Celanese
The chemistry inside innovation™

VECTRA® S471

Liquid Crystal Polymer

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)

Product information

Resin Identification	LCP-(GF+MD)46		ISO 1043
Part Marking Code	>LCP-(GF+MD)46<		ISO 11469

Rheological properties

Molding shrinkage, parallel	0.2	%	ISO 294-4, 2577
Molding shrinkage, normal	0.5	%	ISO 294-4, 2577

Typical mechanical properties

Tensile modulus	1.89E6	psi	ISO 527-1/-2
Tensile stress at break, 5mm/min	16000	psi	ISO 527-1/-2
Tensile strain at break, 5mm/min	1.1	%	ISO 527-1/-2
Flexural modulus	2.03E6	psi	ISO 178
Flexural strength	24700	psi	ISO 178
Flexural strain at failure	2	%	ISO 178
Charpy impact strength, 23°C	4.76	ftlb/in²	ISO 179/1eU
Charpy notched impact strength, 23°C	2.38	ftlb/in²	ISO 179/1eA
Izod notched impact strength, 23°C	3.33	ftlb/in²	ISO 180/1A
Izod notched impact strength, -40°C	2.38	ftlb/in²	ISO 180/1A

Thermal properties

Melting temperature, 10°C/min	662	°F	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	599	°F	ISO 75-1/-2
Temperature of deflection under load, 8 MPa	520	°F	ISO 75-1/-2
Coefficient of linear thermal expansion (CLTE), parallel	0.04	E-4/°F	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	0.0944	E-4/°F	ISO 11359-1/-2
Specific heat capacity solid	1260	J/(kg K)	ISO 22007-4

Flammability

Burning Behav. at thickness h	V-0	class	IEC 60695-11-10

Electrical properties

Relative permittivity, 1MHz	4		IEC 62631-2-1
Relative permittivity, 1GHz	4.08[OT]		IEC 61189-2-721
Relative permittivity, 2GHz	4.16[OT, 1]		IEC 61189-2-721
Relative permittivity, 10GHz	4.15[OT]		IEC 61189-2-721
Dissipation factor, 1MHz	70	E-4	IEC 62631-2-1
Dissipation factor, 1GHz	19[OT]	E-4	IEC 61189-2-721

VECTRA® S471

Liquid Crystal Polymer

Dissipation factor, 2GHz	22[OT, 1]	E-4	IEC 61189-2-721
Dissipation factor, 10GHz	20[OT]	E-4	IEC 61189-2-721
Volume resistivity	1E14	Ohm.m	IEC 62631-3-1
Surface resistivity	1E11	Ohm	IEC 62631-3-2
Comparative tracking index	200		IEC 60112

[OT]: One time tested

[1]: Tested at 1.9GHz

Physical/Other properties

Density	0.0635	lb/in³	ISO 1183

Injection

Drying Recommended	yes	
Drying Temperature	302	°F
Drying Time, Dehumidified Dryer	4 - 6	h
Processing Moisture Content	≤0.01	%
Melt Temperature Optimum	689	°F
Min. melt temperature	680	°F
Max. melt temperature	707	°F
Max. screw tangential speed	0.2 - 0.3	m/s
Mold Temperature Optimum	212	°F
Min. mold temperature	176	°F
Max. mold temperature	248	°F
Back pressure	435	psi
Ejection temperature	554	°F

Characteristics

Processing	Injection Molding
Special characteristics	Flame retardant, Heat stabilized or stable to heat, High Flow, Low Warpage, Lead-free soldering resistant

Additional information

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 S-grades should be dried at 150°C for a minimum of 6 hours or at 170°C for a minimum of 4 hours in a desiccant dryer.

Processing

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: ½ feed, ¼ compression, ¼ 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

VECTRA® S471

Liquid Crystal Polymer

injection velocity to improve melt flow.

Processing Notes

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.

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).

Revised: 2025-10-13 Source: Celanese Materials Database

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. Other than those products expressly identified as medical grade (including by MT® product designation or otherwise), Celanese's products are not intended for use in medical or dental implants. Regardless of any such product designation, 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. To the best of our knowledge, the information contained in this publication is accurate; however, we do not assume any liability whatsoever for the accuracy and completeness of such information. The information contained in this publication should not be construed as a promise or guarantee of specific properties of our products. It is the sole responsibility of the users to investigate whether any existing patents are infringed by the use of the materials mentioned in this publication. Moreover, there is a need to reduce human exposure to many materials to the lowest practical limits in view of possible adverse effects. To the extent that any hazards may have been mentioned in this publication, we neither suggest nor guarantee that such hazards are the only ones that exist. We recommend that persons intending to rely on any recommendation or to use any equipment, processing technique or material mentioned in this publication should satisfy themselves that they can meet all applicable safety and health standards. We strongly recommend that users seek and adhere to the manufacturer's current instructions for handling each material they use, and entrust the handling of such material to adequately trained personnel only. Please call the telephone numbers listed for additional technical information. Call Customer Services for the appropriate Materials Safety Data Sheets (MSDS) before attempting to process our products.
Copyright © 2026 Celanese or its affiliates. All rights reserved.
Celanese®, registered C-ball design and all other trademarks identified herein with ®, TM, SM, unless otherwise noted, are trademarks of Celanese or its affiliates.