Celanese
The chemistry inside innovation™

VECTRA® E540i

40% mineral, low warp & easy flow with smooth surface appearance
Mineral filled grade with low warp, easy flow and smooth surface appearance.
Chemical abbreviation according to ISO 1043-1 : LCP Inherently flame retardant FDA compliant. UL-Listing V-0 in natural and black at1.5mm thickness per UL 94 flame testing. Relative-Temperature-Index (RTI) according to UL 746B: electrical 130°C, mechanical 130°C. UL = Underwriters Laboratories (USA)

Rheological properties

Moulding shrinkage range, parallel		%	ISO 294-4, 2577
Moulding shrinkage range, normal	0.5	%	ISO 294-4, 2577

Typical mechanical properties

Tensile Modulus	9000	MPa	ISO 527-1/-2
Stress at break, 5mm/min	100	MPa	ISO 527-1/-2
Strain at break, 5mm/min	2.9	%	ISO 527-1/-2
Flexural Modulus	10000	MPa	ISO 178
Flexural Strength	120	MPa	ISO 178
Compressive stress at 1% strain	53.1	MPa	ISO 604
Izod notched impact strength, 23°C	5	kJ/m²	ISO 180/1A
Izod impact strength, 23°C	35	kJ/m²	ISO 180/1U

Thermal properties

Melting temperature, 10°C/min	335	°C	ISO 11357-1/-3
Temp. of deflection under load, 1.8 MPa	230	°C	ISO 75-1/-2
Coeff. of linear therm. expansion, parallel	10	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	36	E-6/K	ISO 11359-1/-2

Flammability

Burning Behav. at thickness h	V-0	class	UL 94
Thickness tested	1.50	mm	UL 94

Electrical properties

Relative permittivity, 1MHz	3.6		IEC 62631-2-1
Dissipation factor, 1MHz	310	E-4	IEC 62631-2-1
Volume resistivity	1E14	Ohm.m	IEC 62631-3-1
Surface resistivity	1E15	Ohm	IEC 62631-3-2
Electric strength	46	kV/mm	IEC 60243-1
Comparative tracking index	PLC 3	PLC	UL 746A

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Other properties

Humidity absorption, 2mm	0.005	%	Sim. to ISO 62
Water absorption, 2mm	0.008	%	Sim. to ISO 62
Density	1740	kg/m³	ISO 1183

Injection

Drying Temperature	170	°C	
Drying Time, Dehumidified Dryer	4 - 6	h	
Processing Moisture Content	0.01	%	
Melt Temperature Optimum	350	°C	Internal
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.

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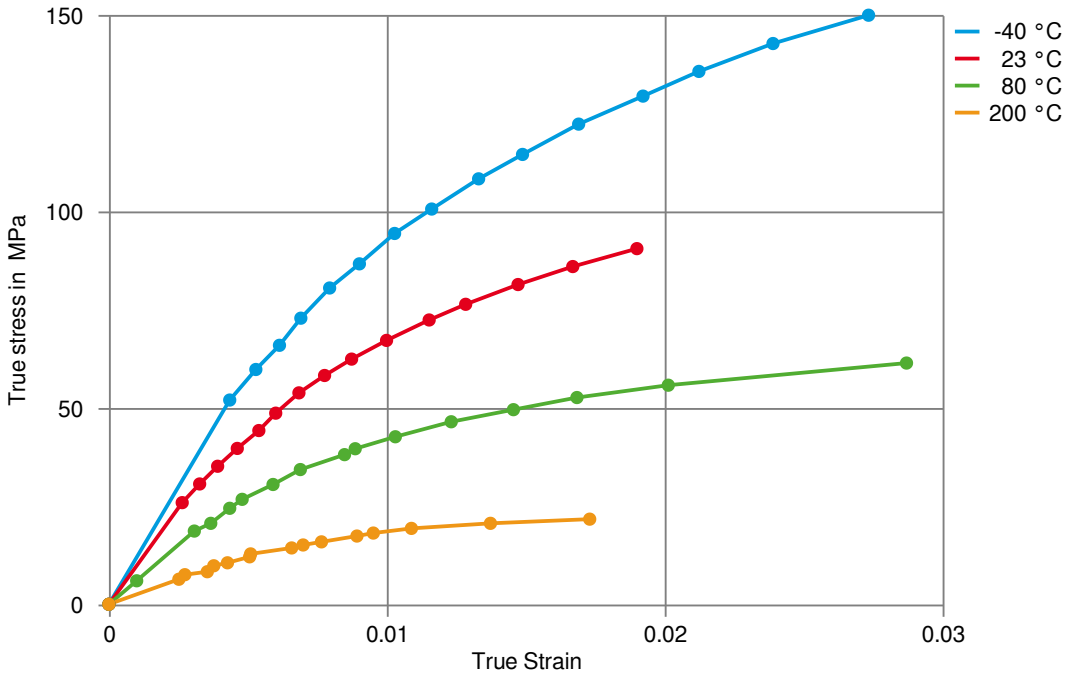
True stress-strain



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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).
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.
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.

Other Approvals

Other Approvals

OEM	Specification	Additional Information
Continental	TST N 055 72.03-001	
Mercedes-Benz Group (Daimler)		Lighting bezels