

COOLPOLY® E3609 - PA6

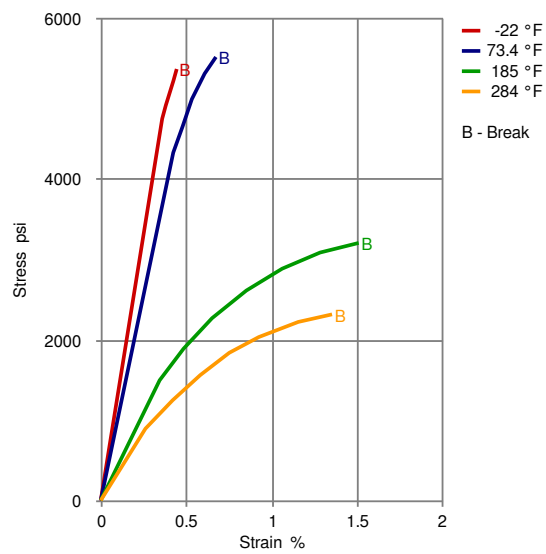
Description

CoolPoly E3609 is a thermally and electrically conductive PA6 based grade specified for auto applications. 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.

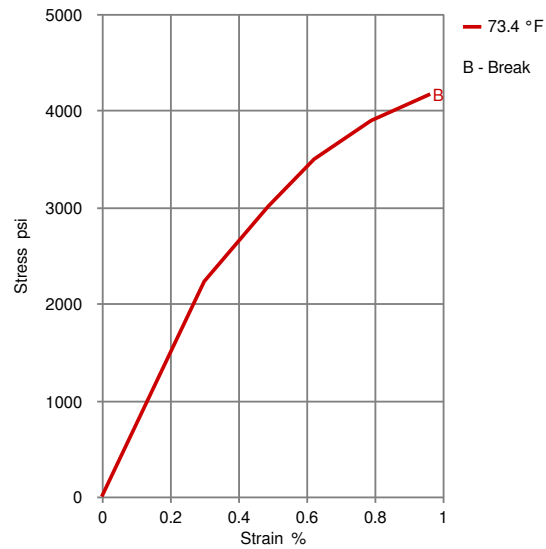
Physical properties	Value	Unit	Test Standard
Density	96.8	lb/ft ³	ISO 1183
Molding shrinkage, parallel (flow)	0.2 - 0.5	%	ISO 294-4, 2577
Molding shrinkage, transverse normal	0.2 - 0.6	%	ISO 294-4, 2577
Humidity absorption, 23°C/50%RH	<0.1	%	ISO 62
Mechanical properties	Value	Unit	Test Standard
Tensile modulus	1.02E6/-	psi	ISO 527-1, -2
Tensile stress at break, 5mm/min	5220/-	psi	ISO 527-1, -2
Tensile strain at break, 5mm/min	0.7/-	%	ISO 527-1, -2
Flexural modulus, 23°C	1.2E6/-	psi	ISO 178
Flexural strength, 23°C	9280/-	psi	ISO 178
Charpy impact strength, 23°C	2.38/-	ft-lb/in ²	ISO 179/1eU
Charpy notched impact strength, 23°C	1.05/-	ft-lb/in ²	ISO 179/1eA
Charpy notched impact strength, -30°C	0.904/-	ft-lb/in ²	ISO 179/1eA
Thermal properties	Value	Unit	Test Standard
Melting temperature, 10°C/min	428	°F	ISO 11357-1/-3
DTUL at 1.8 MPa	347	°F	ISO 75-1, -2
Coeff. of linear therm expansion, parallel	0.117	E-4/°F	ISO 11359-2
Coeff. of linear therm expansion, normal	0.289	E-4/°F	ISO 11359-2
Flammability at thickness h	HB	class	UL 94
thickness tested (h)	0.0591	in	UL 94
Thermal conductivity, flow	24	W/(m K)	ASTM E1461
Thermal conductivity, crossflow	18	W/(m K)	ASTM E1461
Thermal conductivity, thruplane	4	W/(m K)	ASTM E1461
Electrical properties	Value	Unit	Test Standard
Volume resistivity, 23°C	0.02/-	Ohm*m	IEC 62631-3-1

Diagrams

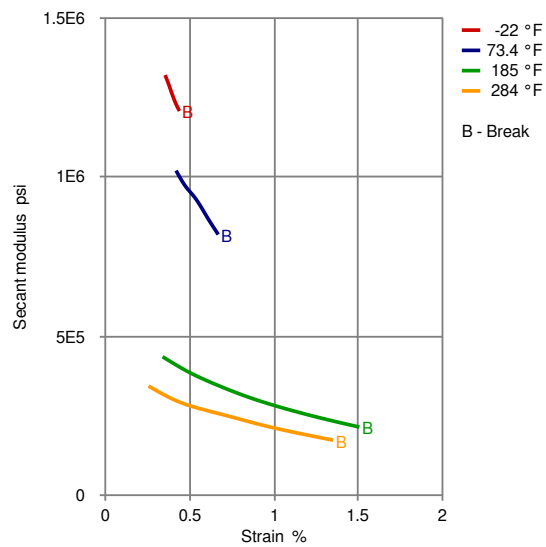
Stress-strain (dry)



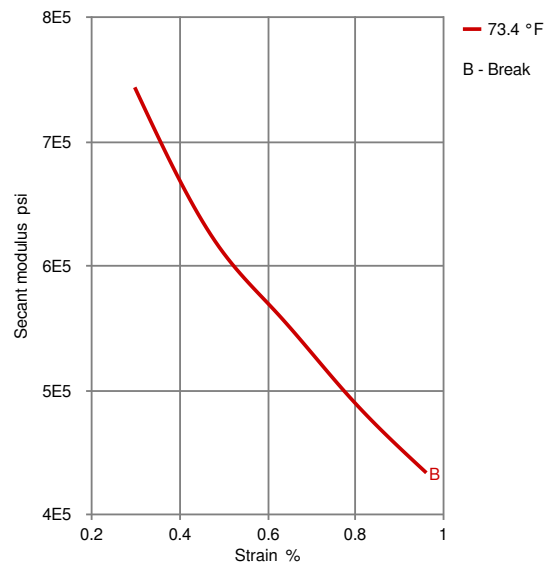
Stress-strain (cond.)

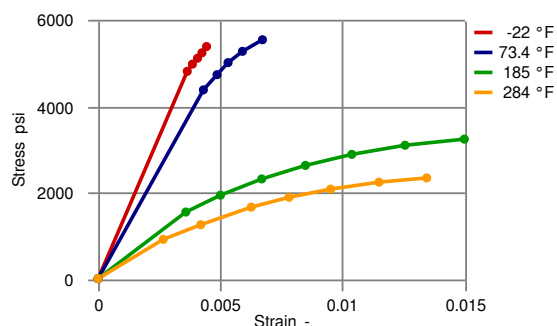


Secant modulus-strain (dry)



Secant modulus-strain (cond.)



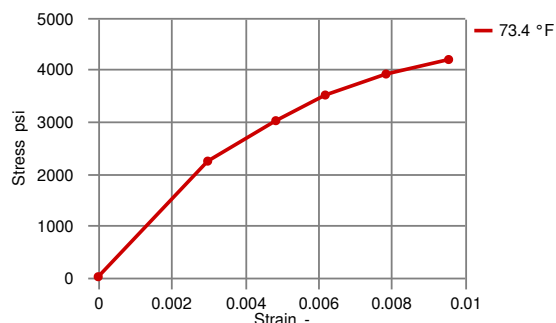


DAM samples are dry as molded.

Conditioned samples are conditioned according to ISO 1110

No yield for DAM and Conditioned samples for all temperatures

Poisson ratio used is 0.33



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Typical injection moulding processing conditions

Pre Drying

	Value	Unit
Drying time	2 - 4	h
Drying temperature	176	°F

Temperature

	Value	Unit
Zone1 temperature	410 - 464	°F
Zone2 temperature	446 - 536	°F
Zone3 temperature	446 - 545	°F
Zone4 temperature	455 - 554	°F
Nozzle temperature	419 - 536	°F
Melt temperature	464 - 554	°F
Mold temperature	212 - 284	°F

Pressure

	Value	Unit
Back pressure max.	3.5	bar

Speed

	Value
Injection speed	medium-fast

Characteristics

Special Characteristics

Anti-static, Auto spec approved, Electrically conductive, Electrostatic dissipation, Light weighting, Thermally conductive

Processing

Injection molding

Other Approvals

OEM

GM
Stellantis - PSA Group

Specification

GMW17802P-PA6-T1
B62 0300 61/221E/210M+/C2B

Additional Information

KD3003 Black

General Disclaimer

NOTICE TO USERS: Values shown are based on testing of laboratory test specimens and represent data that fall within the standard range of properties for natural material. These values alone do not represent a sufficient basis for any part design and are not intended for use in establishing maximum, minimum, or ranges of values for specification purposes. Colorants or other additives may cause significant variations in data values. Properties of molded parts can be influenced by a wide variety of factors including, but not limited to, material selection, additives, part design, processing conditions and environmental exposure. Any determination of the suitability of a particular material and part design for any use contemplated by the users and the manner of such use is the sole responsibility of the users, who must assure themselves that the material as subsequently processed meets the needs of their particular product or use. To the best of our knowledge, the information contained in this publication is accurate; however, we do not assume any liability whatsoever for the accuracy and completeness of such information. The information contained in this publication should not be construed as a promise or guarantee of specific properties of our products. It is the sole responsibility of the users to investigate whether any existing patents are infringed by the use of the materials mentioned in this publication. Moreover, there is a need to reduce human exposure to many materials to the lowest practical limits in view of possible adverse effects. To the extent that any hazards may have been mentioned in this publication, we neither suggest nor guarantee that such hazards are the only ones that exist. We recommend that persons intending to rely on any recommendation or to use any equipment, processing technique or material mentioned in this publication should satisfy themselves that they can meet all applicable safety and health standards. We strongly recommend that users seek and adhere to the manufacturer's current instructions for handling each material they use, and entrust the handling of such material to adequately trained personnel only. Please call the telephone numbers listed for additional technical information. Call Customer Services for the appropriate Materials Safety Data Sheets (MSDS) before attempting to process our products. The products mentioned herein are not intended for use in medical or dental implants.

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