

SABIC Innovative Plastics Lexan® EXL1433T PC Copolymer

Category : Polymer , Thermoplastic , Polycarbonate (PC)

Material Notes:

Lexan® EXL1433T polycarbonate (PC) siloxane copolymer resin is a UV stabilized transparent injection molding grade. This resin offers excellent low temperature (-30 C) ductility in combination with medium flow characteristics and excellent processability with opportunities for shorter IM cycle times compared to standard PC. Lexan EXL1433T resin is a UV stabilized general purpose product available in transparent and opaque colors and is an excellent candidate for a broad range of applications.

Order this product through the following link:

http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-Lexan-EXL1433T-PC-Copolymer.php

| Physical Properties | Metric | English | Comments |
|-----------------------------------|--|--|---|
| Specific Gravity | 1.19 g/cc | 1.19 g/cc | ASTM D792 |
| Density | 1.19 g/cc | 0.0430 lb/in ³ | ISO 1183 |
| Moisture Absorption | 0.0900 % | 0.0900 % | 23°C / 50% RH; ISO 62 |
| Water Absorption at Saturation | 0.12 % | 0.12 % | ISO 62 |
| Linear Mold Shrinkage, Flow | 0.0040 - 0.0080 cm/cm @Thickness 3.20 mm | 0.0040 - 0.0080 in/in @Thickness 0.126 in | SABIC Method |
| Linear Mold Shrinkage, Transverse | 0.0040 - 0.0080 cm/cm @Thickness 3.20 mm | 0.0040 - 0.0080 in/in @Thickness 0.126 in | SABIC Method |
| Melt Flow | 10 g/10 min @Load 1.20 kg, Temperature 300 °C | 10 g/10 min @Load 2.65 lb, Temperature 572 °F | ASTM D1238 |
| Melt Index of Compound | 9.0 g/10 min @Load 1.20 kg, Temperature 300 °C | 9.0 g/10 min @Load 2.65 lb, Temperature 572 °F | MVR [cm ³ /10 min]; ISO 1133 |

| Mechanical Properties | Metric | English | Comments |
|---------------------------|----------|----------|------------------------------|
| Hardness, Rockwell L | 89 | 89 | ISO 2039-2 |
| Tensile Strength at Break | 61.0 MPa | 8850 psi | 50 mm/min; ISO 527 |
| | 64.0 MPa | 9280 psi | Type I, 50 mm/min; ASTM D638 |
| Tensile Strength, Yield | 57.0 MPa | 8270 psi | 50 mm/min; ISO 527 |
| | 58.0 MPa | 8410 psi | Type I, 50 mm/min; ASTM D638 |
| Elongation at Break | 124.9 % | 124.9 % | 50 mm/min; ISO 527 |

| Mechanical Properties | 131.4 % Metric | 131.4 % English | Type I, 50 mm/min; ASTM D638 Comments |
|------------------------------|------------------------|----------------------------|--|
| Elongation at Yield | 5.5 % | 5.5 % | 50 mm/min; ISO 527 |
| | 5.8 % | 5.8 % | Type I, 50 mm/min; ASTM D638 |
| Tensile Modulus | 2.21 GPa | 321 ksi | 50 mm/min; ASTM D638 |
| | 2.35 GPa | 341 ksi | 1 mm/min; ISO 527 |
| Flexural Yield Strength | 90.0 MPa | 13100 psi | 2 mm/min; ISO 178 |
| | 94.0 MPa | 13600 psi | 1.3 mm/min, 50 mm span; ASTM D790 |
| Flexural Modulus | 2.15 GPa | 312 ksi | 2 mm/min; ISO 178 |
| | 2.21 GPa | 321 ksi | 1.3 mm/min, 50 mm span; ASTM D790 |
| Izod Impact, Notched | 8.90 J/cm | 16.7 ft-lb/in | ASTM D256 |
| | 7.95 J/cm | 14.9 ft-lb/in | ASTM D256 |
| | @Temperature -30.0 °C | @Temperature -22.0 °F | |
| Izod Impact, Notched (ISO) | 65.0 kJ/m ² | 30.9 ft-lb/in ² | 80*10*3; ISO 180/1A |
| | 45.0 kJ/m ² | 21.4 ft-lb/in ² | 80*10*3; ISO 180/1A |
| | @Temperature -30.0 °C | @Temperature -22.0 °F | |
| Izod Impact, Unnotched (ISO) | NB | NB | 80*10*3; ISO 180/1U |
| | NB | NB | 80*10*3; ISO 180/1U |
| | @Temperature -30.0 °C | @Temperature -22.0 °F | |
| Charpy Impact Unnotched | NB | NB | Edgew 80*10*3 sp=62mm; ISO 179/1eU |
| | NB | NB | Edgew 80*10*3 sp=62mm; ISO 179/1eU |
| | @Temperature -30.0 °C | @Temperature -22.0 °F | |
| Charpy Impact, Notched | 7.00 J/cm ² | 33.3 ft-lb/in ² | Edgew 80*10*3 sp=62mm; ISO 179/1eA |
| | 5.00 J/cm ² | 23.8 ft-lb/in ² | Edgew 80*10*3 sp=62mm; ISO 179/1eA |
| | @Temperature -30.0 °C | @Temperature -22.0 °F | |
| Dart Drop, Total Energy | 82.0 J | 60.5 ft-lb | ASTM D3763 |
| | @Temperature 23.0 °C | @Temperature 73.4 °F | |
| | 85.0 J | 62.7 ft-lb | ASTM D3763 |
| | @Temperature -30.0 °C | @Temperature -22.0 °F | |

| Thermal Properties | Metric | English | Comments |
|---|--|--|----------------------------------|
| CTE, linear, Parallel to Flow | 71.5 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$ | 39.7 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$ | ASTM E 831 |
| | @Temperature -40.0 - 95.0 $^\circ\text{C}$ | @Temperature -40.0 - 203 $^\circ\text{F}$ | |
| | 71.5 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$ | 39.7 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$ | ISO 11359-2 |
| | @Temperature 23.0 - 80.0 $^\circ\text{C}$ | @Temperature 73.4 - 176 $^\circ\text{F}$ | |
| CTE, linear, Transverse to Flow | 79.3 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$ | 44.1 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$ | ASTM E 831 |
| | @Temperature -40.0 - 95.0 $^\circ\text{C}$ | @Temperature -40.0 - 203 $^\circ\text{F}$ | |
| | 79.3 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$ | 44.1 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$ | ISO 11359-2 |
| | @Temperature 23.0 - 80.0 $^\circ\text{C}$ | @Temperature 73.4 - 176 $^\circ\text{F}$ | |
| Deflection Temperature at 1.8 MPa (264 psi) | 118 $^\circ\text{C}$ | 244 $^\circ\text{F}$ | Flatw 80*10*4 sp=64mm; ISO 75/Af |
| | 124 $^\circ\text{C}$ | 255 $^\circ\text{F}$ | |
| | @Thickness 3.20 mm | @Thickness 0.126 in | unannealed; ASTM D648 |
| Vicat Softening Point | 141 $^\circ\text{C}$ | 286 $^\circ\text{F}$ | Rate A/50; ASTM D1525 |
| | 141 $^\circ\text{C}$ | 286 $^\circ\text{F}$ | Rate B/50; ISO 306 |
| | 142 $^\circ\text{C}$ | 288 $^\circ\text{F}$ | Rate B/120; ISO 306 |
| UL RTI, Electrical | 130 $^\circ\text{C}$ | 266 $^\circ\text{F}$ | UL 746B |
| UL RTI, Mechanical without Impact | 130 $^\circ\text{C}$ | 266 $^\circ\text{F}$ | UL 746B |
| Flammability, UL94 | V-2 | V-2 | UL 94 |
| | @Thickness 2.50 mm | @Thickness 0.0984 in | |
| Glow Wire Test | 825 $^\circ\text{C}$ | 1520 $^\circ\text{F}$ | IEC 60695-2-13 |
| | 825 $^\circ\text{C}$ | 1520 $^\circ\text{F}$ | IEC 60695-2-13 |
| | 960 $^\circ\text{C}$ | 1760 $^\circ\text{F}$ | IEC 60695-2-12 |
| | @Thickness 3.00 mm | @Thickness 0.118 in | |
| Optical Properties | Metric | English | Comments |
| Haze | 3.0 % | 3.0 % | ASTM D1003 |
| | @Thickness 2.54 mm | @Thickness 0.100 in | |
| Transmission, Visible | 82 % | 82 % | 2.54 mm; ASTM D1003 |

| Electrical Properties | Metric | English | Comments |
|-----------------------|-----------------------------------|-----------------------------------|-----------|
| Volume Resistivity | $\geq 1.00 \times 10^{15}$ ohm-cm | $\geq 1.00 \times 10^{15}$ ohm-cm | ASTM D257 |
| Surface Resistance | $\geq 1.00 \times 10^{15}$ ohm | $\geq 1.00 \times 10^{15}$ ohm | ASTM D257 |

| Descriptive Properties | Value | Comments |
|-----------------------------------|-------|----------------|
| Ball Pressure Test, 125°C +/- 2°C | pass | IEC 60695-10-2 |

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