

LNPTM LUBRICOMPTM COMPOUND DL0029E

DL-4020 FR REGION EUROPE

DESCRIPTION

LNP LUBRICOMP DL0029E compound is based on Polycarbonate (PC) resin containing 10% PTFE. Added features of this grade include: Wear Resistant, Flame Retardant.

GENERAL INFORMATION	
Features	Flame Retardant, Wear resistant
Fillers	Unreinforced, 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 (¹¹) Tensile Stress, yield, 5 mm/min 56 MPa ISO 527 Tensile Strain, yield, 5 mm/min 51 % ISO 527 Tensile Modulus, 1 mm/min 2400 MPa ISO 527 Flexural Stress, yield, 2 mm/min 82 MPa ISO 178 Flexural Strain, break, 2 mm/min 7 % ISO 178 Flexural Modulus, 2 mm/min 2700 MPa ISO 178 Flexural Strain, break, 2 mm/min, 60°C 7 % ISO 178 Flexural Strain, break, 2 mm/min, 60°C 7 % ISO 178 Flexural Strain, break, 2 mm/min, 60°C 7 % ISO 178 Flexural Strain, break, 2 mm/min, 60°C 3 MPa ISO 178 Flexural Strain, break, 2 mm/min, 60°C 140 MPa ISO 178 Flexural Modulus, 2 mm/min, 60°C 1400 MPa ISO 178 Flexural Modulus, 2 mm/min, 60°C 3 MPa ISO 178 Flexural Modulus, 2 mm/min, 60°C 3 ISO 178 ISO 178 Flexural Strain, break, 2 mm/min, 60°C 3	PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Tensile Strain, yield, 5 mm/min 5.1 % So5 527 Tensile Modulus, 1 mm/min 2400 MPa ISO 527 Flexural Stress, yield, 2 mm/min 82 MPa ISO 178 Flexural Strain, break, 2 mm/min 7 % ISO 178 Flexural Modulus, 2 mm/min 2700 MPa ISO 178 Flexural Strain, break, 2 mm/min, 60°C 7 % ISO 178 Flexural Strain, break, 2 mm/min, 60°C 7 % ISO 178 Flexural Stress, yield, 2 mm/min, 60°C 7 % ISO 178 Flexural Stress, yield, 2 mm/min, 60°C 18 MPa ISO 178 Flexural Modulus, 2 mm/min, 60°C 1400 MPa ISO 178 Flexural Modulus, 2 mm/min, 60°C 1400 MPa ISO 178 Flexural Induction 2 mm/min, 100°C 15 MPa ISO 178 Induction 15 MPa ISO 180/18 Induction 15 MPa ISO 180/18 Induction 15 MPa ISO 180/18 Induction 15 MPa	MECHANICAL (1)			
Tensile Modulus, 1 mm/min 2400 MPa ISO 527 Flexural Stress, yield, 2 mm/min 82 MPa ISO 178 Flexural Strain, break, 2 mm/min 7 % ISO 178 Flexural Modulus, 2 mm/min 2700 MPa ISO 178 Flexural Strain, break, 2 mm/min, 60°C 7 % ISO 178 Flexural Strain, break, 2 mm/min, 60°C 7 % ISO 178 Flexural Stress, yield, 2 mm/min, 60°C 35 MPa ISO 178 Flexural Stress, yield, 2 mm/min, 100°C 18 MPa ISO 178 Flexural Modulus, 2 mm/min, 60°C 18 MPa ISO 178 Flexural Modulus, 2 mm/min, 100°C 1400 MPa ISO 178 Flexural Modulus, 2 mm/min, 100°C 1400 MPa ISO 178 IMPACT ************************************	Tensile Stress, yield, 5 mm/min	56	MPa	ISO 527
Flexural Stress, yield, 2 mm/min 82 MPa ISO 178 Flexural Strain, break, 2 mm/min 7 % ISO 178 Flexural Modulus, 2 mm/min 2700 MPa ISO 178 Flexural Strain, break, 2 mm/min, 60°C 7 % ISO 178 Flexural Strain, break, 2 mm/min, 100°C 7 % ISO 178 Flexural Stress, yield, 2 mm/min, 60°C 35 MPa ISO 178 Flexural Modulus, 2 mm/min, 100°C 18 MPa ISO 178 Flexural Modulus, 2 mm/min, 100°C 1400 MPa ISO 178 Flexural Modulus, 2 mm/min, 100°C 700 MPa ISO 178 Impact 150 178 ISO 178 Impact 150 180 110 <th< td=""><td>Tensile Strain, yield, 5 mm/min</td><td>5.1</td><td>%</td><td>ISO 527</td></th<>	Tensile Strain, yield, 5 mm/min	5.1	%	ISO 527
Flexural Strain, break, 2 mm/min 7 % ISO 178 Flexural Modulus, 2 mm/min 2700 MPa ISO 178 Flexural Strain, break, 2 mm/min, 60°C 7 % ISO 178 Flexural Strain, break, 2 mm/min, 100°C 7 % ISO 178 Flexural Strain, break, 2 mm/min, 100°C 35 MPa ISO 178 Flexural Stress, yield, 2 mm/min, 100°C 18 MPa ISO 178 Flexural Modulus, 2 mm/min, 60°C 1400 MPa ISO 178 Flexural Modulus, 2 mm/min, 100°C 700 MPa ISO 178 IMPACT ⁽¹⁾ ISO 178 IMPACT ⁽²⁾ ISO 178 Izod Impact, unnotched 80°10°4 + 23°C 135 I/m² ISO 180/10 Izod Impact, notched 80°10°4 + 23°C 5 I/m² ISO 180/10 THERMAL ⁽¹⁾ Impact (1) Imp	Tensile Modulus, 1 mm/min	2400	MPa	ISO 527
Flexural Modulus, 2 mm/min 2700 MPa ISO 178 Flexural Strain, break, 2 mm/min, 60°C 7 % ISO 178 Flexural Strain, break, 2 mm/min, 100°C 7 % ISO 178 Flexural Stress, yield, 2 mm/min, 60°C 35 MPa ISO 178 Flexural Stress, yield, 2 mm/min, 100°C 18 MPa ISO 178 Flexural Modulus, 2 mm/min, 60°C 1400 MPa ISO 178 Flexural Modulus, 2 mm/min, 100°C 700 MPa ISO 178 IMPACT ⁽¹⁾ Izod Impact, unnotched 80°10°4 + 23°C 135 kJ/m² ISO 180/1U Izod Impact, notched 80°10°4 + 23°C 6 kJ/m² ISO 180/1A THERMAL ⁽¹⁾ THERMAL ⁽¹⁾ I/°C ISO 11359-2 CTE, 23°C to 60°C, flow 9.E-05 1/°C ISO 11359-2	Flexural Stress, yield, 2 mm/min	82	MPa	ISO 178
Flexural Strain, break, 2 mm/min, 60°C 7 % 150 178 Flexural Strain, break, 2 mm/min, 100°C 7 % 150 178 Flexural Stress, yield, 2 mm/min, 60°C 35 MPa 150 178 Flexural Stress, yield, 2 mm/min, 100°C 188 MPa 150 178 Flexural Modulus, 2 mm/min, 60°C 1400 MPa 150 178 Flexural Modulus, 2 mm/min, 100°C 700 MPa 150 178 IMPACT (1) Izod Impact, unnotched 80*10*4 +23°C 135 kJ/m² 150 180/10 Izod Impact, notched 80*10*4 +23°C 60°C, flow 9.E-05 1/°C 150 1359-2 CTE, 23°C to 60°C, flow 150 1359-2 THERMAL (1) 150 1359-2	Flexural Strain, break, 2 mm/min	7	%	ISO 178
Flexural Strain, break, 2 mm/min, 100°C Flexural Stress, yield, 2 mm/min, 60°C 35 MPa SSO 178 Flexural Stress, yield, 2 mm/min, 100°C 18 MPa SSO 178 Flexural Modulus, 2 mm/min, 60°C 1400 MPa SSO 178 Flexural Modulus, 2 mm/min, 100°C Too MPa SSO 178 SSO 178 Flexural Modulus, 2 mm/min, 100°C Too MPa SSO 178 SSO 178 IMPACT IMPACT IMPACT ISO 178 I	Flexural Modulus, 2 mm/min	2700	MPa	ISO 178
Flexural Stress, yield, 2 mm/min, 60°C 35 MPa ISO 178 Flexural Stress, yield, 2 mm/min, 100°C 18 MPa ISO 178 Flexural Modulus, 2 mm/min, 60°C 1400 MPa ISO 178 Flexural Modulus, 2 mm/min, 100°C 700 MPa ISO 178 IMPACT (¹) Impact, unnotched 80°10°4 + 23°C 135 kl/m² ISO 180/1U Izod Impact, notched 80°10°4 + 23°C 6 kl/m² ISO 180/1A THERMAL (¹) Impact (¹) Impac	Flexural Strain, break, 2 mm/min, 60°C	7	%	ISO 178
Flexural Stress, yield, 2 mm/min, 100°C Flexural Modulus, 2 mm/min, 60°C Flexural Modulus, 2 mm/min, 100°C Flexural Modulus, 2 mm/min, 100°C THEXMAL (1) Izod Impact, unnotched 80°10°4 +23°C THERMAL (1) CTE, 23°C to 60°C, xflow 18 MPa MPa ISO 178 ISO 1	Flexural Strain, break, 2 mm/min, 100°C	7	%	ISO 178
Flexural Modulus, 2 mm/min, 60°C 1400 MPa ISO 178 Flexural Modulus, 2 mm/min, 100°C 700 MPa ISO 178 IMPACT (1) Ixod Impact, unnotched 80*10*4 + 23°C 135 kJ/m² ISO 180/10 Izod Impact, notched 80*10*4 + 23°C 6 kJ/m² ISO 180/1A THERMAL (1) CTE, 23°C to 60°C, flow 9.E-05 1/°C ISO 11359-2 CTE, 23°C to 60°C, xflow 8.8E-05 1/°C ISO 11359-2	Flexural Stress, yield, 2 mm/min, 60°C	35	MPa	ISO 178
Flexural Modulus, 2 mm/min, 100°C 700 MPa ISO 178 IMPACT (¹) Izod Impact, unnotched 80*10*4 +23°C 135 kJ/m² ISO 180/1U Izod Impact, notched 80*10*4 +23°C 6 kJ/m² ISO 180/1A THERMAL (¹) CTE, 23°C to 60°C, flow 9.605 1/°C ISO 11359-2 CTE, 23°C to 60°C, xflow 8.8E-05 1/°C ISO 11359-2	Flexural Stress, yield, 2 mm/min, 100°C	18	MPa	ISO 178
IMPACT (1) Izod Impact, unnotched 80*10*4 + 23°C 135 kJ/m² ISO 180/1U Izod Impact, notched 80*10*4 + 23°C 6 kJ/m² ISO 180/1A THERMAL (1) University University University CTE, 23°C to 60°C, flow 9.605 1/°C ISO 11359-2 CTE, 23°C to 60°C, xflow 8.8E-05 1/°C ISO 11359-2	Flexural Modulus, 2 mm/min, 60°C	1400	MPa	ISO 178
Izod Impact, unnotched 80*10*4 + 23°C 135 kJ/m² ISO 180/10 Izod Impact, notched 80*10*4 + 23°C 6 kJ/m² ISO 180/1A THERMAL ⁽¹⁾ CTE, 23°C to 60°C, flow 9.E-05 1/°C ISO 11359-2 CTE, 23°C to 60°C, xflow 8.8E-05 1/°C ISO 11359-2	Flexural Modulus, 2 mm/min, 100°C	700	MPa	ISO 178
Izod Impact, notched 80*10*4 +23°C 6 kJ/m² ISO 180/1A THERMAL ⁽¹⁾ CTE, 23°C to 60°C, flow 9.E-05 1/°C ISO 11359-2 CTE, 23°C to 60°C, xflow 8.8E-05 1/°C ISO 11359-2	IMPACT (1)			
THERMAL (1) CTE, 23°C to 60°C, flow 9.E-05 1/°C ISO 11359-2 CTE, 23°C to 60°C, xflow 8.8E-05 1/°C ISO 11359-2	Izod Impact, unnotched 80*10*4 +23°C	135	kJ/m²	ISO 180/1U
CTE, 23°C to 60°C, flow 9.E-05 1/°C ISO 11359-2 CTE, 23°C to 60°C, xflow 8.8E-05 1/°C ISO 11359-2	Izod Impact, notched 80*10*4 +23°C	6	kJ/m²	ISO 180/1A
CTE, 23°C to 60°C, xflow 8.8E-05 1/°C ISO 11359-2	THERMAL (1)			
	CTE, 23°C to 60°C, flow	9.E-05	1/°C	ISO 11359-2
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm 139 °C ISO 75/Bf	CTE, 23°C to 60°C, xflow	8.8E-05	1/°C	ISO 11359-2
	HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	139	°C	ISO 75/Bf



PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	128	°C	ISO 75/Af
PHYSICAL (1)			
Mold Shrinkage on Tensile Bar, flow (2)	0.7 – 0.9	%	SABIC method
Wear Factor Washer	16	10^-10 in^5-min/ft-lb-hr	ASTM D3702 Modified: Manual
Dynamic COF	0.32	-	ASTM D3702 Modified: Manual
Density	1.27	g/cm³	ISO 1183
Melt Volume Rate, MVR at 275°C/2.16 kg	24 – 32	cm³/10 min	ISO 1133
FLAME CHARACTERISTICS (3)			
UL Yellow Card Link	E45329-101344455	-	-
UL Recognized, 94V-0 Flame Class Rating	≥1.7	mm	UL 94
INJECTION MOLDING (4)			
Drying Temperature	120	°C	
Drying Time	4	Hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	300 – 315	°C	
Front - Zone 3 Temperature	310 – 320	°C	
Middle - Zone 2 Temperature	305 – 315	°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.
- (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.

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