

COOLPOLY® E3609 - PA6

Description

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.

Thermal properties	Value	Unit	Test Standard
Melting temperature, 10°C/min	220	°C	ISO 11357-1/-3
DTUL at 1.8 MPa	175	°C	ISO 75-1, -2
Coeff. of linear therm expansion, parallel	0,21	E-4/°C	ISO 11359-2
Coeff. of linear therm expansion, normal	0,52	E-4/°C	ISO 11359-2
Thermal conductivity, flow	24	W/(m K)	ASTM E 1461
Thermal conductivity, crossflow	18	W/(m K)	ASTM E 1461
Thermal conductivity, thruplane	4	W/(m K)	ASTM E 1461

Mechanical properties	Value	Unit	Test Standard
Tensile modulus	7000	MPa	ISO 527-2/1A
Tensile stress at break, 5mm/min	36	MPa	ISO 527-2/1A
Tensile strain at break, 5mm/min	0,7	%	ISO 527-2/1A
Flexural modulus, 23°C	8000	MPa	ISO 178
Flexural strength, 23°C	64	MPa	ISO 178
Charpy impact strength, 23°C	5	kJ/m²	ISO 179/1eU
Charpy notched impact strength, 23°C	2,2	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30°C	1,9	kJ/m²	ISO 179/1eA

Electrical properties	Value	Unit	Test Standard
Volume resistivity	0,02	Ohm*m	IEC 60093

Physical properties	Value	Unit	Test Standard
Density	1550	kg/m³	ISO 1183
Molding shrinkage, parallel	0,2	%	ISO 294-4, 2577
Molding shrinkage, normal	0,2	%	ISO 294-4, 2577

Typical injection moulding processing conditions

Pre Drying	Value	Unit	Test Standard
Drying time	2 - 4	h	-
Drying temperature	80	°C	-
Temperature	Value	Unit	Test Standard
Zone1 temperature	210 - 240	°C	-
Zone2 temperature	230 - 280	°C	-
Zone3 temperature	230 - 285	°C	-
Zone4 temperature	235 - 290	°C	-
Die temperature	215 - 280	°C	-
Melt temperature	240 - 290	°C	-
Cavity temperature	25 - 85	°C	-
Pressure	Value	Unit	Test Standard
Back pressure max.	3,5	bar	-
Speed	Value	Unit	Test Standard
Injection speed	medium-fast	-	-