

LNPTM LUBRICOMPTM COMPOUND DFL349

DFL-4034 FR

DESCRIPTION

LNP LUBRICOMP DFL349 compound is based on Polycarbonate (PC) resin containing 20% glass fiber, 15% PTFE. Added features of this grade include: Flame Retardant, Wear Resistant.

GENERAL INFORMATION	
Features	Flame Retardant, Wear resistant
Fillers	Glass Fiber, PTFE
Polymer Types	Polycarbonate (PC)
Processing Techniques	Injection Molding

INDUSTRY	SUB INDUSTRY
Building and Construction	Building Component
Consumer	Sport/Leisure, Personal Accessory, Home Appliances, Commercial Appliance
Electrical and Electronics	Mobile Phone - Computer - Tablets
Industrial	Electrical

TYPICAL PROPERTY VALUES

Revision 20231109

MECHANICAL (**) MPa ASTM D638 Tensile Stress, break 88 MPa ASTM D638 Tensile Strain, break 2.4 % ASTM D638 Tensile Modulus, 50 mm/min 6520 MPa ASTM D638 Flexural Stress 151 MPa ASTM D790 Flexural Modulus 5870 MPa ASTM D790 Tensile Stress, break 88 MPa S05 527 Tensile Stress, break 3.4 % ISO 527 Tensile Strain, break 220 MPa ISO 527 Flexural Stress 146 MPa ISO 527 Flexural Modulus 180 527 Tensile Modulus, 1 mm/min ISO 178 Flexural Stress 146 MPa ISO 180 18 Flexural Modulus 50 178 ISO 178 Flexural Stress 15 J/m ASTM D4812 Instrumented Junnotched, 23°C 50 1 J/m ASTM D4812 Instrumented Dart Impact Energy@peak, 23°C 15 J J ASTM D3763 Instrument	PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Tensile Strain, break 2.4 % ASTM D638 Tensile Modulus, 50 mm/min 5520 MPa ASTM D638 Flexural Stress 151 MPa ASTM D790 Flexural Modulus 5870 MPa ASTM D790 Tensile Stress, break 98 MPa ISO 527 Tensile Modulus, 1 mm/min 7220 MPa ISO 527 Flexural Stress 146 MPa ISO 178 Flexural Modulus 5830 MPa ISO 178 IMPACT ** 1 J/m ASTM D4812 Izod Impact, unnotched, 23°C 501 J/m ASTM D256 Instrumented Dart Impact Energy @ peak, 23°C 15 J ASTM D3763 Multiaxial Impact 12 J ISO 6603 Intermed. Unnotched 80°10°4 + 23°C 40 kJ/m² ISO 180/1U ItermAl. ** Impact, notched 80°10°4 + 23°C 40 kJ/m² ISO 180/1U ItermAl. ** Impact, notched 80°10°4 + 23°C 3 K Impact, notched 80°10°4 + 23°C 3 Impact, notched 80°1	MECHANICAL (1)			
Tensile Modulus, 50 mm/min 6520 MPa ASTM D638 Flexural Stress 151 MPa ASTM D790 Flexural Modulus 5870 MPa ASTM D790 Tensile Stress, break 98 MPa S0 527 Tensile Strain, break 3.4 % S0 527 Tensile Modulus, 1 mm/min 7220 MPa S0 178 Flexural Stress 146 MPa S0 178 Flexural Modulus 880 MPa S0 178 Internal Modulus 5830 MPa S0 178 Internal Modulus 5910 MPa S0 178 S1 MD 188 Internal Modulus 1910	Tensile Stress, break	88	MPa	ASTM D638
Flexural Stress 151 MPa ASTM D790 Flexural Modulus 5870 MPa ASTM D790 Tensile Stress, break 98 MPa ISO 527 Tensile Strain, break 3.4 % ISO 527 Tensile Modulus, 1 mm/min 7220 MPa ISO 178 Flexural Stress 146 MPa ISO 178 Impact Injurity 5830 MPa SO 178 Impact Injurity 59 J/m ASTM D4812 Icod Impact, unnotched, 23°C 15 J/m ASTM D256 Instrumented Dart Impact Energy @ peak, 23°C 15 J/m ASTM D363 Ikod Impact, unnotched 80°10°4 + 23°C 40 J/m² ISO 180/110 Icod Impact, notched 80°10°4 + 23°C 11 J/m² ISO 180/110 Icod Impact, notched 80°10°4 + 23°C 12 J/m² ISO 180/110 Ibod Impact, notched 80°10°4 + 23°C 13 J/m² SSM D648	Tensile Strain, break	2.4	%	ASTM D638
Flexural Modulus 5870 MPa ASTM D790 Tensile Stress, break 98 MPa ISO 527 Tensile Strain, break 3.4 % ISO 527 Tensile Modulus, 1 mm/min 7220 MPa ISO 527 Flexural Stress 146 MPa ISO 178 Flexural Modulus 5830 MPa ISO 178 IMPACT ************************************	Tensile Modulus, 50 mm/min	6520	MPa	ASTM D638
Tensile Stress, break 98 MPa ISO 527 Tensile Strain, break 3.4 % ISO 527 Tensile Modulus, 1 mm/min 7220 MPa ISO 527 Flexural Stress 146 MPa ISO 178 Impact Modulus 5830 MPa ISO 178 Impact III J/m ASTM D4812 Izod Impact, unnotched, 23°C 501 J/m ASTM D256 Instrumented Dart Impact Energy @ peak, 23°C 15 J ASTM D3763 Multiaxial Impact 12 J SO 6603 Izod Impact, unnotched 80°10°4 + 23°C 40 kJ/m² ISO 180/1U Izod Impact, notched 80°10°4 + 23°C 11 kJ/m² ISO 180/1A THERMAL (¹) THERMAL (¹) C ASTM D648	Flexural Stress	151	MPa	ASTM D790
Tensile Strain, break 3.4 % ISO 527 Tensile Modulus, 1 mm/min 7220 MPa ISO 527 Flexural Stress 146 MPa ISO 178 Flexural Modulus 5830 MPa ISO 178 IMPACT (¹) Impact, unnotched, 23°C 501 J/m ASTM D4812 Izod Impact, notched, 23°C 106 J/m ASTM D256 Instrumented Dart Impact Energy @ peak, 23°C 15 J ASTM D3763 Izod Impact, unnotched 80°10°4 + 23°C 40 kJ/m² ISO 180/10 Izod Impact, notched 80°10°4 + 23°C 11 kJ/m² ISO 180/10 THERMAL (¹) Impact, notched 80°10°4 + 23°C 137 °C ASTM D648	Flexural Modulus	5870	MPa	ASTM D790
Tensile Modulus, 1 mm/min 7220 MPa ISO 527 Flexural Stress 146 MPa ISO 178 Flexural Modulus 5830 MPa ISO 178 IMPACT (¹) Umpact, unnotched, 23°C J/m ASTM D4812 Izod Impact, notched, 23°C 106 J/m ASTM D256 Instrumented Dart Impact Energy @ peak, 23°C 15 J ASTM D3763 Izod Impact, unnotched 80*10*4 + 23°C 40 kJ/m² ISO 180/1U Izod Impact, notched 80*10*4 + 23°C 40 kJ/m² ISO 180/1A THERMAL (¹) Lord Impact, notched 80*10*4 + 23°C 317 °C ASTM D648	Tensile Stress, break	98	MPa	ISO 527
Flexural Stress Flexural Modulus Flexural Modu	Tensile Strain, break	3.4	%	ISO 527
Flexural Modulus MPA MPA MPA MPA MPA MPA MSD 178 MPA MPA MSTM D4812 MASTM D4812 MASTM D256 MASTM D256 MASTM D256 MASTM D256 MASTM D3763 MUltiaxial Impact Energy@peak, 23°C Multiaxial Impact Multiaxial Impact, unnotched 80°10°4+23°C MASTM D3763 MASTM D488 MASTM D488 MASTM D488 MASTM D488 MASTM D648	Tensile Modulus, 1 mm/min	7220	MPa	ISO 527
IMPACT (1) Izod Impact, unnotched, 23°C 501 J/m ASTM D4812 Izod Impact, notched, 23°C 106 J/m ASTM D256 Instrumented Dart Impact Energy@peak, 23°C 15 J ASTM D3763 Multiaxial Impact 12 J ISO 6603 Izod Impact, unnotched 80°10°4 +23°C 40 kJ/m² ISO 180/1U Izod Impact, notched 80°10°4 +23°C 11 kJ/m² ISO 180/1A THERMAL (1) THERMAL (2) C ASTM D648	Flexural Stress	146	MPa	ISO 178
Izod Impact, unnotched, 23°C 501 J/m ASTM D4812 Izod Impact, notched, 23°C 106 J/m ASTM D256 Instrumented Dart Impact Energy @ peak, 23°C 15 J ASTM D3763 Multiaxial Impact 12 J ISO 6603 Izod Impact, unnotched 80°10°4 + 23°C 40 kJ/m² ISO 180/10 Izod Impact, notched 80°10°4 + 23°C 11 kJ/m² ISO 180/1A THERMAL ⁽¹⁾ HDT, 1.82 MPa, 3.2mm, unannealed 137 °C ASTM D648	Flexural Modulus	5830	MPa	ISO 178
Izod Impact, notched, 23°C 106 J/m ASTM D256 Instrumented Dart Impact Energy @ peak, 23°C 15 J ASTM D3763 Multiaxial Impact 12 J ISO 6603 Izod Impact, unnotched 80°10°4 +23°C 40 kJ/m² ISO 180/1U Izod Impact, notched 80°10°4 +23°C 11 kJ/m² ISO 180/1A THERMAL (1) THERMAL (2) C ASTM D648	IMPACT (1)			
Instrumented Dart Impact Energy @ peak, 23°C 15 J ASTM D3763 Multiaxial Impact 12 J ISO 6603 Izod Impact, unnotched 80*10*4 + 23°C 40 kJ/m² ISO 180/1U Izod Impact, notched 80*10*4 + 23°C 11 kJ/m² ISO 180/1A THERMAL (¹¹) ** C ASTM D648	Izod Impact, unnotched, 23°C	501	J/m	ASTM D4812
Multiaxial Impact 12 J ISO 6603 Izod Impact, unnotched 80*10*4 +23°C 40 kJ/m² ISO 180/1U Izod Impact, notched 80*10*4 +23°C 11 kJ/m² ISO 180/1A THERMAL ⁽¹⁾ HDT, 1.82 MPa, 3.2mm, unannealed 137 °C ASTM D648	Izod Impact, notched, 23°C	106	J/m	ASTM D256
Izod Impact, unnotched 80°10°4 +23°C 40 kJ/m² ISO 180/1U Izod Impact, notched 80°10°4 +23°C 11 kJ/m² ISO 180/1A THERMAL (¹) HDT, 1.82 MPa, 3.2mm, unannealed 137 °C ASTM D648	Instrumented Dart Impact Energy @ peak, 23°C	15	J	ASTM D3763
Izod Impact, notched 80*10*4 +23°C 11 kJ/m² ISO 180/1A THERMAL (1) HDT, 1.82 MPa, 3.2mm, unannealed 137 °C ASTM D648	Multiaxial Impact	12	J	ISO 6603
THERMAL (1) HDT, 1.82 MPa, 3.2mm, unannealed 137 °C ASTM D648	Izod Impact, unnotched 80*10*4 +23°C	40	kJ/m²	ISO 180/1U
HDT, 1.82 MPa, 3.2mm, unannealed 137 °C ASTM D648	Izod Impact, notched 80*10*4 +23°C	11	kJ/m²	ISO 180/1A
	THERMAL (1)			
CTE, -40°C to 40°C, flow 1.98E-05 1/°C ASTM E831	HDT, 1.82 MPa, 3.2mm, unannealed	137	°C	ASTM D648
	CTE, -40°C to 40°C, flow	1.98E-05	1/°C	ASTM E831



PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
CTE, -40°C to 40°C, xflow	6.12E-05	1/°C	ASTM E831
CTE, -40°C to 40°C, flow	2.02E-05	1/°C	ISO 11359-2
CTE, -40°C to 40°C, xflow	6.18E-05	1/°C	ISO 11359-2
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	138	°C	ISO 75/Af
PHYSICAL (1)			
Density	1.5	g/cm³	ASTM D792
Mold Shrinkage, flow, 24 hrs (2)	0.4 - 0.6	%	ASTM D955
Mold Shrinkage, xflow, 24 hrs (2)	0.4 - 0.6	%	ASTM D955
Mold Shrinkage, flow, 24 hrs (2)	0.4 - 0.6	%	ISO 294
Mold Shrinkage, xflow, 24 hrs (2)	0.4 - 0.6	%	ISO 294
Wear Factor Washer	115	10^-10 in^5-min/ft-lb-hr	ASTM D3702 Modified: Manual
Dynamic COF	0.42	-	ASTM D3702 Modified: Manual
Static COF	0.34	-	ASTM D3702 Modified: Manual
Density	1.5	g/cm³	ISO 1183
Moisture Absorption (23°C / 50% RH)	0.12	%	ISO 62
FLAME CHARACTERISTICS (3)			
UL Yellow Card Link	E121562-101344536	-	
UL Yellow Card Link 2	E207780-101343859	-	
UL Recognized, 94V-0 Flame Class Rating	≥1.5	mm	UL 94
UL Recognized, 94V-1 Flame Class Rating	≥1.5	mm	UL 94
INJECTION MOLDING (4)			
Drying Temperature	120	°C	
Drying Time	4	Hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	305 – 325	°C	
Front - Zone 3 Temperature	320 – 330	°C	
Middle - Zone 2 Temperature	310 – 320	°C	
Rear - Zone 1 Temperature	295 – 305	°C	
Mold Temperature	80 – 110	°C	
Back Pressure	0.2 - 0.3	MPa	
Screw Speed	30 – 60	rpm	

⁽¹⁾ The information stated on Technical Datasheets should be used as indicative only for material selection purposes and not be utilized as specification or used for part or tool design.

DISCLAIMER

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⁽²⁾ Measurements made from laboratory test coupon. Actual shrinkage may vary outside of range due to differences in processing conditions, equipment, part geometry and tool design. It is recommended that mold shrinkage studies be performed with surrogate or legacy tooling prior to cutting tools for new molded article.

⁽³⁾ UL Ratings shown on the technical datasheet might not cover the full range of thicknesses and colors. For details, please see the UL Yellow Card.

⁽⁴⁾ Injection Molding parameters are only mentioned as general guidelines. These may not apply or may need adjustment in specific situations such as low shot sizes, large part molding, thin wall molding and gas-assist molding.