Ticona
Performance Driven Solutions™

VECTRA® A725 | LCP | Specialty

Description

Conductive Vectra grade, smooth surface compared to A700. 25% filled grade.

Chemical abbreviation according to ISO 1043-1 : LCP
Inherently flame retardant
UL-Listing V-0 at 0.83mm 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	**1560**	kg/m³	ISO 1183
Mold shrinkage - parallel	**0.3**	%	ISO 294-4
Mold shrinkage - normal	**0.8**	%	ISO 294-4

Mechanical properties	Value	Unit	Test Standard
Tensile modulus (1mm/min)	**8100**	MPa	ISO 527-2/1A
Tensile stress at break (5mm/min)	**92**	MPa	ISO 527-2/1A
Tensile strain at break (5mm/min)	**4.2**	%	ISO 527-2/1A
Flexural modulus (23°C)	**7800**	MPa	ISO 178
Flexural strength (23°C)	**124**	MPa	ISO 178
Charpy impact strength @ 23°C	**31**	kJ/m²	ISO 179/1eU
Charpy notched impact strength @ 23°C	**17**	kJ/m²	ISO 179/1eA
Unnotched impact str (Izod) @ 23°C	**22**	kJ/m²	ISO 180/1U
Notched impact strength (Izod) @ 23°C	**17**	kJ/m²	ISO 180/1A
Rockwell hardness	**44**	M-Scale	ISO 2039-2

Thermal properties	Value	Unit	Test Standard
Melting temperature (10°C/min)	**280**	°C	ISO 11357-1,-2,-3
DTUL @ 1.8 MPa	**160**	°C	ISO 75-1/-2
DTUL @ 8.0 MPa	**93**	°C	ISO 75-1/-2
Coeff.of linear therm. expansion (parallel)	**0.1**	E-4/°C	ISO 11359-2
Coeff.of linear therm. expansion (normal)	**0.31**	E-4/°C	ISO 11359-2
Flammability at thickness h	**V-0**	class	UL94

Electrical properties	Value	Unit	Test Standard
Volume resistivity	**1000**	Ohm*m	IEC 60093
Surface resistivity	**1E6**	Ohm	IEC 60093

Test specimen production	Value	Unit	Test Standard
Injection molding melt temperature	**293**	°C	ISO 294
Injection molding mold temperature	**60**	°C	ISO 294
Injection molding flow front velocity	**150**	mm/s	ISO 294
Injection molding hold pressure	**48**	MPa	ISO 294

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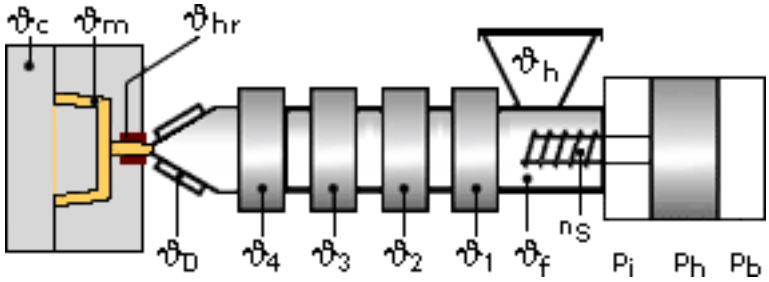
Typical injection moulding processing conditions



Pre Drying:

Necessary low maximum residual moisture content: 0.01%

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.

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: 4 - 6 h

Drying temperature: 150 - 150 °C

Temperature:

	ϑ Manifold	ϑ Mold	ϑ Melt	ϑ Nozzle	ϑ Zone4	ϑ Zone3	ϑ Zone2	ϑ Zone1	ϑ Feed	ϑ Hopper
min (°C)	285	80	285	290	285	280	275	270	60	20
max (°C)	295	120	295	300	295	290	285	280	80	30

Pressure:

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

Speed:

Injection speed: very fast

Screw speed

Screw diameter (mm)	16	25	40	55	75
Screw speed (RPM)	200	140	80	-	-

Special Info:

When using short metering strokes an accumulator is recommended to get short injection times

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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