Celanese
The chemistry inside innovation™

COOLPOLY® E5101

COOLPOLY®

CoolPoly E 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 E series is electrically conductive and provides inherent EMI/RFI shielding characteristics.

Product information

Resin Identification	PPS	ISO 1043
Part Marking Code	>PPS<	ISO 11469

Typical mechanical properties

Tensile modulus	1.68E6	psi	ISO 527-1/-2
Tensile stress at break, 5mm/min	6380	psi	ISO 527-1/-2
Tensile strain at break, 5mm/min	0.43	%	ISO 527-1/-2
Flexural modulus	1.89E6	psi	ISO 178
Flexural strength	11000	psi	ISO 178
Charpy impact strength, 23°C	1.66	ftlb/in^2	ISO 179/1eU

Thermal properties

Melting temperature, 10°C/min	536	°F	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	478	°F	ISO 75-1/-2
Temperature of deflection under load, 0.45 MPa	534	°F	ISO 75-1/-2
Thermal conductivity, flow	20	W/(m K)	ISO 22007-2
Thermal conductivity, crossflow	15	W/(m K)	ISO 22007-2
Thermal conductivity, through plane	3.5	W/(m K)	ISO 22007-2

Flammability

Burning Behav. at thickness h	V-0	class	IEC 60695-11-10
Thickness tested	0.0394	in	IEC 60695-11-10
UL recognition	yes		UL 94

Electrical properties

Volume resistivity	0.0017	Ohm.m	IEC 62631-3-1
Surface resistivity	74[PV]	Ohm	IEC 62631-3-2

[PV]: Preliminary Value

Physical/Other properties

Water absorption, 2mm	0.05	%	Sim. to ISO 62
Density	0.0617	lb/in^3	ISO 1183

Injection

Drying Recommended	yes	
Drying Temperature	266	°F
Drying Time, Dehumidified Dryer	2 - 4	h
Processing Moisture Content	≤0.02	%
Melt Temperature Optimum	626	°F
Min. melt temperature	590	°F
Max. melt temperature	644	°F

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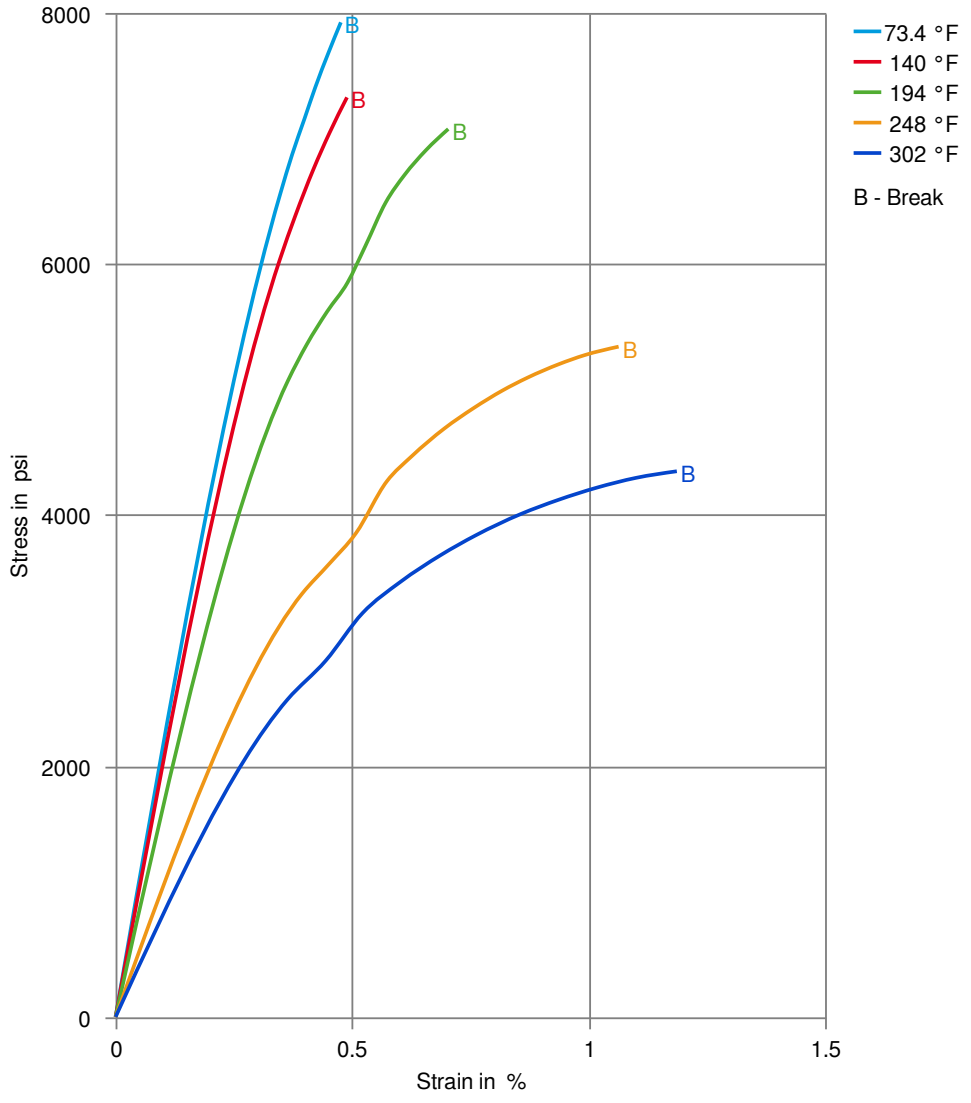
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Max. screw tangential speed	0.2 - 0.3 m/s
Mold Temperature Optimum	320 °F
Min. mold temperature	284 °F
Max. mold temperature	347 °F
Ejection temperature	437 °F

Characteristics

Processing	Injection Molding
Special characteristics	Increased electrical conductivity, Anti-static, Static dissipative, Flame retardant, Light weight

Stress-strain

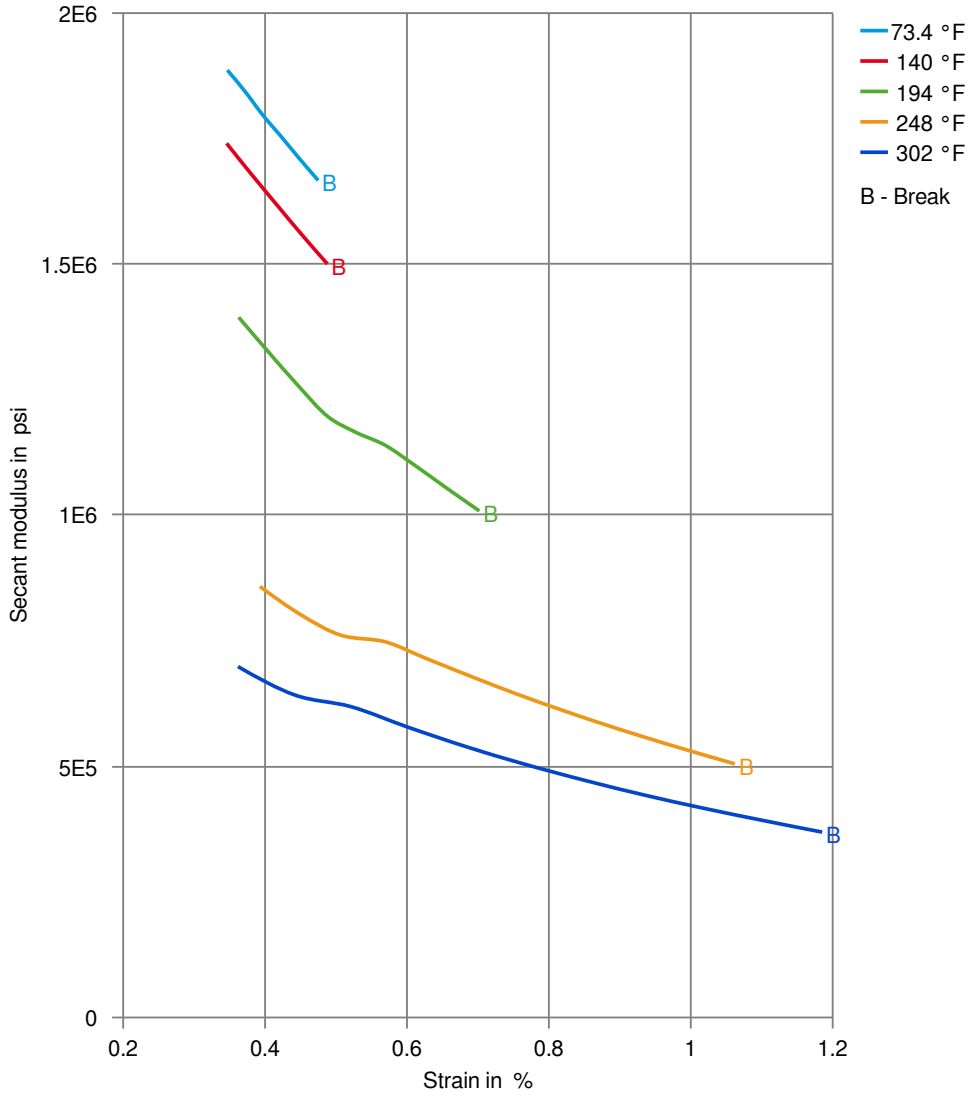


Revised: 2025-12-22 Source: Celanese Materials Database

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Secant modulus-strain



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