

SABIC Innovative Plastics Ultem 2200N PEI

Category : Polymer , Thermoplastic , Polyetherimide (PEI)

Material Notes:

20% Glass fiber filled Polyetherimide (Tg 217C). ECO Conforming. This data was supplied by SABIC-IP for the Americas region.

Order this product through the following link:

http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-Ultem-2200N-PEI.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.42 g/cc	1.42 g/cc	ASTM D 792
Density	1.42 g/cc	0.0513 lb/in ³	ISO 1183
Water Absorption	0.19 %	0.19 %	ASTM D 570
	@Time 86400 sec	@Time 24.0 hour	
Moisture Absorption at Equilibrium	0.55 %	0.55 %	23 ^o C / 50% RH; ISO 62
	1.1 %	1.1 %	ASTM D 570
	@Temperature 23.0 ^o C	@Temperature 73.4 ^o F	
Water Absorption at Saturation	1.0 %	1.0 %	ISO 62
	@Temperature 23.0 ^o C	@Temperature 73.4 ^o F	
Linear Mold Shrinkage, Flow	0.0030 - 0.0050 cm/cm	0.0030 - 0.0050 in/in	on tensile bar; SABIC Method
	0.0030 - 0.0050 cm/cm	0.0030 - 0.0050 in/in	SABIC Method
	@Thickness 3.20 mm	@Thickness 0.126 in	
Linear Mold Shrinkage, Transverse	0.0040 - 0.0060 cm/cm	0.0040 - 0.0060 in/in	SABIC Method
	@Thickness 3.20 mm	@Thickness 0.126 in	
Melt Flow	6.0 g/10 min	6.0 g/10 min	ASTM D 1238
	@Load 6.60 kg, Temperature 337 ^o C	@Load 14.6 lb, Temperature 639 ^o F	
	7.0 g/10 min	7.0 g/10 min	[cm ³ /10 min] Melt Volume Rate; ISO 1133
	@Load 5.00 kg, Temperature 360 ^o C	@Load 11.0 lb, Temperature 680 ^o F	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	114	114	ASTM D 785
Hardness, H358/30	150 MPa	21800 psi	ISO 2039-1

Tensile Strength at Break Mechanical Properties	130 MPa Metric	18900 psi English	Type I, 5 mm/min; ASTM D 638 Comments
	140 MPa	20300 psi	5 mm/min; ISO 527
Tensile Strength, Yield	130 MPa	18900 psi	Type I, 5 mm/min; ASTM D 638
	140 MPa	20300 psi	5 mm/min; ISO 527
Elongation at Break	2.0 %	2.0 %	5 mm/min; ISO 527
	4.0 %	4.0 %	Type I, 5 mm/min; ASTM D 638
Elongation at Yield	2.0 %	2.0 %	5 mm/min; ISO 527
	4.0 %	4.0 %	Type I, 5 mm/min; ASTM D 638
Tensile Modulus	6.80 GPa	986 ksi	1 mm/min; ISO 527
	6.89 GPa	999 ksi	5 mm/min; ASTM D 638
Flexural Yield Strength	210 MPa	30500 psi	2 mm/min; ISO 178
	228 MPa	33100 psi	1.3 mm/min, 50 mm span; ASTM D 790
Flexural Modulus	6.50 GPa	943 ksi	2 mm/min; ISO 178
	6.89 GPa	999 ksi	1.3 mm/min, 50 mm span; ASTM D 790
Izod Impact, Notched	0.640 J/cm @Temperature 23.0 Â°C	1.20 ft-lb/in @Temperature 73.4 Â°F	ASTM D 256
	4.65 J/cm @Thickness 3.20 mm	8.71 ft-lb/in @Thickness 0.126 in	reverse notched; ASTM D 256
Izod Impact, Unnotched	4.81 J/cm @Temperature 23.0 Â°C	9.01 ft-lb/in @Temperature 73.4 Â°F	ASTM D 4812
Izod Impact, Notched (ISO)	5.00 kJ/mÂ² @Temperature 23.0 Â°C	2.38 ft-lb/inÂ² @Temperature 73.4 Â°F	80*10*4; ISO 180/1A
	5.00 kJ/mÂ² @Temperature -30.0 Â°C	2.38 ft-lb/inÂ² @Temperature -22.0 Â°F	80*10*4; ISO 180/1A
Izod Impact, Unnotched (ISO)	30.0 kJ/mÂ² @Temperature 23.0 Â°C	14.3 ft-lb/inÂ² @Temperature 73.4 Â°F	80*10*4; ISO 180/1U

Mechanical Properties	30.0 kJ/mÂ² Metric	14.3 ft-lb/inÂ² English	Comments 80*10*4, ISO 180/1U
	@Temperature -30.0 Â°C	@Temperature -22.0 Â°F	
Charpy Impact Unnotched	3.50 J/cmÂ² @Temperature 23.0 Â°C	16.7 ft-lb/inÂ² @Temperature 73.4 Â°F	Edgew 80*10*4 sp=62mm; ISO 179/1eU
	3.50 J/cmÂ² @Temperature -30.0 Â°C	16.7 ft-lb/inÂ² @Temperature -22.0 Â°F	Edgew 80*10*4 sp=62mm; ISO 179/1eU
Charpy Impact, Notched	0.900 J/cmÂ² @Temperature 23.0 Â°C	4.28 ft-lb/inÂ² @Temperature 73.4 Â°F	V-notch Edgew 80*10*4 sp=62mm; ISO 179/1eA
	0.900 J/cmÂ² @Temperature -30.0 Â°C	4.28 ft-lb/inÂ² @Temperature -22.0 Â°F	V-notch Edgew 80*10*4 sp=62mm; ISO 179/1eA
Impact Test	10.0 J @Temperature 23.0 Â°C	7.38 ft-lb @Temperature 73.4 Â°F	Instrumented Impact Total Energy; ASTM D 3763
Taber Abrasion, mg/1000 Cycles	17 @Load 1.00 kg	17 @Load 2.20 lb	CS-17; SABIC Method

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	25.0 Âµm/m-Â°C @Temperature -40.0 - 150 Â°C	13.9 Âµin/in-Â°F @Temperature -40.0 - 302 Â°F	ASTM E 831
	25.0 Âµm/m-Â°C @Temperature 23.0 - 150 Â°C	13.9 Âµin/in-Â°F @Temperature 73.4 - 302 Â°F	ISO 11359-2
CTE, linear, Transverse to Flow	60.0 Âµm/m-Â°C @Temperature -40.0 - 150 Â°C	33.3 Âµin/in-Â°F @Temperature -40.0 - 302 Â°F	ASTM E 831
	60.0 Âµm/m-Â°C @Temperature 23.0 - 150 Â°C	33.3 Âµin/in-Â°F @Temperature 73.4 - 302 Â°F	ISO 11359-2
Thermal Conductivity	0.280 W/m-K	1.94 BTU-in/hr-ftÂ²- Â°F	ISO 8302
Deflection Temperature at 0.46 MPa (66 psi)	208 Â°C	406 Â°F	Flatw 80*10*4 sp=64mm; ISO 75/Bf

Thermal Properties	Metric	English	Comments
	208 Â°C	406 Â°F	unannealed; ASTM D 648
	@Thickness 3.20 mm	@Thickness 0.126 in	
	210 Â°C	410 Â°F	unannealed; ASTM D 648
	@Thickness 6.40 mm	@Thickness 0.252 in	
Deflection Temperature at 1.8 MPa (264 psi)	202 Â°C	396 Â°F	Flatw 80*10*4 sp=64mm; ISO 75/Af
	205 Â°C	401 Â°F	Edgew 120*10*4 sp=100mm; ISO 75/Ae
	206 Â°C	403 Â°F	unannealed; ASTM D 648
	@Thickness 3.20 mm	@Thickness 0.126 in	

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+15 ohm-cm	1.00e+15 ohm-cm	IEC 60093
	7.00e+16 ohm-cm	7.00e+16 ohm-cm	ASTM D 257
Surface Resistance	>= 1.00e+15 ohm	>= 1.00e+15 ohm	ROA; IEC 60093
Dielectric Constant	3.0	3.0	IEC 60250
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
	3.1	3.1	IEC 60250
	@Frequency 50.0 - 60.0 Hz	@Frequency 50.0 - 60.0 Hz	
	3.5	3.5	ASTM D 150
	@Frequency 1000 Hz	@Frequency 1000 Hz	
Dielectric Strength	16.0 kV/mm	406 kV/in	in oil; IEC 60243-1
	@Thickness 3.20 mm	@Thickness 0.126 in	
	26.0 kV/mm	660 kV/in	in oil; IEC 60243-1
	@Thickness 1.60 mm	@Thickness 0.0630 in	
	26.4 kV/mm	671 kV/in	in oil; ASTM D 149
	@Thickness 1.60 mm	@Thickness 0.0630 in	
	34.0 kV/mm	864 kV/in	in oil; IEC 60243-1
	@Thickness 0.800 mm	@Thickness 0.0315 in	
	0.00080	0.00080	

Designation Factor Electrical Properties	Metric @Frequency 50.0 - 60.0 Hz	English @Frequency 50.0 - 60.0 Hz	IEC 60250 Comments
	0.0015	0.0015	ASTM D 150
	@Frequency 1000 Hz	@Frequency 1000 Hz	
	0.0025	0.0025	IEC 60250
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
	0.0049	0.0049	IEC 60250
	@Frequency 2.45e+9 Hz	@Frequency 2.45e+9 Hz	
	0.0049	0.0049	ASTM D 150
	@Frequency 2.45e+9 Hz	@Frequency 2.45e+9 Hz	
Comparative Tracking Index	>= 100 V	>= 100 V	IEC 60112
	150 V	150 V	IEC 60112

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