



Wednesday, August 30, 2023

PRL PEI-GP1-TFE5

Polymer Resources Ltd. - Polyether Imide

Units English ▼

Action	Legend (Open)
 	

General Information

General		
Material Status	• Commercial: Active	
Availability	• North America	
Additive	• Flame Retardant	• PTFE Lubricant: 5%
Features	• Flame Retardant	• High Heat Resistance
RoHS Compliance	• RoHS Compliant	
Forms	• Pellets	
Processing Method	• Injection Molding	

ASTM & ISO Properties ¹

Physical	Nominal Value	Unit	Test Method
Density / Specific Gravity			
—	1.27		ASTM D792
—	1.27		ISO 1183
Melt Mass-Flow Rate (MFR) (337°C/6.6 kg)	5.0 to 30	g/10 min	ASTM D1238
Molding Shrinkage - Flow (0.125 in)	5.0E-3 to 7.0E-3	in/in	ASTM D955
Molding Shrinkage - Across Flow (0.125 in)	5.0E-3 to 7.0E-3	in/in	ASTM D955
Water Absorption (Saturation, 73°F)	1.1	%	ISO 62
Water Absorption (Equilibrium, 73°F, 50% RH)	0.60	%	ISO 62
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus (0.125 in)	500000	psi	ASTM D638
Tensile Modulus	475000	psi	ISO 527-1/1
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)	5.0	%	ASTM D638
Tensile Elongation (Break, 0.125 in)	40	%	ASTM D638
Flexural Modulus (0.125 in)	490000	psi	ASTM D790
Flexural Modulus	440000	psi	ISO 178
Flexural Strength (0.125 in)	21000	psi	ASTM D790
Flexural Stress ²	18800	psi	ISO 178
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength (73°F)	5.0	ft·lb/in²	ISO 179/1eA
Notched Izod Impact			ASTM D256
-22°F, 0.125 in	1.0	ft·lb/in	
73°F, 0.125 in	1.0	ft·lb/in	
Notched Izod Impact Strength			ISO 180/1A
-22°F	3.5	ft·lb/in²	
73°F	4.2	ft·lb/in²	
Unnotched Izod Impact (73°F, 0.125 in)	10	ft·lb/in	ASTM D4812
Reverse Notch Izod Impact (73°F, 0.125 in)	22	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)	110		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 ³
Vicat Softening Temperature			

—	409 °F	ISO 306/B120
—	418 °F	ISO 306/B50
CLTE - Flow (73 to 302°F)	2.2E-5 in/in/°F	ISO 11359-2
CLTE - Flow (-4 to 302°F)	2.2E-5 in/in/°F	ASTM E831
CLTE - Transverse (73 to 302°F)	2.2E-5 in/in/°F	ISO 11359-2
CLTE - Transverse (-4 to 302°F)	2.2E-5 in/in/°F	ASTM E831

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 Yield
³ Rate B (120°C/h), Loading 2 (50 N)

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