

COOLPOLY® D5120 - PPS

Description

CoolPoly D series of thermally conductive plastics transfers heat, a characteristic previously unavailable in injection molding grade polymers. CoolPoly is lightweight, netshape moldable and allows design freedom in applications previously restricted to metals. The D series is electrically non-conductive and can be used for its dielectric properties.

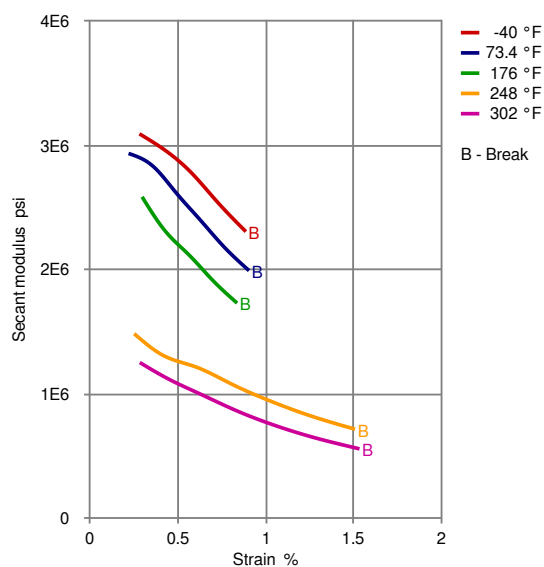
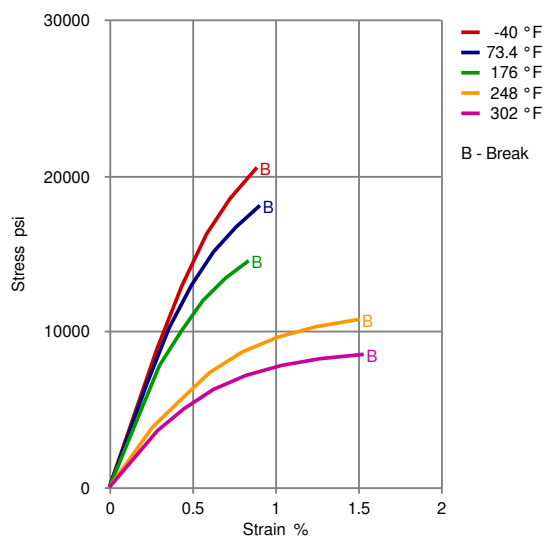
Physical properties	Value	Unit	Test Standard
Density	125	lb/ft ³	ISO 1183
Molding shrinkage, parallel (flow)	0.2	%	ISO 294-4, 2577
Molding shrinkage, transverse normal	0.5	%	ISO 294-4, 2577

Mechanical properties	Value	Unit	Test Standard
Tensile modulus	2.32E6	psi	ISO 527-1, -2
Tensile stress at break, 5mm/min	18100	psi	ISO 527-1, -2
Tensile strain at break, 5mm/min	0.8	%	ISO 527-1, -2
Flexural modulus, 23°C	2.61E6	psi	ISO 178
Flexural strength, 23°C	27600	psi	ISO 178
Charpy impact strength, 23°C	6.18	ft-lb/in ²	ISO 179/1eU
Charpy notched impact strength, 23°C	1.66	ft-lb/in ²	ISO 179/1eA
Rockwell hardness (M-Scale)	100	M-Scale	ISO 2039-2

Thermal properties	Value	Unit	Test Standard
DTUL at 1.8 MPa	500	°F	ISO 75-1, -2
DTUL at 0.45 MPa	536	°F	ISO 75-1, -2
Flammability @1.6mm nom. thickn.	V-0	class	UL 94
thickness tested (1.6)	0.1	in	UL 94
Thermal conductivity, flow	0.7	W/(m K)	ASTM E1461
Thermal conductivity, thruplane	0.7	W/(m K)	ASTM E1461

Diagrams





Typical injection moulding processing conditions

Pre Drying

	Value	Unit
Drying time	4 - 6	h
Drying temperature	302	°F

Temperature

	Value	Unit
Zone1 temperature	563 - 599	°F
Zone2 temperature	572 - 608	°F
Zone3 temperature	581 - 617	°F
Zone4 temperature	581 - 653	°F
Nozzle temperature	572 - 626	°F
Melt temperature	572 - 626	°F
Mold temperature	275 - 347	°F

Pressure

	Value	Unit
Back pressure max.	7	bar

Speed

	Value
Injection speed	medium-fast

Characteristics

Special Characteristics

Flame retardant, Light weighting, Thermally conductive

Processing

Injection molding

