

VECTRA® A625 - LCP

Description

Good wear characteristics. 25% graphite filled. Chemical abbreviation according to ISO 1043-1 : LCP Inherently flame retardant UL-Listing V-0 at 0.45mm thickness per UL 94 flame testing. Relative-Temperature-Index (RTI) according to UL 746B: electrical 130°C, mechanical 130°C..
 UL = Underwriters Laboratories (USA)

Physical properties	Value	Unit	Test Standard
Density	1540	kg/m ³	ISO 1183
Molding shrinkage, parallel	0,1	%	ISO 294-4, 2577
Molding shrinkage, normal	0,5	%	ISO 294-4, 2577
Humidity absorption, 23°C/50%RH	0,03	%	ISO 62

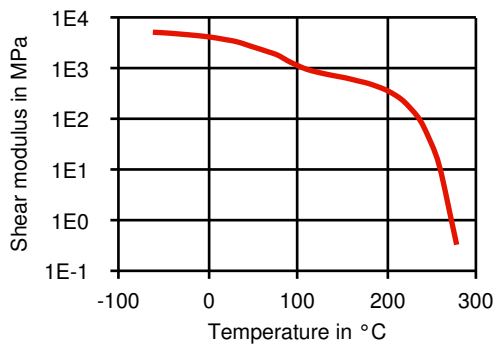
Mechanical properties	Value	Unit	Test Standard
Tensile modulus	9000	MPa	ISO 527-2/1A
Tensile stress at break, 5mm/min	140	MPa	ISO 527-2/1A
Tensile strain at break, 5mm/min	5,7	%	ISO 527-2/1A
Tensile creep modulus, 1h	9800	MPa	ISO 899-1
Tensile creep modulus, 1000h	7500	MPa	ISO 899-1
Flexural modulus, 23°C	10500	MPa	ISO 178
Flexural strength, 23°C	140	MPa	ISO 178
Charpy impact strength, 23°C	67	kJ/m ²	ISO 179/1eU
Charpy notched impact strength, 23°C	11	kJ/m ²	ISO 179/1eA
Izod impact notched, 23°C	22	kJ/m ²	ISO 180/1A
Izod impact unnotched, 23°C	62	kJ/m ²	ISO 180/1U
Compressive modulus	9000	MPa	ISO 604
Compressive stress at 1% strain	56	MPa	ISO 604
Rockwell hardness	62	M-Scale	ISO 2039-2

Thermal properties	Value	Unit	Test Standard
Melting temperature, 10°C/min	280	°C	ISO 11357-1/-3
DTUL at 1.8 MPa	185	°C	ISO 75-1, -2
DTUL at 0.45 MPa	225	°C	ISO 75-1, -2
DTUL at 8.0 MPa	114	°C	ISO 75-1, -2
Vicat softening temperature, 50°C/h 50N	159	°C	ISO 306
Coeff. of linear therm expansion, parallel	0,09	E-4/°C	ISO 11359-2
Coeff. of linear therm expansion, normal	0,3	E-4/°C	ISO 11359-2
Flammability at thickness h	V-0	class	UL 94
Thermal conductivity, flow	3,68	W/(m K)	ASTM E 1461
Thermal conductivity, crossflow	2,11	W/(m K)	ASTM E 1461
Thermal conductivity, thruplane	0,69	W/(m K)	ASTM E 1461
Specific heat	1350	J/(kg K)	ASTM E 1461

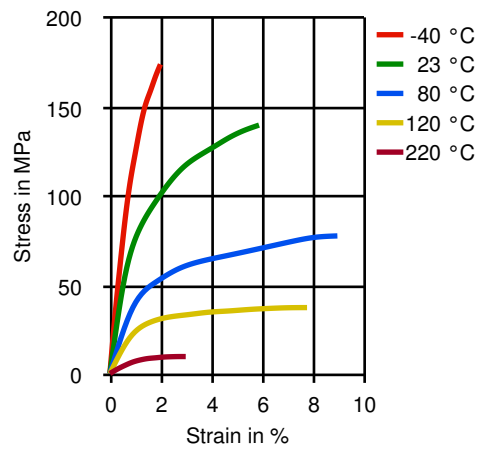
Electrical properties	Value	Unit	Test Standard
Relative permittivity, 100Hz	30	-	IEC 60250
Relative permittivity, 1MHz	13	-	IEC 60250
Dissipation factor, 100Hz	400	E-4	IEC 60250
Dissipation factor, 1MHz	1500	E-4	IEC 60250
Volume resistivity	1E14	Ohm*m	IEC 60093
Surface resistivity	1E11	Ohm	IEC 60093
Comparative tracking index	200	-	IEC 60112

Diagrams

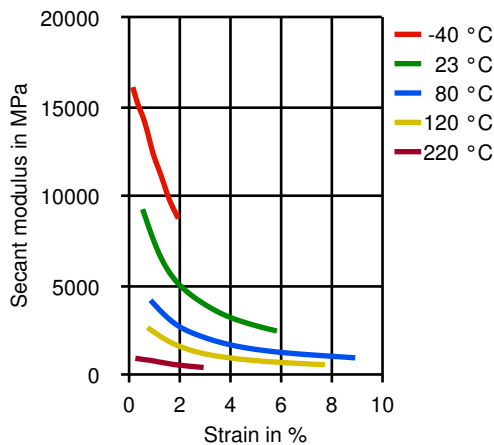
Dynamic Shear modulus-temperature



Stress-strain



Secant modulus-strain



Typical injection moulding processing conditions

	Value	Unit	Test Standard
Pre Drying			
Necessary low maximum residual moisture content	0,01	%	-
Drying time	4 - 6	h	-
Drying temperature	150	°C	-
Temperature			
	Value	Unit	Test Standard
Hopper temperature	20 - 30	°C	-
Feeding zone temperature	60 - 80	°C	-
Zone1 temperature	270 - 280	°C	-
Zone2 temperature	275 - 285	°C	-
Zone3 temperature	280 - 290	°C	-
Zone4 temperature	285 - 295	°C	-
Nozzle temperature	290 - 300	°C	-
Melt temperature	285 - 295	°C	-
Mold temperature	80 - 120	°C	-
Hot runner temperature	285 - 295	°C	-
Pressure			
	Value	Unit	Test Standard
Injection pressure	500 - 1500	bar	-
Hold pressure	500 - 1500	bar	-
Back pressure max.	30	bar	-
Speed			
	Value	Unit	Test Standard
Injection speed	very fast	-	-
Screw Speed			
	Value	Unit	Test Standard
Screw speed diameter, 16mm	200	RPM	-
Screw speed diameter, 25mm	140	RPM	-
Screw speed diameter, 40mm	80	RPM	-

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Other	Value	Unit	Test Standard
Specimen thickness (shrinkage)	3,18	mm	Internal

Other text information

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 $\leq -40^{\circ}\text{C}$. 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 ($\leq 24\text{ h}$).

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.

Characteristics

Special Characteristics

Flame retardant, Light stabilized

Processing

Injection molding

Product Categories

Specialty

Delivery Form

Pellets

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General Disclaimer

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