VECTRA® A700

Liquid Crystal Polymer

Some conductivity. Suitable for electrostatic dissipation (ESD) applications. 30% glass reinforced.
Chemical abbreviation according to ISO 1043-1 : LCP Inherently flame retardant UL-Listing V-0 at 0.42mm thickness per UL 94 flame testing. Relative-Temperature-Index (RTI) according to UL 746B: electrical 130°C, mechanical 130°C. UL = Underwriters Laboratories (USA)

Product information

Resin Identification	LCP-GF30		ISO 1043
Part Marking Code	>LCP-GF30<		ISO 11469

Rheological properties

Molding shrinkage, parallel	0.2	%	ISO 294-4, 2577
Molding shrinkage, normal	0.4	%	ISO 294-4, 2577

Typical mechanical properties

Tensile modulus	2.03E6	psi	ISO 527-1/-2
Tensile stress at break, 5mm/min	20300	psi	ISO 527-1/-2
Tensile strain at break, 5mm/min	1.5	%	ISO 527-1/-2
Flexural modulus	2.03E6	psi	ISO 178
Flexural strength	31900	psi	ISO 178
Compressive modulus	2.1E6	psi	ISO 604
Compressive stress at 1% strain	14500	psi	ISO 604
Charpy impact strength, 23°C	7.14	ftlb/in²	ISO 179/1eU
Charpy notched impact strength, 23°C	3.33	ftlb/in²	ISO 179/1eA
Izod notched impact strength, 23°C	5.71	ftlb/in²	ISO 180/1A
Izod impact strength, 23°C	9.51	ftlb/in²	ISO 180/1U
Hardness, Rockwell, M-scale	85		ISO 2039-2

Thermal properties

Melting temperature, 10°C/min	536	°F	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	450	°F	ISO 75-1/-2
Temperature of deflection under load, 0.45 MPa	482	°F	ISO 75-1/-2
Temperature of deflection under load, 8 MPa	352	°F	ISO 75-1/-2
Vicat softening temperature, 50°C/h 50N	313	°F	ISO 306
Coefficient of linear thermal expansion (CLTE), parallel	0.04	E-4/°F	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	0.139	E-4/°F	ISO 11359-1/-2

Flammability

Burning Behav. at thickness h	V-0	class	IEC 60695-11-10

Electrical properties

Volume resistivity	1000	Ohm.m	IEC 62631-3-1
Surface resistivity	1000000	Ohm	IEC 62631-3-2
Comparative tracking index	175		IEC 60112

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Physical/Other properties

Density	0.0581	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	554	°F
Min. melt temperature	545	°F
Max. melt temperature	563	°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
Back pressure	435	psi

Characteristics

Processing	Injection Molding
Special characteristics	Increased electrical conductivity, Anti-static, Static dissipative, Flame retardant, Light stabilized or stable to light, High Flow

Additional information

Injection molding

Preprocessing

Vectra resins are well known for their excellent thermal and hydrolytic stability. In order to ensure these properties are optimum, the resin should be dried correctly prior to processing. Vectra A-grades should be dried at 150 C for a minimum of 4 hours in a desiccant dryer.

Processing

A three-zone screw evenly divided into feed, compression, and metering zones is preferred. A higher percentage of feed flights may be needed for smaller machines: 1/2 feed, 1/4 compression, 1/4 metering.

Vectra LCPs are shear thinning, their melt viscosity decreases quickly as shear rate increases. For parts that are difficult to fill, the molder can increase the injection velocity to improve melt flow.

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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Storage

For subsequent storage of the material in the dryer until processed the temperature does not need to be lowered for grades A, B, C, D and V (<= 24 h).

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