

# LNPT<sup>™</sup> ELCREST<sup>™</sup> MLO111

## DESCRIPTION

LNP ELCREST MLO111 is based on Polycarbonate (PC) siloxane copolymer resin with high flow, high impact resistance performance and colorable. This is an injection molding (IM) grade and targeted for IMT/IML process.

| GENERAL INFORMATION   |                             |
|-----------------------|-----------------------------|
| Features              | High Flow, Impact resistant |
| Fillers               | Unreinforced                |
| Polymer Types         | Polycarbonate (PC)          |
| Processing Techniques | Injection Molding           |

  

| INDUSTRY                   | SUB INDUSTRY                           |
|----------------------------|--|
| Consumer                   | Commercial Appliance                   |
| Electrical and Electronics | Mobile Phone - Computer - Tablets      |
| Industrial                 | Electrical, Material Handling, Defense |

## TYPICAL PROPERTY VALUES

Revision 20231109

| PROPERTIES                                   | TYPICAL VALUES | UNITS             | TEST METHODS |
|--|----------------|-------------------|--------------|
| <b>MECHANICAL <sup>(1)</sup></b>             |                |                   |              |
| Tensile Stress, yld, Type I, 50 mm/min       | 60             | MPa               | ASTM D638    |
| Tensile Stress, brk, Type I, 50 mm/min       | 54             | MPa               | ASTM D638    |
| Tensile Strain, yld, Type I, 50 mm/min       | 4              | %                 | ASTM D638    |
| Tensile Strain, brk, Type I, 50 mm/min       | 76             | %                 | ASTM D638    |
| Tensile Modulus, 50 mm/min                   | 2380           | MPa               | ASTM D638    |
| Flexural Strength, 1.3 mm/min, 50 mm span    | 97             | MPa               | ASTM D790    |
| Flexural Modulus, 1.3 mm/min, 50 mm span     | 2400           | MPa               | ASTM D790    |
| Hardness, Rockwell L                         | 92             | -                 | ASTM D785    |
| Tensile Stress, yield, 50 mm/min             | 60             | MPa               | ISO 527      |
| Tensile Stress, break, 50 mm/min             | 47             | MPa               | ISO 527      |
| Tensile Strain, yield, 50 mm/min             | 4.5            | %                 | ISO 527      |
| Tensile Strain, break, 50 mm/min             | 46             | %                 | ISO 527      |
| Tensile Modulus, 1 mm/min                    | 2350           | MPa               | ISO 527      |
| Flexural Strength, 2 mm/min                  | 93             | MPa               | ISO 178      |
| Flexural Modulus, 2 mm/min                   | 2300           | MPa               | ISO 178      |
| <b>IMPACT <sup>(1)</sup></b>                 |                |                   |              |
| Izod Impact, notched, 23°C                   | 753            | J/m               | ASTM D256    |
| Izod Impact, notched, -30°C                  | 124            | J/m               | ASTM D256    |
| Izod Impact, unnotched, 23°C                 | NB             | J/m               | ASTM D4812   |
| Instrumented Dart Impact Total Energy, 23°C  | 62             | J                 | ASTM D3763   |
| Instrumented Dart Impact Total Energy, -30°C | 62             | J                 | ASTM D3763   |
| Izod Impact, notched 80*10*4 +23°C           | 51             | kJ/m <sup>2</sup> | ISO 180/1A   |

| PROPERTIES  | TYPICAL VALUES                    | UNITS             | TEST METHODS |
|---|-----------------------------------|-------------------|--------------|
| Izod Impact, notched 80*10*4 -30°C                  | 10                                | kJ/m <sup>2</sup> | ISO 180/1A   |
| Izod Impact, unnotched 80*10*4 +23°C                | NB                                | kJ/m <sup>2</sup> | ISO 180/1U   |
| Charpy Impact, notched, 23°C                        | 55                                | kJ/m <sup>2</sup> | ISO 179/2C   |
| Charpy Impact, notched, -30°C                       | 13                                | kJ/m <sup>2</sup> | ISO 179/2C   |
| Charpy Impact, unnotched, 23°C                      | NB                                | kJ/m <sup>2</sup> | ISO 179/2C   |
| <b>THERMAL <sup>(1)</sup></b>                       |                                   |                   |              |
| HDT, 1.82 MPa, 3.2mm, unannealed                    | 100                               | °C                | ASTM D648    |
| HDT, 0.45 MPa, 3.2 mm, unannealed                   | 110                               | °C                | ASTM D648    |
| HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm               | 103                               | °C                | ISO 75/Af    |
| HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm              | 110                               | °C                | ISO 75/Bf    |
| Vicat Softening Temp, Rate B/50                     | 125                               | °C                | ASTM D1525   |
| Vicat Softening Temp, Rate B/50                     | 117                               | °C                | ISO 306      |
| Vicat Softening Temp, Rate B/120                    | 119                               | °C                | ISO 306      |
| CTE, -40°C to 40°C, flow                            | 6.5E-05                           | 1/°C              | ASTM E831    |
| CTE, -40°C to 40°C, xflow                           | 6.6E-05                           | 1/°C              | ASTM E831    |
| Relative Temp Index, Elec <sup>(2)</sup>            | 80                                | °C                | UL 746B      |
| Relative Temp Index, Mech w/impact <sup>(2)</sup>   | 80                                | °C                | UL 746B      |
| Relative Temp Index, Mech w/o impact <sup>(2)</sup> | 80                                | °C                | UL 746B      |
| <b>PHYSICAL <sup>(1)</sup></b>                      |                                   |                   |              |
| Specific Gravity                                    | 1.18                              | -                 | ASTM D792    |
| Density   | 1.18                              | g/cm <sup>3</sup> | ASTM D792    |
| Mold Shrinkage, flow, 24 hrs <sup>(3)</sup>         | 0.6                               | %                 | ASTM D955    |
| Mold Shrinkage, xflow, 24 hrs <sup>(3)</sup>        | 0.6                               | %                 | ASTM D955    |
| Melt Flow Rate, 300°C/1.2 kgf                       | 20                                | g/10 min          | ASTM D1238   |
| Moisture Absorption (23°C / 50% RH)                 | 0.43                              | %                 | ISO 62       |
| <b>ELECTRICAL <sup>(1)</sup></b>                    |                                   |                   |              |
| Volume Resistivity                                  | >1E+16                            | Ω.cm              | ASTM D257    |
| Surface Resistivity                                 | >1E+16                            | Ω                 | ASTM D257    |
| Dielectric Constant, 1.1 GHz                        | 2.8                               | -                 | SABIC method |
| Dissipation Factor, 1.1 GHz                         | 0.006                             | -                 | SABIC method |
| <b>FLAME CHARACTERISTICS <sup>(2)</sup></b>         |                                   |                   |              |
| UL Yellow Card Link                                 | <a href="#">E207780-104263180</a> | -                 | -            |
| UL Recognized, 94HB Flame Class Rating              | ≥0.4                              | mm                | UL 94        |
| <b>INJECTION MOLDING <sup>(4)</sup></b>             |                                   |                   |              |
| Drying Temperature                                  | 100                               | °C                |              |
| Drying Time   | 3 – 4                             | Hrs               |              |
| Maximum Moisture Content                            | 0.02                              | %                 |              |
| Melt Temperature                                    | 280 – 305                         | °C                |              |
| Nozzle Temperature                                  | 275 – 300                         | °C                |              |
| Front - Zone 3 Temperature                          | 280 – 305                         | °C                |              |
| Middle - Zone 2 Temperature                         | 275 – 295                         | °C                |              |
| Rear - Zone 1 Temperature                           | 260 – 285                         | °C                |              |
| Mold Temperature                                    | 60 – 80                           | °C                |              |

- (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) 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.
- (3) 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.
- (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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