

SABIC Innovative Plastics Lexan® HFD1433 PC Copolymer

Category : Polymer , Thermoplastic , Polycarbonate (PC)

Material Notes:

11 MFR LEXAN High Flow Ductile Copolymer UV stabilized, available in transparent colors only

Order this product through the following link:

http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-Lexan-HFD1433-PC-Copolymer.php

| Physical Properties | Metric | English | Comments |
|--------------------------------|---|---|---|
| Specific Gravity | 1.20 g/cc | 1.20 g/cc | ASTM D792 |
| Density | 1.20 g/cc | 0.0434 lb/in ³ | ASTM D792 |
| | 1.20 g/cc | 0.0434 lb/in ³ | ISO 1183 |
| Moisture Absorption | 0.150 % | 0.150 % | 23°C / 50% RH; ISO 62 |
| Water Absorption at Saturation | 0.30 % | 0.30 % | ISO 62 |
| Linear Mold Shrinkage, Flow | 0.0050 - 0.0070 cm/cm @Thickness 3.20 mm | 0.0050 - 0.0070 in/in @Thickness 0.126 in | SABIC Method |
| Melt Flow | 11 g/10 min @Load 1.20 kg, Temperature 300 °C | 11 g/10 min @Load 2.65 lb, Temperature 572 °F | ASTM D1238 |
| Melt Index of Compound | 10 g/10 min @Load 1.20 kg, Temperature 300 °C | 10 g/10 min @Load 2.65 lb, Temperature 572 °F | MVR [cm ³ /10 min]; ISO 1133 |

| Mechanical Properties | Metric | English | Comments |
|---------------------------|----------|----------|------------------------------|
| Hardness, Rockwell R | 120 | 120 | ASTM D785 |
| Tensile Strength at Break | 67.0 MPa | 9720 psi | Type I, 50 mm/min; ASTM D638 |
| | 68.0 MPa | 9860 psi | 50 mm/min; ISO 527 |
| Tensile Strength, Yield | 58.0 MPa | 8410 psi | Type I, 50 mm/min; ASTM D638 |
| | 61.0 MPa | 8850 psi | 50 mm/min; ISO 527 |
| Elongation at Break | 126 % | 126 % | 50 mm/min; ISO 527 |
| | 137 % | 137 % | Type I, 50 mm/min; ASTM D638 |
| Elongation at Yield | 6.0 % | 6.0 % | 50 mm/min; ISO 527 |
| | 6.0 % | 6.0 % | Type I, 50 mm/min; ASTM D638 |

| Mechanical Properties | Metric | English | Comments |
|------------------------------|------------------------|----------------------------|------------------------------------|
| | 2.24 GPa | 325 ksi | 5 mm/min; ASTM D638 |
| Flexural Yield Strength | 90.0 MPa | 13100 psi | 2 mm/min; ISO 178 |
| | 98.0 MPa | 14200 psi | 1.3 mm/min, 50 mm span; ASTM D790 |
| Flexural Modulus | 2.09 GPa | 303 ksi | 2 mm/min; ISO 178 |
| | 2.23 GPa | 323 ksi | 1.3 mm/min, 50 mm span; ASTM D790 |
| Izod Impact, Notched | 9.03 J/cm | 16.9 ft-lb/in | ASTM D256 |
| | 4.35 J/cm | 8.15 ft-lb/in | ASTM D256 |
| | @Temperature -30.0 °C | @Temperature -22.0 °F | |
| | 8.59 J/cm | 16.1 ft-lb/in | ASTM D256 |
| | @Temperature -20.0 °C | @Temperature -4.00 °F | |
| Izod Impact, Notched (ISO) | 70.0 kJ/m ² | 33.3 ft-lb/in ² | 80*10*3; ISO 180/1A |
| | 32.0 kJ/m ² | 15.2 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 | 8.00 J/cm ² | 38.1 ft-lb/in ² | Edgew 80*10*3 sp=62mm; ISO 179/1eA |
| | 4.30 J/cm ² | 20.5 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 | 77.0 J | 56.8 ft-lb | ASTM D3763 |
| | @Temperature 23.0 °C | @Temperature 73.4 °F | |
| Impact Test | 120 J | 88.5 ft-lb | Multiaxial Impact; ISO 6603 |

| Thermal Properties | Metric | English | Comments |
|--------------------|--------------|----------------|----------|
| | 80.0 µm/m-°C | 44.4 µin/in-°F | |

| Thermal Properties | Metric | English | Comments |
|---|--|---|----------------------------------|
| CTE, linear, Parallel to Flow | 40.0 µm/m-°C @Temperature -40.0 - 40.0 °C | 104 °F @Temperature -40.0 - 104 °F | ASTM E 831 |
| CTE, linear, Transverse to Flow | 80.0 µm/m-°C @Temperature -40.0 - 40.0 °C | 44.4 µin/in-°F @Temperature -40.0 - 104 °F | ISO 11359-2 |
| CTE, linear, Transverse to Flow | 80.0 µm/m-°C @Temperature -40.0 - 40.0 °C | 44.4 µin/in-°F @Temperature -40.0 - 104 °F | ASTM E 831 |
| CTE, linear, Transverse to Flow | 80.0 µm/m-°C @Temperature -40.0 - 40.0 °C | 44.4 µin/in-°F @Temperature -40.0 - 104 °F | ISO 11359-2 |
| Deflection Temperature at 0.46 MPa (66 psi) | 124 °C @Thickness 3.20 mm | 255 °F @Thickness 0.126 in | unannealed; ASTM D648 |
| Deflection Temperature at 1.8 MPa (264 psi) | 115 °C | 239 °F | Flatw 80*10*4 sp=64mm; ISO 75/Af |
| | 114 °C @Thickness 3.20 mm | 237 °F @Thickness 0.126 in | unannealed; ASTM D648 |
| Vicat Softening Point | 130 °C | 266 °F | Rate B/50; ISO 306 |
| | 131 °C | 268 °F | Rate B/120; ISO 306 |
| | 136 °C | 277 °F | Rate B/50; ASTM D1525 |
| Flammability, UL94 | HB @Thickness 0.800 mm | HB @Thickness 0.0315 in | UL 94 |

| Optical Properties | Metric | English | Comments |
|-----------------------|--------------------------------|---------------------------------|---------------------|
| Refractive Index | 1.582 | 1.582 | ASTM D542 |
| Haze | <= 1.0 % @Thickness 2.54 mm | <= 1.0 % @Thickness 0.100 in | ASTM D1003 |
| Transmission, Visible | 88 % | 88 % | 2.54 mm; ASTM D1003 |

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

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