



## LNP™ LUBRICOMP™ Compound ML004S

### Americas: COMMERCIAL

Also known as: LNP™ LUBRICOMP™ Compound ML-4040 HS

Product reorder name: ML004S

LNP LUBRICOMP ML004S is a compound based on Polypropylene resin containing 20% PTFE. Added features of this material include: Wear Resistant, Heat Stabilized.

TYPICAL PROPERTIES <sup>1</sup>	TYPICAL VALUE	Unit	Standard
<b>MECHANICAL</b>			
Tensile Stress, yld, Type I, 5 mm/min	330	kgf/cm <sup>2</sup>	ASTM D 638
Tensile Stress, brk, Type I, 5 mm/min	300	kgf/cm <sup>2</sup>	ASTM D 638
Tensile Strain, yld, Type I, 5 mm/min	5.6	%	ASTM D 638
Tensile Strain, brk, Type I, 5 mm/min	15	%	ASTM D 638
Tensile Modulus, 5 mm/min	20600	kgf/cm <sup>2</sup>	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	470	kgf/cm <sup>2</sup>	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	17900	kgf/cm <sup>2</sup>	ASTM D 790
Tensile Stress, yield, 5 mm/min	31	MPa	ISO 527
Tensile Stress, break, 5 mm/min	29	MPa	ISO 527
Tensile Strain, yield, 5 mm/min	5	%	ISO 527
Tensile Strain, break, 5 mm/min	13	%	ISO 527
Tensile Modulus, 1 mm/min	1660	MPa	ISO 527
Flexural Stress	44	MPa	ISO 178
Flexural Modulus, 2 mm/min	1690	MPa	ISO 178
<b>IMPACT</b>			
Izod Impact, unnotched, 23°C	35	cm-kgf/cm	ASTM D 4812
Izod Impact, notched, 23°C	4	cm-kgf/cm	ASTM D 256
Multiaxial Impact	14	cm-kgf	ISO 6603
Instrumented Impact Total Energy, 23°C	61	cm-kgf	ASTM D 3763
Izod Impact, unnotched 80*10*4 +23°C	22	kJ/m <sup>2</sup>	ISO 180/1U
Izod Impact, notched 80*10*4 +23°C	3	kJ/m <sup>2</sup>	ISO 180/1A
<b>THERMAL</b>			
HDT, 0.45 MPa, 3.2 mm, unannealed	119	°C	ASTM D 648

(1) Typical values only. Variations within normal tolerances are possible for various colors. All values are measured after at least 48 hours storage at 23°C/50% relative humidity. All properties, except the melt volume and melt flow rates, are measured on injection molded samples. All samples tested under ISO test standards are prepared according to ISO 294.

(2) Only typical data for selection purposes. Not to be used for part or tool design.

(3) This rating is not intended to reflect hazards presented by this or any other material under actual fire conditions.

(4) Internal measurements according to UL standards.

(5) 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.

(6) Needs hard coat to consistently pass 60 sec Vertical Burn.



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TYPICAL PROPERTIES <sup>1</sup>	TYPICAL VALUE	Unit	Standard
<b>THERMAL</b>			
HDT, 1.82 MPa, 3.2mm, unannealed	65	°C	ASTM D 648
CTE, -30°C to 30°C, flow	9.1E-05	1/°C	ASTM D 696
CTE, -30°C to 30°C, xflow	3.98E-03	1/°C	ASTM D 696
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	105	°C	ISO 75/Bf
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	60	°C	ISO 75/Af
<b>PHYSICAL</b>			
Density	1.03	g/cm <sup>3</sup>	ASTM D 792
Moisture Absorption, 50% RH, 24 hrs	0.02	%	ASTM D 570
Mold Shrinkage, flow, 24 hrs (5)	2 - 4	%	ASTM D 955
Mold Shrinkage, xflow, 24 hrs (5)	2 - 4	%	ASTM D 955
Wear Factor Washer	172	10 <sup>-10</sup> in <sup>5</sup> -min/ft-lb-hr	ASTM D 3702 Modified: Manual
Wear Factor Ring	6	10 <sup>-10</sup> in <sup>5</sup> -min/ft-lb-hr	ASTM D 3702 Modified: Manual
Dynamic COF	0.76	-	ASTM D 3702 Modified: Manual
Static COF	0.62	-	ASTM D 3702 Modified: Manual
Moisture Absorption (23°C / 50% RH)	0.02	%	ISO 62

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PROCESSING PARAMETERS	TYPICAL VALUE	Unit
<b>Injection Molding</b>		
Drying Temperature	80	°C
Drying Time	4	hrs
Melt Temperature	225 - 250	°C
Front - Zone 3 Temperature	240 - 250	°C
Middle - Zone 2 Temperature	215 - 225	°C
Rear - Zone 1 Temperature	195 - 205	°C
Mold Temperature	30 - 50	°C
Back Pressure	0.2 - 0.3	MPa
Screw Speed	30 - 60	rpm

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