VECTRA® E820iPd | LCP | Specialty

Description

Catalytically modified E820i

Chemical abbreviation according to ISO 1043-1 : LCP
Inherently flame retardant
UL-Listing V-0 in natural at 1.5mm thickness per UL 94 flame testing.
Relative-Temperature-Index (RTI) according to UL 746B: electrical 130°C, mechanical 130°C at 1.5mm.

UL = Underwriters Laboratories (USA)

Physical properties	Value	Unit	Test Standard
Density	**1790**	kg/m³	ISO 1183
Mold shrinkage - parallel	**0.4**	%	ISO 294-4
Mold shrinkage - normal	**1.2**	%	ISO 294-4

Mechanical properties	Value	Unit	Test Standard
Tensile modulus (1mm/min)	**8000**	MPa	ISO 527-2/1A
Tensile stress at break (5mm/min)	**89**	MPa	ISO 527-2/1A
Tensile strain at break (5mm/min)	**3.6**	%	ISO 527-2/1A
Flexural modulus (23°C)	**8800**	MPa	ISO 178
Flexural strength (23°C)	**120**	MPa	ISO 178
Flexural strain @ flexural strength	**3.2**	%	ISO 178
Charpy impact strength @ 23°C	**30.0**	kJ/m²	ISO 179/1eU
Charpy notched impact strength @ 23°C	**4**	kJ/m²	ISO 179/1eA
Unnotched impact str (Izod) @ 23°C	**28**	kJ/m²	ISO 180/1U
Notched impact strength (Izod) @ 23°C	**4.0**	kJ/m²	ISO 180/1A

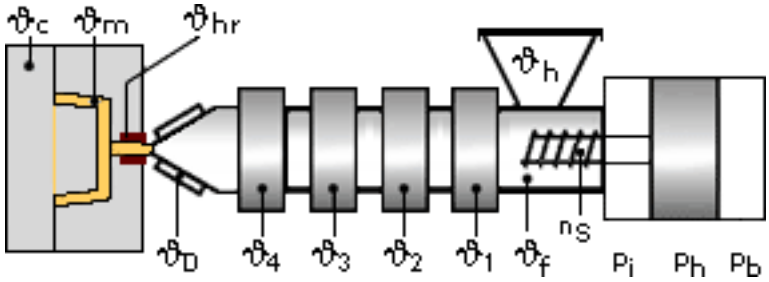
Thermal properties	Value	Unit	Test Standard
DTUL @ 1.8 MPa	**215**	°C	ISO 75-1/-2
DTUL @ 0.45 MPa	**255**	°C	ISO 75-1/-2
DTUL @ 8.0 MPa	**119**	°C	ISO 75-1/-2
Coeff.of linear therm. expansion (parallel)	**0.23**	E-4/°C	ISO 11359-2
Coeff.of linear therm. expansion (normal)	**0.49**	E-4/°C	ISO 11359-2
Flammability at thickness h	**V-0**	class	UL94

Electrical properties	Value	Unit	Test Standard
Dissipation factor - 1 MHz	**163**	E-4	IEC 60250
Comparative tracking index CTI	**175**	-	IEC 60112

Test specimen production	Value	Unit	Test Standard
Injection molding melt temperature	**340**	°C	ISO 294
Injection molding mold temperature	**100**	°C	ISO 294
Injection molding flow front velocity	**150**	mm/s	ISO 294
Injection molding hold pressure	**69**	MPa	ISO 294

VECTRA® E820iPd | LCP | Specialty

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: 170 - 170 °C

Temperature:

	ϑManifold	ϑMold	ϑMelt	ϑNozzle	ϑZone4	ϑZone3	ϑZone2	ϑZone1	ϑFeed	ϑHopper
min (°C)	335	80	335	335	330	325	320	315	60	20
max (°C)	345	120	345	345	340	335	330	325	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:

For MID applications mold temperature between 120 - 140°C are recommended. For applications with extremely thin wall applications pre-humidity of max. 0,01% is recommended. When using short metering strokes an accumulator is recommended to get short injec

VECTRA® E820iPd | LCP | Specialty

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.

Contact Information

Americas
8040 Dixie Highway, Florence, KY 41042 USA
Product Information Service
t: +1-800-833-4882 t: +1-859-372-3244
Customer Service
t: +1-800-526-4960 t: +1-859-372-3214
e: info-engineeredmaterials-am@celanese.com

Asia
4560 Jinke Road, Zhang Jiang Hi Tech Park
Shanghai 201203 PRC
Customer Service
t: +86 21 3861 9266 f: +86 21 3861 9599
e: info-engineeredmaterials-asia@celanese.com

Europa
Am Unisys-Park 1, 65843 Sulzbach, Germany
Product Information Service
t: +(00)-800-86427-531 t: +49-(0)-69-45009-1011
e: info-engineeredmaterials-eu@celanese.co

General Disclaimer