

# LNPTM ELCRINTM EXL9414TG

## DESCRIPTION

LNP ELCRIN EXL9414TG resin, that incorporates renewable feedstock through ISCC+ mass-balance certification, is a halogen-free flame-retardant Polycarbonate (PC) featuring transparency, -40 degree C ductility and UL-94 V0 rating for injection molding applications. Excellent impact combined with good flow, transparent and colorability for aesthetics and thin-wall flame retardancy makes this product is intended for thin-wall applications

| GENERAL INFORMATION   |                                                                                                                                                |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| Features              | Bio-Renewable, Transparent/Translucent, Non halogenated flame retardant, Impact resistant, Low temperature impact, No PFAS intentionally added |
| Fillers               | Unreinforced                                                                                                                                   |
| Polymer Types         | Polycarbonate (PC)                                                                                                                             |
| Processing Techniques | Injection Molding                                                                                                                              |

  

| INDUSTRY                   | SUB INDUSTRY                                |
|----------------------------|---------------------------------------------|
| Consumer                   | Home Appliances                             |
| Electrical and Electronics | Mobile Phone - Computer - Tablets, Lighting |
| Industrial                 | Electrical, Defense                         |

## TYPICAL PROPERTY VALUES

Revision 20260421

| PROPERTIES                                   | TYPICAL VALUES | UNITS | TEST METHODS |
|----------------------------------------------|----------------|-------|--------------|
| <b>MECHANICAL <sup>(1)</sup></b>             |                |       |              |
| Tensile Stress, yld, Type I, 50 mm/min       | 57             | MPa   | ASTM D638    |
| Tensile Stress, brk, Type I, 50 mm/min       | 59             | MPa   | ASTM D638    |
| Tensile Strain, yld, Type I, 50 mm/min       | 5.6            | %     | ASTM D638    |
| Tensile Strain, brk, Type I, 50 mm/min       | 123.9          | %     | ASTM D638    |
| Tensile Modulus, 50 mm/min                   | 2180           | MPa   | ASTM D638    |
| Flexural Stress, yld, 1.3 mm/min, 50 mm span | 92             | MPa   | ASTM D790    |
| Flexural Modulus, 1.3 mm/min, 50 mm span     | 2180           | MPa   | ASTM D790    |
| Tensile Stress, yield, 50 mm/min             | 56             | MPa   | ISO 527      |
| Tensile Stress, break, 50 mm/min             | 55             | MPa   | ISO 527      |
| Tensile Strain, yield, 50 mm/min             | 5.4            | %     | ISO 527      |
| Tensile Strain, break, 50 mm/min             | 108            | %     | ISO 527      |
| Tensile Modulus, 1 mm/min                    | 2300           | MPa   | ISO 527      |
| Flexural Stress, yield, 2 mm/min             | 88             | MPa   | ISO 178      |
| Flexural Modulus, 2 mm/min                   | 2120           | MPa   | ISO 178      |
| <b>IMPACT <sup>(1)</sup></b>                 |                |       |              |
| Izod Impact, notched, 23°C                   | 824            | J/m   | ASTM D256    |
| Izod Impact, notched, -30°C                  | 712            | J/m   | ASTM D256    |
| Izod Impact, notched, -40°C                  | 593            | J/m   | ASTM D256    |
| Instrumented Dart Impact Total Energy, 23°C  | 75             | J     | ASTM D3763   |
| Izod Impact, unnotched 80*10*3 +23°C         | NB             | kJ/m² | ISO 180/1U   |
| Izod Impact, unnotched 80*10*3 -30°C         | NB             | kJ/m² | ISO 180/1U   |

| PROPERTIES                                             | TYPICAL VALUES                   | UNITS                   | TEST METHODS   |
|--------------------------------------------------------|----------------------------------|-------------------------|----------------|
| Izod Impact, notched 80*10*3 +23°C                     | 65                               | kJ/m <sup>2</sup>       | ISO 180/1A     |
| Izod Impact, notched 80*10*3 -30°C                     | 55                               | kJ/m <sup>2</sup>       | ISO 180/1A     |
| Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm             | 70                               | kJ/m <sup>2</sup>       | ISO 179/1eA    |
| Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm            | 60                               | kJ/m <sup>2</sup>       | ISO 179/1eA    |
| Charpy 23°C, Unnotch Edgew 80*10*3 sp=62mm             | NB                               | kJ/m <sup>2</sup>       | ISO 179/1eU    |
| Charpy -30°C, Unnotch Edgew 80*10*3 sp=62mm            | NB                               | kJ/m <sup>2</sup>       | ISO 179/1eU    |
| THERMAL <sup>(1)</sup>                                 |                                  |                         |                |
| HDT, 1.82 MPa, 3.2mm, unannealed                       | 120                              | °C                      | ASTM D648      |
| HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm                  | 116                              | °C                      | ISO 75/Af      |
| CTE, -40°C to 95°C, flow                               | 6.7E-05                          | 1/°C                    | ASTM E831      |
| CTE, -40°C to 95°C, xflow                              | 8.E-05                           | 1/°C                    | ASTM E831      |
| CTE, 23°C to 80°C, flow                                | 6.7E-05                          | 1/°C                    | ISO 11359-2    |
| CTE, 23°C to 80°C, xflow                               | 8.E-05                           | 1/°C                    | ISO 11359-2    |
| Vicat Softening Temp, Rate A/50                        | 138                              | °C                      | ASTM D1525     |
| Vicat Softening Temp, Rate B/50                        | 138                              | °C                      | ISO 306        |
| Vicat Softening Temp, Rate B/120                       | 139                              | °C                      | ISO 306        |
| Relative Temp Index, Elec <sup>(2)</sup>               | 120                              | °C                      | UL 746B        |
| Relative Temp Index, Mech w/impact <sup>(2)</sup>      | 110                              | °C                      | UL 746B        |
| Relative Temp Index, Mech w/o impact <sup>(2)</sup>    | 120                              | °C                      | UL 746B        |
| PHYSICAL <sup>(1)</sup>                                |                                  |                         |                |
| Specific Gravity                                       | 1.19                             | -                       | ASTM D792      |
| Density                                                | 1.19                             | g/cm <sup>3</sup>       | ISO 1183       |
| Melt Flow Rate, 300°C/1.2 kgf                          | 13                               | g/10 min                | ASTM D1238     |
| Melt Volume Rate, MVR at 300°C/1.2 kg                  | 12                               | cm <sup>3</sup> /10 min | ISO 1133       |
| Moisture Absorption (23°C / 50% RH)                    | 0.09                             | %                       | ISO 62         |
| Water Absorption, (23°C/saturated)                     | 0.12                             | %                       | ISO 62-1       |
| Mold Shrinkage, flow, 3.2 mm <sup>(3)</sup>            | 0.4 – 0.8                        | %                       | SABIC method   |
| OPTICAL <sup>(1)</sup>                                 |                                  |                         |                |
| Light Transmission at 2.0 mm                           | 84                               | %                       | SABIC method   |
| Haze, 2mm                                              | 3                                | %                       | SABIC method   |
| ELECTRICAL <sup>(2)</sup>                              |                                  |                         |                |
| Comparative Tracking Index (UL) {PLC}                  | 3                                | PLC Code                | UL 746A        |
| Hot-Wire Ignition (HWI), PLC 3                         | ≥1                               | mm                      | UL 746A        |
| Hot-Wire Ignition (HWI), PLC 4                         | ≥0.8                             | mm                      | UL 746A        |
| High Amp Arc Ignition (HAI), PLC 0                     | ≥0.8                             | mm                      | UL 746A        |
| FLAME CHARACTERISTICS <sup>(1)</sup>                   |                                  |                         |                |
| UL Yellow Card Link <sup>(2)</sup>                     | <a href="#">E207780-10246889</a> | -                       | -              |
| UL Yellow Card Link 2 <sup>(2)</sup>                   | <a href="#">E207780-10220937</a> | -                       | -              |
| UL Recognized, 94V-0 Flame Class Rating <sup>(2)</sup> | ≥1.8                             | mm                      | UL 94          |
| UL Recognized, 94V-1 Flame Class Rating <sup>(2)</sup> | ≥1.5                             | mm                      | UL 94          |
| UL Recognized, 94V-2 Flame Class Rating <sup>(2)</sup> | ≥1.2                             | mm                      | UL 94          |
| UV-light, water exposure/immersion <sup>(2)</sup>      | f1                               | -                       | UL 746C        |
| Glow Wire Ignitability Temperature, 3.0 mm             | 850                              | °C                      | IEC 60695-2-13 |
| Glow Wire Ignitability Temperature, 2.0 mm             | 850                              | °C                      | IEC 60695-2-13 |
| Glow Wire Ignitability Temperature, 1.5 mm             | 875                              | °C                      | IEC 60695-2-13 |

| PROPERTIES                                  | TYPICAL VALUES | UNITS | TEST METHODS   |
|---------------------------------------------|----------------|-------|----------------|
| Glow Wire Ignitability Temperature, 1.0 mm  | 875            | °C    | IEC 60695-2-13 |
| Glow Wire Ignitability Temperature, 0.75 mm | 875            | °C    | IEC 60695-2-13 |
| Glow Wire Flammability Index, 3.0 mm        | 960            | °C    | IEC 60695-2-12 |
| Glow Wire Flammability Index, 2.0 mm        | 960            | °C    | IEC 60695-2-12 |
| Glow Wire Flammability Index, 1.5 mm        | 960            | °C    | IEC 60695-2-12 |
| Glow Wire Flammability Index, 1.0 mm        | 930            | °C    | IEC 60695-2-12 |
| Glow Wire Flammability Index, 0.75 mm       | 930            | °C    | IEC 60695-2-12 |
| Oxygen Index (LOI)                          | 35             | %     | ISO 4589       |
| <b>INJECTION MOLDING <sup>(4)</sup></b>     |                |       |                |
| Drying Temperature                          | 120            | °C    |                |
| Drying Time                                 | 3 – 4          | Hrs   |                |
| Drying Time (Cumulative)                    | 48             | Hrs   |                |
| Maximum Moisture Content                    | 0.02           | %     |                |
| Melt Temperature                            | 295 – 315      | °C    |                |
| Nozzle Temperature                          | 290 – 310      | °C    |                |
| Front - Zone 3 Temperature                  | 295 – 315      | °C    |                |
| Middle - Zone 2 Temperature                 | 280 – 305      | °C    |                |
| Rear - Zone 1 Temperature                   | 270 – 295      | °C    |                |
| Mold Temperature                            | 70 – 95        | °C    |                |
| Back Pressure                               | 0.3 – 0.7      | MPa   |                |
| Screw Speed                                 | 40 – 70        | rpm   |                |
| Shot to Cylinder Size                       | 40 – 60        | %     |                |
| Vent Depth                                  | 0.025 – 0.076  | mm    |                |

- (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. 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.
- (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.

## MORE INFORMATION

For curve data and CAE cards, please visit and register at <https://materialfinder.sabic-specialties.com>

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