VECTRA® E845ILDS E-R293

Liquid Crystal Polymer

LDS capable LCP with higher DTUL and impact Chemical abbreviation according to ISO 1043-1 : VECTRA® E845ILDS ECO-R 293 incorporates 18-22% of recycled content by weight in the finished product through mass balance allocation. The product is a drop-in replacement to the standard grade with the same performance and processing properties and contributes to the displacement of virgin resources. The recycled source and allocated content in the product are certified according to ISCC PLUS mass balance approach.

Product information

Resin Identification	LCP-(GF+MD)36		ISO 1043
Part Marking Code	>LCP-(GF+MD)36<		ISO 11469

Rheological properties

Molding shrinkage, parallel	0	%	ISO 294-4, 2577
Molding shrinkage, normal	0.2	%	ISO 294-4, 2577

Typical mechanical properties

Tensile modulus	2.18E6	psi	ISO 527-1/-2
Tensile stress at break, 5mm/min	18900	psi	ISO 527-1/-2
Tensile strain at break, 5mm/min	1.7	%	ISO 527-1/-2
Flexural modulus	2.18E6	psi	ISO 178
Flexural strength	27600	psi	ISO 178
Flexural strain at failure	2.3	%	ISO 178
Charpy notched impact strength, 23°C	5.71	ftlb/in²	ISO 179/1eA

Thermal properties

Melting temperature, 10°C/min	635	°F	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	491	°F	ISO 75-1/-2
Coefficient of linear thermal expansion (CLTE), parallel	0.04	E-4/°F	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	0.322	E-4/°F	ISO 11359-1/-2

Electrical properties

Relative permittivity, 1MHz	3.87		IEC 62631-2-1
Relative permittivity, 2GHz	4.2[OT, 1]		IEC 61189-2-721
Relative permittivity, 10GHz	4.12[OT, 2]		IEC 61189-2-721
Dissipation factor, 1MHz	370	E-4	IEC 62631-2-1
Dissipation factor, 2GHz	52[OT, 1]	E-4	IEC 61189-2-721
Dissipation factor, 10GHz	49[OT, 2]	E-4	IEC 61189-2-721
Dielectric Constant, 23°C, 10 GHz	4.1		ASTM D 2520 B / IPC-TM-650
Dissipation Factor, 23°C, 10 GHz	49	E-4	ASTM D 2520 B / IPC-TM-650

[OT]: One time tested

[1]: Black color, tested at 1.9GHz

[2]: Black color

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Physical/Other properties

Density	0.0639	lb/in³	ISO 1183

Injection

Drying Recommended	yes	
Drying Temperature	302	°F
Drying Time, Dehumidified Dryer	4 - 6	h
Processing Moisture Content	≤0.01	%
Melt Temperature Optimum	644	°F
Min. melt temperature	644	°F
Max. melt temperature	653	°F
Max. screw tangential speed	0.2 - 0.3	m/s
Mold Temperature Optimum	212	°F
Min. mold temperature	176	°F
Max. mold temperature	248	°F
Ejection temperature	565	°F

Characteristics

Processing	Injection Molding
Special characteristics	Platable, Heat stabilized or stable to heat, High Flow, Low Warpage, Laser Direct Structurable, Lead-free soldering resistant
Sustainability	Recycled Content

Additional information

Processing Notes

Pre-Drying

VECTRA should in principle be predried. Because of the necessary low maximum residual moisture content the use of dry air dryers is recommended. The dew point should be =< - 40° C. The time between drying and processing should be as short as possible.

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