Celanese
The chemistry inside innovation™

VECTRA® A625

25% graphite, good wear characteristics
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)

Rheological properties

Moulding shrinkage range, parallel	0.1	%	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	140	MPa	ISO 527-1/-2
Strain at break, 5mm/min	5.7	%	ISO 527-1/-2
Flexural Modulus	10500	MPa	ISO 178
Flexural Strength	140	MPa	ISO 178
Compressive modulus	9000	MPa	ISO 604
Compressive stress at 1% strain	56	MPa	ISO 604
Tensile creep modulus, 1h	9800	MPa	ISO 899-1
Tensile creep modulus, 1000h	7500	MPa	ISO 899-1
Charpy impact strength, 23°C	67	kJ/m²	ISO 179/1eU
Charpy notched impact strength, 23°C	11	kJ/m²	ISO 179/1eA
Izod notched impact strength, 23°C	22	kJ/m²	ISO 180/1A
Izod impact strength, 23°C	62	kJ/m²	ISO 180/1U
Hardness, Rockwell, M-scale	62		ISO 2039-2

Thermal properties

Melting temperature, 10°C/min	280	°C	ISO 11357-1/-3
Temp. of deflection under load, 1.8 MPa	185	°C	ISO 75-1/-2
Temp. of deflection under load, 0.45 MPa	225	°C	ISO 75-1/-2
Temp. of deflection under load, 8 MPa	114	°C	ISO 75-1/-2
Coeff. of linear therm. expansion, parallel	9	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	30	E-6/K	ISO 11359-1/-2
Spec. heat capacity solid	1350	J/(kg K)	Internal

Flammability

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

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Electrical properties

Relative permittivity, 100Hz	30		IEC 62631-2-1
Relative permittivity, 1MHz	13		IEC 62631-2-1
Dissipation factor, 100Hz	400	E-4	IEC 62631-2-1
Dissipation factor, 1MHz	1500	E-4	IEC 62631-2-1
Volume resistivity	1E14	Ohm.m	IEC 62631-3-1
Surface resistivity	1E11	Ohm	IEC 62631-3-2
Comparative tracking index	PLC 3	PLC	UL 746A

Other properties

Humidity absorption, 2mm	0.03	%	Sim. to ISO 62
Density	1540	kg/m³	ISO 1183

Injection

Drying Temperature	150	°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	

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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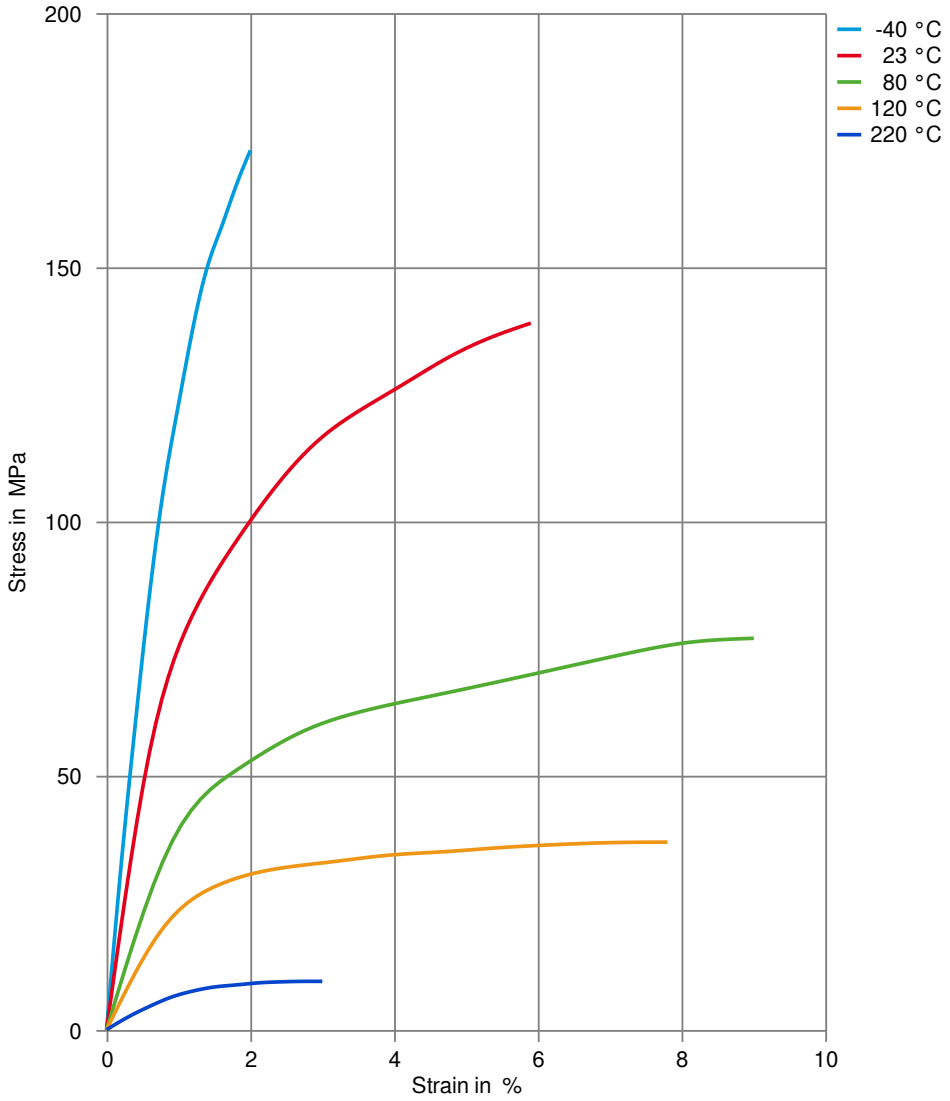
Stress-strain



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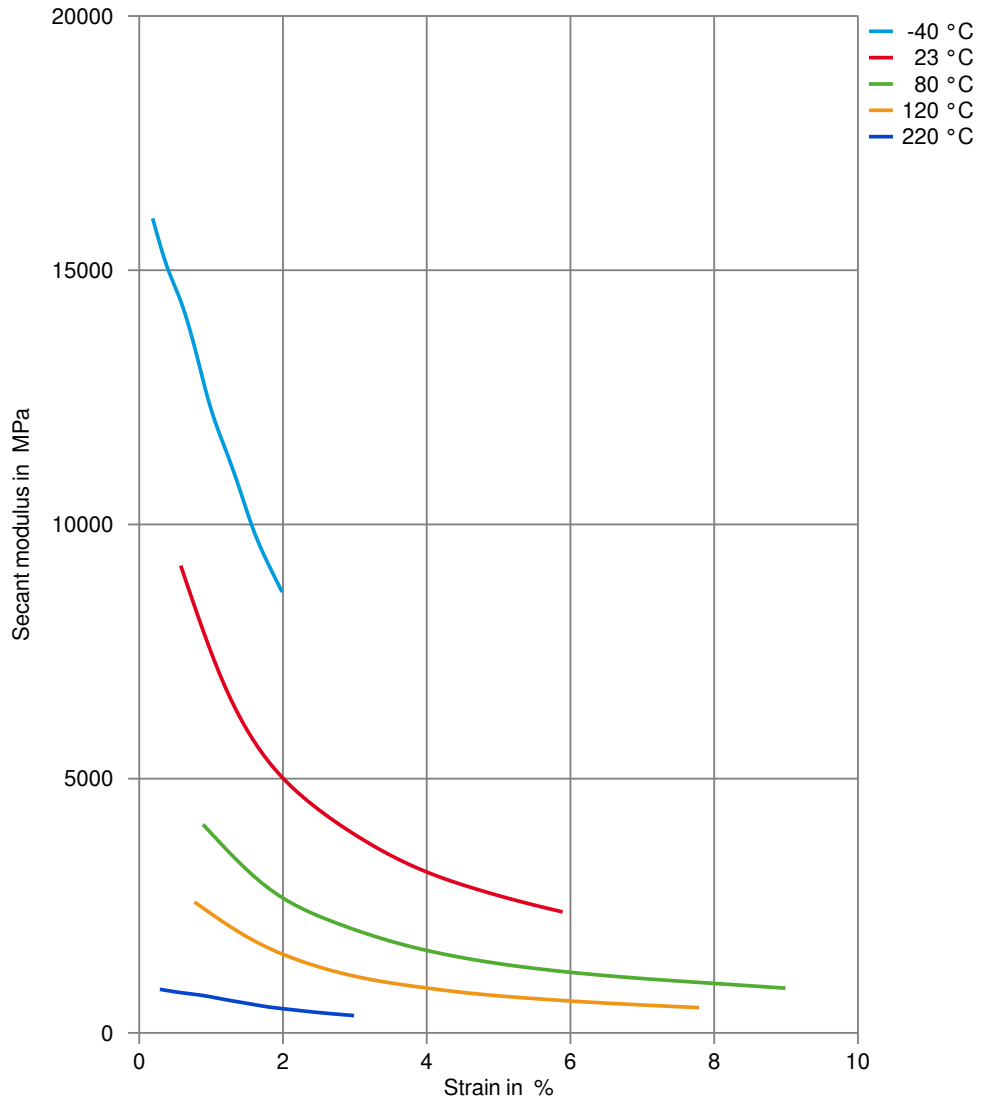
Secant modulus-strain



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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 A-grades should be dried at 150 C for a minimum of 4 hours in a desiccant dryer.

Other Approvals

Other Approvals

OEM	Specification
Continental	TST N 055 72.03-001