# Zenite® LCP

liquid crystal polymer resin

## Zenite® 6130L WT010

### Lubricated 30% Glass Reinforced Liquid Crystal Polymer Resin

Zenite® 6130L is a lubricated 30% glass reinforced LCP resin. It is well suited for use in the automotive, electrical/electronic, telecommunications, and aerospace industrie

| Property | Test Method | Units | Value |
|---|---|---|---|
| **Mechanical** | | | |
| Stress at Break, 1.0mm | ISO 527-1/-2 | MPa (kpsi) | |
| -40°C (-40°F) | | | 260 (38) |
| -30°C (-20°F) | | | 240 (35) |
| 23°C (73°F) | | | 180 (26.1) |
| 120°C (250°F) | | | 70 (10.2) |
| 150°C (300°F) | | | 55 (8) |
| 200°C (390°F) | | | 40 (5.8) |
| 250°C (480°F) | | | 22 (3.2) |
| Stress at Break, 2.0mm | ISO 527-1/-2 | MPa (kpsi) | |
| -40°C (-40°F) | | | 225 (33) |
| -30°C (-20°F) | | | 210 (30) |
| 23°C (73°F) | | | 150 (21.7) |
| 120°C (250°F) | | | 60 (8.7) |
| 150°C (300°F) | | | 50 (7.3) |
| 200°C (390°F) | | | 35 (5.1) |
| 250°C (480°F) | | | 20 (2.9) |

Contact DuPont for Material Safety Data Sheet, general guides and/or additional information about ventilation, handling, purging, drying
ISO Mechanical properties measured at 4.0mm, ISO Electrical properties measured at 2.0mm, and all ASTM properties measured at 3.2m
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During molding, use protective equipment and clothing. Skin contact with molten Zenite ® resins can cause severe burns. Be particularly alert during purging.



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|---|---|---|---|
| **Mechanical** | | | |
| Stress at Break, 4.0mm | ISO 527-1/-2 | MPa (kpsi) | |
| -40°C (-40°F) | | | 200 (29) |
| -30°C (-20°F) | | | 190 (27.5) |
| 23°C (73°F) | | | 130 (18.9) |
| 120°C (250°F) | | | 55 (8) |
| 150°C (300°F) | | | 45 (6.5) |
| 200°C (390°F) | | | 30 (4.4) |
| 250°C (480°F) | | | 18 (2.6) |
| Strain at Break, 1.0mm | ISO 527-1/-2 | % | |
| -40°C (-40°F) | | | 1.7 |
| -30°C (-20°F) | | | 1.8 |
| 23°C (73°F) | | | 1.9 |
| 120°C (250°F) | | | 1.2 |
| 150°C (300°F) | | | 1.2 |
| 200°C (390°F) | | | 1.1 |
| 250°C (480°F) | | | 1.0 |
| Strain at Break, 2.0mm | ISO 527-1/-2 | % | |
| -40°C (-40°F) | | | 1.8 |
| -30°C (-20°F) | | | 1.9 |
| 23°C (73°F) | | | 2.2 |
| 120°C (250°F) | | | 1.5 |
| 150°C (300°F) | | | 1.3 |
| 200°C (390°F) | | | 1.1 |
| 250°C (480°F) | | | 1.1 |
| Strain at Break, 4.0mm | ISO 527-1/-2 | % | |
| -40°C (-40°F) | | | 1.9 |
| -30°C (-20°F) | | | 1.9 |
| 23°C (73°F) | | | 1.8 |
| 120°C (250°F) | | | 1.7 |
| 150°C (300°F) | | | 1.4 |
| 200°C (390°F) | | | 1.1 |
| 250°C (480°F) | | | 1.0 |

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| Property | Test Method | Units | Value |
|---|---|---|---|
| **Mechanical** | | | |
| Tensile Modulus, 1.0mm | ISO 527-1/-2 | MPa (kpsi) | |
| -40°C (-40°F) | | | 21900 (3180) |
| -30°C (-20°F) | | | 20000 (2900) |
| 23°C (73°F) | | | 16700 (2430) |
| 120°C (250°F) | | | 7800 (1150) |
| 150°C (300°F) | | | 6900 (1000) |
| 200°C (390°F) | | | 5500 (800) |
| 250°C (480°F) | | | 4500 (650) |
| Tensile Modulus, 2.0mm | ISO 527-1/-2 | MPa (kpsi) | |
| -40°C (-40°F) | | | 19700 (2850) |
| -30°C (-20°F) | | | 18300 (2650) |
| 23°C (73°F) | | | 15300 (2220) |
| 120°C (250°F) | | | 7300 (1050) |
| 150°C (300°F) | | | 6500 (950) |
| 200°C (390°F) | | | 4700 (680) |
| 250°C (480°F) | | | 3000 (430) |
| Tensile Modulus, 4.0mm | ISO 527-1/-2 | MPa (kpsi) | |
| -40°C (-40°F) | | | 19000 (2760) |
| -30°C (-20°F) | | | 18000 (2600) |
| 23°C (73°F) | | | 13000 (1890) |
| 120°C (250°F) | | | 6400 (930) |
| 150°C (300°F) | | | 5900 (850) |
| 200°C (390°F) | | | 4200 (610) |
| 250°C (480°F) | | | 2700 (390) |
| Flexural Modulus, 1.0mm | ISO 178 | MPa (kpsi) | |
| -40°C (-40°F) | | | 20800 (3020) |
| 23°C (73°F) | | | 16200 (2350) |
| 120°C (250°F) | | | 7820 (1130) |
| 150°C (300°F) | | | 7500 (1100) |
| 200°C (390°F) | | | 5830 (850) |
| 250°C (480°F) | | | 3820 (550) |

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| Property | Test Method | Units | Value |
|---|---|---|---|
| **Mechanical** | | | |
| Flexural Modulus, 2.0mm | ISO 178 | MPa (kpsi) | |
| -40°C (-40°F) | | | 16600 (2400) |
| 23°C (73°F) | | | 12500 (1800) |
| 120°C (250°F) | | | 7600 (1100) |
| 150°C (300°F) | | | 7100 (1000) |
| 200°C (390°F) | | | 5070 (740) |
| 250°C (480°F) | | | 3690 (530) |
| Flexural Modulus, 4.0mm | ISO 178 | MPa (kpsi) | |
| -40°C (-40°F) | | | 15700 (2300) |
| 23°C (73°F) | | | 12000 (1740) |
| 120°C (250°F) | | | 6900 (1000) |
| 150°C (300°F) | | | 6200 (900) |
| 200°C (390°F) | | | 5050 (730) |
| 250°C (480°F) | | | 3560 (520) |
| Flexural Strength, 1.0mm | ISO 178 | MPa (kpsi) | |
| -40°C (-40°F) | | | 327 (47) |
| 23°C (73°F) | | | 211 (31) |
| 120°C (250°F) | | | 79 (12) |
| 150°C (300°F) | | | 65 (9) |
| 200°C (390°F) | | | 43 (6) |
| 250°C (480°F) | | | 23 (3) |
| Flexural Strength, 2.0mm | ISO 178 | MPa (kpsi) | |
| -40°C (-40°F) | | | 287 (42) |
| 23°C (73°F) | | | 191 (28) |
| 120°C (250°F) | | | 75 (11) |
| 150°C (300°F) | | | 61 (9) |
| 200°C (390°F) | | | 39 (6) |
| 250°C (480°F) | | | 21 (3) |

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| Property | Test Method | Units | Value |
|---|---|---|---|
| **Mechanical** | | | |
| Flexural Strength, 4.0mm | ISO 178 | MPa (kpsi) | |
| -40°C (-40°F) | | | 258 (37) |
| 23°C (73°F) | | | 167 (24) |
| 120°C (250°F) | | | 68 (10) |
| 150°C (300°F) | | | 54 (8) |
| 200°C (390°F) | | | 37 (5) |
| 250°C (480°F) | | | 20 (3) |
| Izod Impact | ASTM D 256 | J/m (ft lb/in) | |
| 3.2mm (0.126in) | | | 120 (2.3) |
| Notched Charpy Impact | ISO 179/1eA | $kJ/m^2$ | |
| -30°C (-22°F) | | | 30 |
| 23°C (73°F) | | | 35 |
| Unnotched Charpy Impact | ISO 179/1eU | $kJ/m^2$ | |
| -30°C (-22°F) | | | 25 |
| 23°C (73°F) | | | 35 |
| **Thermal** | | | |
| Deflection Temperature | ISO 75-1/-2 | °C (°F) | |
| 1.80MPa | | | 265 (510) |
| Melting Temperature | ISO 3146C | °C (°F) | 335 (635) |
| **Electrical** | | | |
| Surface Resistivity | IEC 60093 | ohm | >1E15 |
| Relative Permittivity | IEC 60250 | | |
| 1E2 Hz | | | 4.5 |
| 1E6 Hz | | | 4.0 |
| Volume Resistivity | IEC 60093 | ohm m | >1E14 |
| Dielectric Strength, Short Time, 0.8mm | ASTM D 149 | kV/mm (V/mil) | |
| 23°C (73°F) | | | 40 (1020) |
| 120°C (250°F) | | | 41 (1050) |
| 150°C (300°F) | | | 37 (950) |
| 200°C (392°F) | | | 40 (1010) |

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|---|---|---|---|
| **Electrical** | | | |
| Dielectric Strength, Short Time, 1.6mm | ASTM D 149 | kV/mm (V/mil) | |
| 23°C (73°F) | | | 35 (900) |
| 120°C (250°F) | | | 33 (840) |
| 150°C (300°F) | | | 31 (800) |
| 200°C (392°F) | | | 33 (850) |
| Dielectric Strength, Short Time, 3.2mm | ASTM D 149 | kV/mm (V/mil) | |
| 23°C (73°F) | | | 29 (740) |
| 120°C (250°F) | | | 28 (730) |
| 150°C (300°F) | | | 27 (680) |
| Dielectric Strength, Step by Step | ASTM D 149 | kV/mm (V/mil) | |
| 0.8mm (0.032in) | | | 30 (760) |
| 1.6mm (0.063in) | | | 29 (740) |
| 3.2mm (0.126in) | | | 26 (650) |
| Dielectric Const, 1E03 Hz, 0.8mm (0.032in) | ASTM D 150 | | |
| 23°C (73°F) | | | 4.0 |
| 120°C (250°F) | | | 4.5 |
| 150°C (300°F) | | | 4.5 |
| 200°C (392°F) | | | 4.5 |
| Dielectric Const, 1E03 Hz, 3.2mm (0.125in) | ASTM D 150 | | |
| 23°C (73°F) | | | 4.4 |
| 120°C (250°F) | | | 5.0 |
| 150°C (300°F) | | | 5.0 |
| 200°C (392°F) | | | 5.0 |
| Dielectric Const, 1E06 Hz, 0.8mm (0.032in) | ASTM D 150 | | |
| 23°C (73°F) | | | 3.6 |
| 120°C (250°F) | | | 4.3 |
| 150°C (300°F) | | | 4.4 |
| 200°C (392°F) | | | 4.4 |

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| **Electrical** | | | |
| Dielectric Const, 1E06 Hz, 3.2mm (0.125in) | ASTM D 150 | | |
| 23°C (73°F) | | | 3.9 |
| 120°C (250°F) | | | 4.8 |
| 150°C (300°F) | | | 4.8 |
| 200°C (392°F) | | | 4.9 |
| Dielectric Const, 1E09 Hz, 0.8mm (0.032in) | ASTM D 2520 B | | |
| 23°C (73°F) | | | 4.4 |
| 120°C (250°F) | | | 4.4 |
| 150°C (300°F) | | | 4.4 |
| 200°C (392°F) | | | 4.5 |
| Dielectric Const, 1E09 Hz, 1.6mm (0.063in) | ASTM D 2520 B | | |
| 23°C (73°F) | | | 4.3 |
| 120°C (250°F) | | | 4.4 |
| 150°C (300°F) | | | 4.4 |
| 200°C (392°F) | | | 4.5 |
| Dielectric Const, 1E09 Hz, 3.2mm (0.125in) | ASTM D 2520 B | | |
| 23°C (73°F) | | | 4.3 |
| 120°C (250°F) | | | 4.4 |
| 150°C (300°F) | | | 4.4 |
| 200°C (392°F) | | | 4.5 |
| 250°C (482°F) | | | 4.8 |
| Dissipation Factor | IEC 60250 | E-4 | |
| 1E2 Hz | | | 150 |
| 1E6 Hz | | | 310 |
| Dissipation Fact, 1E03 Hz, 0.8mm (0.032in) | ASTM D 150 | | |
| 23°C (73°F) | | | 0.013 |
| 120°C (250°F) | | | 0.008 |
| 150°C (300°F) | | | 0.009 |
| 200°C (392°F) | | | 0.015 |

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|---|---|---|---|
| **Electrical** | | | |
| Dissipation Fact, 1E03 Hz, 3.2mm (0.125in) | ASTM D 150 | | |
| 23°C (73°F) | | | 0.013 |
| 120°C (250°F) | | | 0.006 |
| 150°C (300°F) | | | 0.007 |
| 200°C (392°F) | | | 0.014 |
| Dissipation Fact, 1E06 Hz, 0.8mm (0.032in) | ASTM D 150 | | |
| 23°C (73°F) | | | 0.026 |
| 150°C (300°F) | | | 0.016 |
| 200°C (392°F) | | | 0.010 |
| Dissipation Fact, 1E06 Hz, 3.2mm (0.125in) | ASTM D 150 | | |
| 23°C (73°F) | | | 0.027 |
| 120°C (250°F) | | | 0.032 |
| 150°C (300°F) | | | 0.018 |
| 200°C (392°F) | | | 0.009 |
| Dissipation Fact, 1E09 Hz, 0.8mm (0.032in) | ASTM D 2520 B | | |
| 23°C (73°F) | | | 0.004 |
| 120°C (250°F) | | | 0.012 |
| 150°C (300°F) | | | 0.018 |
| 200°C (392°F) | | | 0.025 |
| Dissipation Fact, 1E09 Hz, 1.6mm (0.063in) | ASTM D 2520 B | | |
| 23°C (73°F) | | | 0.004 |
| 120°C (250°F) | | | 0.014 |
| 150°C (300°F) | | | 0.020 |
| 200°C (392°F) | | | 0.028 |
| Dissipation Fact, 1E09 Hz, 3.2mm (0.125in) | ASTM D 2520 B | | |
| 23°C (73°F) | | | 0.004 |
| 120°C (250°F) | | | 0.016 |
| 150°C (300°F) | | | 0.023 |
| 200°C (392°F) | | | 0.032 |
| 250°C (482°F) | | | 0.034 |

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|---|---|---|---|
| **Electrical** | | | |
| Electric Strength | IEC 60243-1 | kV/mm | 37 |
| CTI | ASTM D 3638 | V | 100-174 |
| **Flammability** | | | |
| Flammability Classification | UL94 | | |
| 1.0mm | | | V-0 |
| 1.5mm | | | V-0 |
| 3.0mm | | | V-0 |
| Oxygen Index | ISO 4589 | % | 41 |
| **Other** | | | |
| Specific Gravity | ASTM D 792 | | 1.67 |
| Density | ISO 1183 | $kg/m^3$ ($g/cm^3$) | 1670 (1.67) |
| **Processing** | | | |
| Melt Temperature Range | | °C (°F) | 350-360 (660-680) |
| Melt Temperature Optimum | | °C (°F) | 355 (670) |
| Mold Temperature Range | | °C (°F) | 30-160 (85-320) |
| Mold Temperature Optimum | | °C (°F) | 90 (194) |
| Drying Time, Dehumidified Dryer | | h | 4 |
| Drying Temperature | | °C (°F) | 130 (275) |
| Processing Moisture Content | | % | <0.01 |

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