

DuPont™ Zenite® LCP

liquid crystal polymer resin

PRELIMINARY DATA

Zenite® FG7145L BK011

Zenite® FG7145L BK011 is a 45% glass reinforced, lubricated liquid crystal polymer resin with FDA approval for use in repeated food-contact applications.

Property	Test Method	Units	Value
Identification			
Resin Identification	ISO 1043		LCP-GF45
Part Marking Code	ISO 11469		>LCP-GF45<
Mechanical			
Stress at Break, 1.0mm	ISO 527	MPa (kpsi)	
-40°C (-40°F)			190 (27.5)
-30°C (-20°F)			180 (26.1)
23°C (73°F)			140 (20.3)
120°C (250°F)			55 (8)
150°C (300°F)			50 (7.3)
200°C (390°F)			40 (5.8)
250°C (480°F)			30 (4.4)
Stress at Break, 2.0mm	ISO 527	MPa (kpsi)	
-40°C (-40°F)			180 (26.1)
-30°C (-20°F)			165 (24)
23°C (73°F)			130 (18.8)
120°C (250°F)			50 (7.3)
150°C (300°F)			45 (6.5)
200°C (390°F)			35 (5.1)
250°C (480°F)			25 (3.6)

Contact DuPont for Material Safety Data Sheet, general guides and/or additional information about ventilation, handling, purging, drying, etc.
 ISO Mechanical properties measured at 4.0mm, ISO Electrical properties measured at 2.0mm, and all ASTM properties measured at 3.2mm.
 Test temperatures are 23°C unless otherwise stated.

During molding, use protective equipment and clothing. Skin contact with molten Zenite® resins can cause severe burns. Be particularly alert during purging.

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Property	Test Method	Units	Value
Mechanical			
Stress at Break, 4.0mm	ISO 527	MPa (kpsi)	
-40°C (-40°F)			160 (23.2)
-30°C (-20°F)			150 (21.7)
23°C (73°F)			120 (17.4)
120°C (250°F)			45 (6.5)
150°C (300°F)			40 (5.8)
200°C (390°F)			30 (4.4)
250°C (480°F)			20 (2.9)
Strain at Break, 1.0mm	ISO 527	%	
-40°C (-40°F)			0.6
-30°C (-20°F)			0.6
23°C (73°F)			0.6
120°C (250°F)			0.4
150°C (300°F)			0.4
200°C (390°F)			0.3
250°C (480°F)			0.3
Strain at Break, 2.0mm	ISO 527	%	
-40°C (-40°F)			0.9
-30°C (-20°F)			0.9
23°C (73°F)			0.9
120°C (250°F)			0.7
150°C (300°F)			0.7
200°C (390°F)			0.6
250°C (480°F)			0.7

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Property	Test Method	Units	Value
Mechanical			
Strain at Break, 4.0mm	ISO 527	%	
-40°C (-40°F)			0.9
-30°C (-20°F)			0.9
23°C (73°F)			0.9
120°C (250°F)			0.6
150°C (300°F)			0.6
200°C (390°F)			0.7
250°C (480°F)			0.6
Tensile Modulus, 1.0mm	ISO 527	MPa (kpsi)	
-40°C (-40°F)			27000 (3900)
-30°C (-20°F)			25000 (3650)
23°C (73°F)			22000 (3200)
120°C (250°F)			13000 (1900)
150°C (300°F)			12000 (1750)
200°C (390°F)			11000 (1600)
250°C (480°F)			7500 (1100)
Tensile Modulus, 2.0mm	ISO 527	MPa (kpsi)	
-40°C (-40°F)			26000 (3800)
-30°C (-20°F)			24500 (3550)
23°C (73°F)			20500 (3000)
120°C (250°F)			12500 (1800)
150°C (300°F)			11500 (1700)
200°C (390°F)			10000 (1450)
250°C (480°F)			7000 (1050)

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Property	Test Method	Units	Value
Mechanical			
Tensile Modulus, 4.0mm	ISO 527	MPa (kpsi)	
-40°C (-40°F)			24500 (3550)
-30°C (-20°F)			23500 (3400)
23°C (73°F)			18000 (2610)
120°C (250°F)			12000 (1750)
150°C (300°F)			11000 (1600)
200°C (390°F)			9000 (1300)
250°C (480°F)	6000 (850)		
Flexural Modulus, 1.0mm	ISO 178	MPa (kpsi)	
-40°C (-40°F)			25500 (3700)
-30°C (-20°F)			25000 (3650)
23°C (73°F)			24000 (3500)
120°C (250°F)			18000 (2600)
150°C (300°F)			15000 (2200)
200°C (390°F)			12000 (1750)
250°C (480°F)	9000 (1300)		
Flexural Modulus, 2.0mm	ISO 178	MPa (kpsi)	
-40°C (-40°F)			22500 (3300)
-30°C (-20°F)			21500 (3100)
23°C (73°F)			20500 (2900)
120°C (250°F)			15000 (2200)
150°C (300°F)			14000 (2050)
200°C (390°F)			10000 (1450)
250°C (480°F)	8000 (1150)		

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Property	Test Method	Units	Value
Mechanical			
Flexural Modulus, 4.0mm	ISO 178	MPa (kpsi)	
-40°C (-40°F)			21000 (3050)
-30°C (-20°F)			20000 (2900)
23°C (73°F)			17500 (2550)
120°C (250°F)			13000 (1900)
150°C (300°F)			12500 (1800)
200°C (390°F)			9000 (1300)
250°C (480°F)	5000 (750)		
Flexural Strength, 1.0mm	ISO 178	MPa (kpsi)	
-40°C (-40°F)			300 (43.5)
-30°C (-20°F)			280 (40.6)
23°C (73°F)			230 (33.3)
120°C (250°F)			100 (14.5)
150°C (300°F)			90 (13.0)
200°C (390°F)			55 (8.0)
250°C (480°F)	30 (4.4)		
Flexural Strength, 2.0mm	ISO 178	MPa (kpsi)	
-40°C (-40°F)			270 (39.2)
-30°C (-20°F)			255 (36.9)
23°C (73°F)			210 (30.4)
120°C (250°F)			90 (13.0)
150°C (300°F)			80 (11.6)
200°C (390°F)			50 (7.3)
250°C (480°F)	20 (2.9)		

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Property	Test Method	Units	Value
Mechanical			
Flexural Strength, 4.0mm	ISO 178	MPa (kpsi)	
-40°C (-40°F)			250 (36.3)
-30°C (-20°F)			240 (34.8)
23°C (73°F)			180 (26.1)
120°C (250°F)			80 (11.6)
150°C (300°F)			70 (10.2)
200°C (390°F)			45 (6.5)
250°C (480°F)	10 (1.5)		
Notched Charpy Impact Strength	ISO 179/1eA	kJ/m ²	
-30°C (-22°F)			10
23°C (73°F)		10	
Unnotched Charpy Impact Strength	ISO 179/1eU	kJ/m ²	
-30°C (-22°F)			13
23°C (73°F)		18	
Thermal			
Deflection Temperature	ISO 75-1/-2	°C (°F)	
1.80MPa			295 (563)
Melting Temperature	ISO 11357-1/-3	°C (°F)	
10°C/min			352 (666)
Other			
Density	ISO 1183	kg/m ³ (g/cm ³)	1740 (1.74)
Molding Shrinkage	ISO 294-4	%	
Normal, 2.0mm			0.5
Parallel, 2.0mm			0.05

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Property	Test Method	Units	Value
Processing			
Melt Temperature Range		°C (°F)	360-370 (680-700)
Melt Temperature Optimum		°C (°F)	365 (690)
Mold Temperature Range		°C (°F)	40-150 (105-300)
Mold Temperature Optimum		°C (°F)	80 (175)
Drying Time, Dehumidified Dryer		h	3
Drying Temperature		°C (°F)	150 (304)
Processing Moisture Content		%	<0.01

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