



Wednesday, August 30, 2023

PRL PEI-GP1

Units English ▼

Polymer Resources Ltd. - Polyether Imide

Action

Legend ([Open](#))

General Information

General

Material Status	• Commercial: Active
Availability	• North America
Additive	• Flame Retardant
Features	• Flame Retardant • High Heat Resistance
RoHS Compliance	• RoHS Compliant
UL File Number	• E113219
Forms	• Pellets
Processing Method	• Injection Molding

ASTM & ISO Properties ¹

Physical	Nominal Value	Unit	Test Method
Density / Specific Gravity	1.27		ASTM D792
Melt Mass-Flow Rate (MFR) (337°C/6.6 kg)	6.0 to 22	g/10 min	ASTM D1238
Molding Shrinkage - Flow (0.125 in)	5.0E-3 to 7.0E-3	in/in	ASTM D955
Water Absorption (24 hr)	0.25	%	ASTM D570
Water Absorption (Equilibrium, 73°F)	1.3	%	ASTM D570
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus (0.125 in)	510000	psi	ASTM D638
Tensile Strength (Yield, 0.125 in)	15000	psi	ASTM D638
Tensile Strength (Break, 0.125 in)	15000	psi	ASTM D638
Tensile Elongation (Yield, 0.125 in)	7.0	%	ASTM D638
Tensile Elongation (Break, 0.125 in)	60	%	ASTM D638
Flexural Modulus (0.125 in)	500000	psi	ASTM D790
Flexural Strength (0.125 in)	23000	psi	ASTM D790
Poisson's Ratio	0.36		ASTM D638
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact (73°F, 0.125 in)	1.0	ft·lb/in	ASTM D256
Unnotched Izod Impact (73°F, 0.125 in)	25	ft·lb/in	ASTM D4812
Reverse Notch Izod Impact (73°F, 0.125 in)	20	ft·lb/in	ASTM D256
Gardner Impact (0.125 in)	20.0	in·lb	ASTM D3029
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (M-Scale)	109		ASTM D785
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load (66 psi, Unannealed, 0.125 in)	400	°F	ASTM D648
Deflection Temperature Under Load (264 psi, Unannealed, 0.125 in)	385	°F	ASTM D648
Vicat Softening Temperature	425	°F	ASTM D1525 ²
CLTE - Flow (-4 to 302°F)	3.1E-5	in/in/°F	ASTM E831
CLTE - Transverse (-4 to 302°F)	3.0E-5	in/in/°F	ASTM E831
Thermal Conductivity	1.5	Btu·in/hr/ft²/°F	ASTM C177
RTI Elec			UL 746B
0.06 in	221	°F	
0.12 in	221	°F	
RTI Imp			UL 746B
0.06 in	221	°F	
0.12 in	221	°F	
RTI Str			UL 746B
0.06 in	221	°F	

Electrical	Nominal Value	Unit	Test Method
Volume Resistivity	1.0E+17	ohms·cm	ASTM D257
Dielectric Strength			ASTM D149
0.0625 in, in Air	820	V/mil	
0.0625 in, in Oil	700	V/mil	
0.125 in, in Oil	500	V/mil	
Dielectric Constant			ASTM D150
100 Hz	3.15		
1 kHz	3.15		
Dissipation Factor			ASTM D150
100 Hz	1.5E-3		
1 kHz	1.2E-3		
2.00 GHz	2.5E-3		
Flammability	Nominal Value	Unit	Test Method
Flame Rating			UL 94
0.06 in	V-0		
0.12 in	V-0		

Processing Information

Injection	Nominal Value	Unit
Drying Temperature	290 to 300	°F
Drying Time	4.0 to 6.0	hr
Drying Time, Maximum	8.0	hr
Rear Temperature	630 to 750	°F
Middle Temperature	640 to 750	°F
Front Temperature	650 to 750	°F
Processing (Melt) Temp	640 to 750	°F
Mold Temperature	225 to 350	°F

Notes

¹ Typical properties: these are not to be construed as specifications.

² Rate B (120°C/h), Loading 2 (50 N)

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