

CoolPoly E Series of thermally conductive plastics transfers heat, a characteristic previously unavailable in injection moulding grade polymers.

The E Series is electrically conductive and provides inherent EMI/RFI shielding characteristics.

## Typical Properties of CoolPoly® Electrically Conductive Grades

Properties	Test Method	Units	E2 (LCP)	E1201 (PP)	E3603 (PA46)	E3605 (PA46)	E3607 (PA)	E4501 (PC)	E4505 (PC)	E4507 (PC)	E5101 (PPS)	E5107 (PPS)	E5109 (PPS)	E8103 (TPE)
<b>Thermal</b>														
Thermal Conductivity	ASTM E1461	W/mK	20.0	10.0	20.0	6.0	20.0	4.0	4.0	3.60	20.0	1.4	6.0	5
Thermal Diffusivity	ASTM E1461	cm <sup>2</sup> /sec	0.1	0.0587	0.12	0.029	0.1	0.023	0.025	0.022	0.1	0.0082	0.0322	0.0249
Specific Heat	ASTM E1461	J/g °C	0.9	1.28	1.05	1.5	1.1	1.41	1.3	1.26	0.9	1.1	0.963	1.94
Flammability	UL 94		V0				V0 (1mm)			V0	V0			
<b>Mechanical</b>														
Tensile Modulus	ISO 527-1	MPa	24300	5620	9070	5530	10600	4750	6000	4340	13000	12600	17500	
Tensile Strength	ISO 527-1	MPa	80	22	44	49	50	43	45	40	45	100	70	1.28*
Nominal Strain @ Break	ISO 527-1	%	0.25	1	0.563	1.3	0.6	1.6	1	1.4	0.31	0.95	0.42	57*
Flexural Modulus	ISO 178	MPa	32300	5410	9840	5870	10000	4700	6250	4600	13000	11600	17500	
Flexural Strength	ISO 178	MPa	139	37	75	77	70	77	83	73	70	170	129	
Unnotched Charpy	ISO 179-1	kJ/m <sup>2</sup>	4.74	5.38	4.73	10		18	10	13	4	20	7	
Notched Charpy	ISO 179-1	kJ/m <sup>2</sup>	1.96	3.25	2.00	1.9		4	2.8	3.3	2	5	2.5	
<b>Electrical</b>														
Volume Resistivity	ASTM D257	Ohm-cm	70								1100	9.00E+07		
Surface Resistivity	ASTM D257	Ohm/sq	1								6.1	5.00E+08		
<b>Physical</b>														
Density	ISO 1183	g/cm <sup>3</sup>	1.84	1.24	1.56	1.35	1.56	1.28	1.4	1.32	1.7	1.59	1.71	1.13
Hardness		Shore												38A
Mould Shrinkage														
Flow	ASTM D551	%	0.1	0.35	0.4	0.7	0.45	0.4	0.3	0.3	0.3	0.4	0.25	1.5
Cross-Flow	ASTM D551	%	0.3	0.6	0.6	1	0.7	0.5	0.6	0.4	0.5	0.8	0.45	2.1

\*ISO 37

The values quoted are the average of results obtained under laboratory conditions and are given only as an indication to enable customers to make use of our products.

Prospective users should determine the suitability of materials before adopting them on a commercial scale.

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