ULTEM™ Resin 2200F

REGION AMERICAS

DESCRIPTION

20% Glass fiber filled, standard flow Polyetherimide (Tg 217C). ECO Conforming.

This material is food contact compliant in most jurisdictions – exceptions may exist, request a declaration for details.

GENERAL INFORMATION	
Features	Flame Retardant, Chemical Resistance, Hydrolytic Stability, Low Warpage, Low Smoke and Toxicity, Amorphous, Low Shrinkage, IR Transparent, Bio-Renewable, Food contact, Non halogenated flame retardant, Electroplatable, Creep resistant, Dimensional stability, High stiffness/Strength, High temperature resistance, No PFAS intentionally added
Fillers	Glass Fiber (Total fluorine >50ppm only from inorganic fluorine)
Polymer Types	Polyetherimide (PEI)
Processing Techniques	Injection Molding

INDUSTRY	SUB INDUSTRY
Automotive	Heavy Truck, Automotive Under the Hood, Aerospace, Motorcycle, Recreational/Specialty Vehicles
Building and Construction	Building Component, Water Management
Consumer	Consumer Goods, Sport/Leisure, Personal Accessory, Home Appliances, Commercial Appliance, Furniture
Electrical and Electronics	Energy Management, Drone Solutions, Mobile Phone - Computer - Tablets, Circuit Boards/Additives, Lighting, Printer Copier, Speaker - Earphone, Wireless Communication
Hygiene and Healthcare	Personal and Professional Hygiene, Pharmaceutical Packaging and Drug Delivery, Surgical devices, General Healthcare, Patient Testing
Industrial	Electrical, Material Handling, Textile, Eyewear
Mass Transportation	Rail
Packaging	Industrial Packaging

TYPICAL PROPERTY VALUES

Revision 20260319

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Stress, yld, Type I, 5 mm/min	131	MPa	ASTM D638
Tensile Stress, brk, Type I, 5 mm/min	131	MPa	ASTM D638
Tensile Strain, yld, Type I, 5 mm/min	2	%	ASTM D638
Tensile Strain, brk, Type I, 5 mm/min	2	%	ASTM D638
Tensile Modulus, 5 mm/min	6890	MPa	ASTM D638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	225	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	6850	MPa	ASTM D790
Hardness, Rockwell M	114	-	ASTM D785
Tensile Stress, yield, 5 mm/min	131	MPa	ISO 527
Tensile Stress, break, 5 mm/min	131	MPa	ISO 527
Tensile Strain, yield, 5 mm/min	2	%	ISO 527
Tensile Strain, break, 5 mm/min	2	%	ISO 527
Tensile Modulus, 1 mm/min	6890	MPa	ISO 527

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Flexural Stress, yield, 2 mm/min	228	MPa	ISO 178
Flexural Modulus, 2 mm/min	6500	MPa	ISO 178
IMPACT			
Izod Impact, unnotched, 23°C	480	J/m	ASTM D4812
Izod Impact, notched, 23°C	64	J/m	ASTM D256
Izod Impact, notched, -30°C	70	J/m	ASTM D256
Izod Impact, Reverse Notched, 3.2 mm	464	J/m	ASTM D256
Instrumented Dart Impact Total Energy, 23°C	8	J	ASTM D3763
Izod Impact, notched 80*10*4 +23°C	64	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	70	kJ/m²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	65	kJ/m²	ISO 179/1eA
THERMAL			
Vicat Softening Temp, Rate B/50	220	°C	ASTM D1525
HDT, 1.82 MPa, 3.2mm, unannealed	208	°C	ASTM D648
CTE			
-40°C to 150°C, xflow	4.9E-05	1/°C	ASTM E831
-20°C to 150°C, flow	2.1E-05	1/°C	ASTM E831
23°C to 150°C, flow	2.1E-05	1/°C	ISO 11359-2
23°C to 150°C, xflow	4.9E-05	1/°C	ISO 11359-2
Ball Pressure Test			
125°C +/- 2°C	PASSES	-	IEC 60695-10-2
Vicat Softening Temp, Rate B/50	212	°C	ISO 306
Vicat Softening Temp, Rate B/120	218	°C	ISO 306
HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm	205	°C	ISO 75/Ae
Relative Temp Index, Elec [(1)]	170	°C	UL 746B
Relative Temp Index, Mech w/impact [(1)]	170	°C	UL 746B
Relative Temp Index, Mech w/o impact [(1)]	170	°C	UL 746B
PHYSICAL			
Specific Gravity	1.42	-	ASTM D792
Water Absorption, (23°C/24hrs)	0.19	%	ASTM D570
Water Absorption, (23°C/Saturated)	1.1	%	ASTM D570
Mold Shrinkage, flow, 3.2 mm	0.3 – 0.5	%	SABIC method
Mold Shrinkage, xflow, 3.2 mm	0.3 – 0.5	%	SABIC method
Melt Flow Rate, 337°C/6.6 kgf	6	g/10 min	ASTM D1238
Density	1.42	g/cm³	ISO 1183
Water Absorption, (23°C/saturated)	1	%	ISO 62-1
Moisture Absorption (23°C / 50% RH)	0.55	%	ISO 62
Melt Volume Rate, MVR at 360°C/5.0 kg	7	cm³/10 min	ISO 1133
ELECTRICAL			
Volume Resistivity	7.E+16	Ω.cm	ASTM D257
Dielectric Strength, in oil, 1.6 mm	26.3	kV/mm	ASTM D149
Relative Permittivity, 1 kHz	3.5	-	ASTM D150
Dissipation Factor			
1 kHz	0.0015	-	ASTM D150
2450 MHz	0.0049	-	ASTM D150

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Comparative Tracking Index (UL) {PLC}	4	PLC Code	UL 746A
Hot-Wire Ignition (HWI), PLC 1	≥3	mm	UL 746A
Hot-Wire Ignition (HWI), PLC 2	≥1.5	mm	UL 746A
High Amp Arc Ignition (HAI), PLC 3	≥1.5	mm	UL 746A
High Amp Arc Ignition (HAI), PLC 4	≥3	mm	UL 746A
High Voltage Arc Track Rate {PLC}	2	PLC Code	UL 746A
Arc Resistance, Tungsten {PLC}	6	PLC Code	ASTM D495
FLAME CHARACTERISTICS (1)			
UL Yellow Card Link	E121562-221093	-	-
UL Recognized, 94-5VA Flame Class Rating	≥1.9	mm	UL 94
UL Recognized, 94V-0 Flame Class Rating	≥0.41	mm	UL 94
Oxygen Index (LOI)	50	%	ASTM D2863
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	

(1) UL Ratings shown on the technical datasheet might not cover the full range of thicknesses and colors. For details, please see the UL Yellow Card.

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