

VECTRA® S471 | LCP | Mineral / Glass Reinforced

Description

High flow, High Heat resistance, Low Warpage, for Thick Walled (>0.2mm) or thin (<0.2mm)& Thick Walled combination parts.

Chemical abbreviation according to ISO 1043-1 : LCP
Inherently flame retardant

UL-Listing V-0 in natural and black at 0.4mm thickness per UL 94 flame testing.
Relative-Temperature-Index (RTI) according to UL 746B: electricals 130°C, mechanicals 130°C.

UL = Underwriters Laboratories (USA)

Physical properties	Value	Unit	Test Standard
Density	1760	kg/m ³	ISO 1183
Mold shrinkage - parallel	0.2	%	ISO 294-4
Mold shrinkage - normal	0.5	%	ISO 294-4

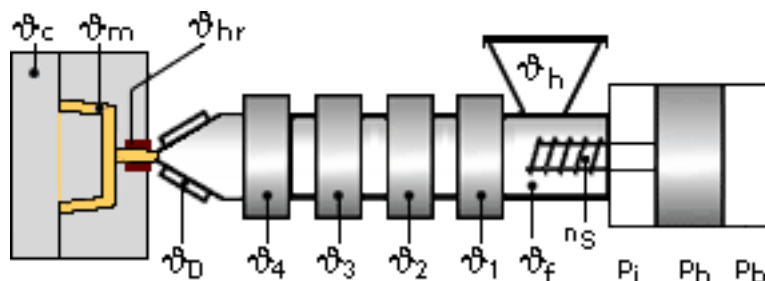
Mechanical properties	Value	Unit	Test Standard
Tensile modulus (1mm/min)	12000	MPa	ISO 527-2/1A
Tensile stress at break (5mm/min)	120	MPa	ISO 527-2/1A
Tensile strain at break (5mm/min)	1.4	%	ISO 527-2/1A
Flexural modulus (23°C)	12000	MPa	ISO 178
Flexural strength (23°C)	185	MPa	ISO 178
Flexural strain @ break	2	%	ISO 178
Charpy impact strength @ 23°C	10.0	kJ/m ²	ISO 179/1eU
Charpy notched impact strength @ 23°C	6.0	kJ/m ²	ISO 179/1eA
Notched impact strength (Izod) @ 23°C	8.0	kJ/m ²	ISO 180/1A

Thermal properties	Value	Unit	Test Standard
Melting temperature (10°C/min)	350	°C	ISO 11357-1,-2,-3
DTUL @ 1.8 MPa	315	°C	ISO 75-1/-2
DTUL @ 8.0 MPa	271	°C	ISO 75-1/-2
Coeff.of linear therm. expansion (parallel)	0.08	E-4/°C	ISO 11359-2
Coeff.of linear therm. expansion (normal)	0.17	E-4/°C	ISO 11359-2
Flammability at thickness h	V-0	class	UL94

Electrical properties	Value	Unit	Test Standard
Relative permittivity - 1 MHz	4	-	IEC 60250
Dissipation factor - 1 MHz	70	E-4	IEC 60250
Volume resistivity	1E14	Ohm*m	IEC 60093
Surface resistivity	1E11	Ohm	IEC 60093
Comparative tracking index CTI	150	-	IEC 60112

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Typical injection moulding processing conditions



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.

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).

Drying time: 6 h

Drying temperature: 150 - 170 °C

Temperature:

	$\vartheta_{\text{Manifold}}$	ϑ_{Mold}	ϑ_{Melt}	$\vartheta_{\text{Nozzle}}$	ϑ_{Zone4}	ϑ_{Zone3}	ϑ_{Zone2}	ϑ_{Zone1}	ϑ_{Feed}	$\vartheta_{\text{Hopper}}$
min (°C)	355	80	360	355	355	345	340	330	60	20
max (°C)	370	120	375	370	370	365	360	350	80	40

Pressure:

	Inj press	Hold press	Back pressure
min (bar)	500	500	0
max (bar)	1500	1500	30

Speed:

Injection speed: medium

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: $\frac{1}{2}$ feed, $\frac{1}{4}$ compression, $\frac{1}{4}$ 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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General Disclaimer

NOTICE TO USERS: Values shown are based on testing of laboratory test specimens and represent data that fall within the standard range of properties for natural material. These values alone do not represent a sufficient basis for any part design and are not intended for use in establishing maximum, minimum, or ranges of values for specification purposes. Colorants or other additives may cause significant variations in data values.

Properties of molded parts can be influenced by a wide variety of factors including, but not limited to, material selection, additives, part design, processing conditions and environmental exposure. Any determination of the suitability of a particular material and part design for any use contemplated by the users and the manner of such use is the sole responsibility of the users, who must assure themselves that the material as subsequently processed meets the needs of their particular product or use.

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