/mm ASTM D149	RTI Imp	170 °C	UL 746B
Volume Resistivity7.0E+16 ohms·cmASTM D257Dielectric Strength (1.60 mm, in Oil)26 kV/mmASTM D149	RTI Str	170 °C	UL 746B
Dielectric Strength (1.60 mm, in Oil) 26 kV/mm ASTM D149	Electrical	Nominal Value Unit	Test Method
	Volume Resistivity	7.0E+16 ohms cm	ASTM D257
Dielectric Constant (1 kHz)3.50ASTM D150	Dielectric Strength (1.60 mm, in Oil)	26 kV/mm	ASTM D149
	Dielectric Constant (1 kHz)	3.50	ASTM D150

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ULTEM[™] Resin 2200 - Americas Polyetherimide

SABIC



Electrical	Nominal Value Unit	Test Method
Dissipation Factor		ASTM D150
1 kHz	1.5E-3	
2.45 GHz	4.9E-3	
Arc Resistance ⁸	PLC 6	ASTM D495
Comparative Tracking Index (CTI)	PLC 4	UL 746A
High Amp Arc Ignition (HAI)		UL 746A
> 1.5 mm	PLC 3	
> 3.0 mm	PLC 4	
High Voltage Arc Resistance to Ignition (HVAR)	PLC 2	UL 746A
Hot-wire Ignition (HWI)		UL 746A
> 1.5 mm	PLC 2	
> 3.0 mm	PLC 1	
Flammability	Nominal Value Unit	Test Method
Flame Rating		UL 94
> 0.41 mm	V-0	
> 1.9 mm	5VA	
Oxygen Index	50 %	ASTM D2863
NBS Smoke Density - Flaming, Ds ⁹	1.30	ASTM E662
Injection	Nominal Value Unit	
Drying Temperature	150 °C	
Drying Time	4.0 to 6.0 hr	
Suggested Max Moisture	0.020 %	
Suggested Shot Size	40 to 60 %	
Rear Temperature	330 to 400 °C	
Middle Temperature	340 to 400 °C	
Front Temperature	345 to 400 °C	
Nozzle Temperature	345 to 400 °C	

Front Temperature	345 10 400 0	
Nozzle Temperature	345 to 400 °C	
Processing (Melt) Temp	350 to 400 °C	
Mold Temperature	135 to 165 °C	
Back Pressure	0.300 to 0.700 MPa	
Screw Speed	40 to 70 rpm	
Vent Depth	0.025 to 0.076 mm	
Injection Notes		

• Drying Time (Cumulative): 24 hr



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ULTEM[™] Resin 2200 - Americas Polyetherimide SABIC

Notes

¹ These links provide you with access to supplier literature. We work hard to keep them up to date; however you may find the most current literature from the supplier.

² A UL Yellow Card contains UL-verified flammability and electrical characteristics. UL Prospector continually works to link Yellow Cards to individual plastic materials in Prospector, however this list may not include all of the appropriate links. It is important that you verify the association between these Yellow Cards and the plastic material found in Prospector. For a complete listing of Yellow Cards, visit the UL Yellow Card Search.

³ Typical properties: these are not to be construed as specifications.

⁴ 5.0 mm/min

⁵ Type I, 5.0 mm/min

⁶ 2.6 mm/min

⁷ Rate A (50°C/h), Loading 2 (50 N)

⁸ Tungsten Electrode

⁹ 4 min



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