Celanese
The chemistry inside innovation™

VECTRA® E820iPd

40 % mineral , excellent flow, electrolytic metal platable
Catalytically modified E820i
Chemical abbreviation according to ISO 1043-1 : LCP Inherently flame retardant UL-Listing V-0 in natural at 1.5mm thickness per UL 94 flame testing. Relative-Temperature-Index (RTI) according to UL 746B: electrical 130 °C, mechanical 130 °C at 1.5mm. UL = Underwriters Laboratories (USA)

Rheological properties

Moulding shrinkage range, parallel	0.4	%	ISO 294-4, 2577
Moulding shrinkage range, normal	1.2	%	ISO 294-4, 2577

Typical mechanical properties

Tensile Modulus	8000	MPa	ISO 527-1/-2
Stress at break, 5mm/min	89	MPa	ISO 527-1/-2
Strain at break, 5mm/min	3.6	%	ISO 527-1/-2
Flexural Modulus	8800	MPa	ISO 178
Flexural Strength	120	MPa	ISO 178
Charpy impact strength, 23 °C	30	kJ/m²	ISO 179/1eU
Charpy notched impact strength, 23 °C	4	kJ/m²	ISO 179/1eA
Izod notched impact strength, 23 °C	4	kJ/m²	ISO 180/1A
Izod impact strength, 23 °C	28	kJ/m²	ISO 180/1U

Thermal properties

Temp. of deflection under load, 1.8 MPa	215	°C	ISO 75-1/-2
Temp. of deflection under load, 0.45 MPa	255	°C	ISO 75-1/-2
Temp. of deflection under load, 8 MPa	119	°C	ISO 75-1/-2
Coeff. of linear therm. expansion, parallel	23	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	49	E-6/K	ISO 11359-1/-2

Flammability

Burning Behav. at thickness h	V-0	class	UL 94

Electrical properties

Dissipation factor, 1MHz	163	E-4	IEC 62631-2-1
Comparative tracking index	PLC 3	PLC	UL 746A

Other properties

Density	1790	kg/m³	ISO 1183

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Injection

Drying Temperature	170	°C
Drying Time, Dehumidified Dryer	4 - 6	h
Processing Moisture Content	0.01	%
Screw tangential speed	0.17 - 0.18	m/s
Max. mould temperature	80 - 120	°C
Back pressure	3	MPa
Injection speed	very fast	

Characteristics

Additives	Mineral Filler

Additional information

Injection molding	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 Texts

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.
Longer pre-drying times/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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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 Ei-grades and Vectra V143XL should be dried at 150°C for a minimum of 6 hours or at 170°C for a minimum of 4 hours in a desiccant dryer.