



Wednesday, August 30, 2023

PRL PC-FR1A-D

Polymer Resources Ltd. - Polycarbonate

Units English ▼

Action

Legend ([Open](#))

General Information

General

Material Status	• Commercial: Active
Availability	• North America
Additive	• Flame Retardant
Features	• Flame Retardant • High Impact Resistance • High Viscosity • Low Flow • Medium Heat Resistance • Self Extinguishing
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	1.21		ASTM D792
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	5.0 to 10	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
Mechanical	Nominal Value	Unit	Test Method
Tensile Strength (Yield, 0.125 in)	9000	psi	ASTM D638
Tensile Strength (Break, 0.125 in)	8000	psi	ASTM D638
Tensile Elongation (Yield, 0.125 in)	7.0	%	ASTM D638
Tensile Elongation (Break, 0.125 in)	90	%	ASTM D638
Flexural Modulus (0.125 in)	320000	psi	ASTM D790
Flexural Strength (0.125 in)	13000	psi	ASTM D790
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact (73°F, 0.125 in)	12	ft-lb/in	ASTM D256
Gardner Impact (0.125 in)	> 320	in-lb	ASTM D3029
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness			ASTM D785
M-Scale	70		
R-Scale	118		
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load (66 psi, Unannealed, 0.125 in)	275	°F	ASTM D648
Deflection Temperature Under Load (264 psi, Unannealed, 0.125 in)	265	°F	ASTM D648
Vicat Softening Temperature	300	°F	ASTM D1525 ²
RTI Elec			UL 746B
0.06 in	257	°F	
0.12 in	257	°F	
RTI Imp			UL 746B
0.06 in	230	°F	
0.12 in	230	°F	
RTI Str			UL 746B
0.06 in	257	°F	
0.12 in	257	°F	
Electrical	Nominal Value	Unit	Test Method
Volume Resistivity	1.0E+15	ohms·cm	ASTM D257
Dielectric Strength (0.0591 in)	640	V/mil	ASTM D149
Arc Resistance (0.0591 in)	PLC 5		ASTM D495

Comparative Tracking Index (CTI) (0.0591 in)	PLC 2	UL 746A
High Amp Arc Ignition (HAI)		UL 746A
0.06 in	PLC 3	
0.12 in	PLC 2	
High Voltage Arc Tracking Rate (HVTR) (0.0591 in)	PLC 3	UL 746A
Hot-wire Ignition (HWI)		UL 746A
0.06 in	PLC 2	
0.12 in	PLC 1	
Flammability	Nominal Value	Unit
Flame Rating		UL 94
0.06 in, ALL	V-2	
0.12 in, ALL	V-0	
Optical	Nominal Value	Unit
Light Transmittance (100.0 mil)	85.0 %	ASTM D1003
Haze (100.0 mil)	1.00 %	ASTM D1003

Processing Information

Injection	Nominal Value	Unit
Drying Temperature	245 to 255	°F
Drying Time	3.0 to 4.0	hr
Drying Time, Maximum	8.0	hr
Rear Temperature	550 to 590	°F
Middle Temperature	570 to 610	°F
Front Temperature	590 to 630	°F
Processing (Melt) Temp	600 to 650	°F
Mold Temperature	180 to 240	°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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