

SABIC Innovative Plastics Lexan® FXD9810U PC Copolymer (Asia Pacific)

Category : Polymer , Thermoplastic , Polycarbonate (PC)

Material Notes:

Polycarbonate with high flow, excellent processability, good impact and thermal properties, UV stabilized, non-Chlorine and non-Bromine flame retardant, UL rated V-0 and V-1. Available in limited diffusion/translucent colors only. This data was supplied by SABIC-IP for the Asia Pacific region.

Order this product through the following link:

http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-Lexan-FXD9810U-PC-Copolymer-Asia-Pacific.php

| Physical Properties | Metric | English | Comments |
|------------------------------------|---|---|--|
| Specific Gravity | 1.19 g/cc | 1.19 g/cc | ASTM D 792 |
| Density | 1.19 g/cc | 0.0430 lb/in ³ | ISO 1183 |
| Moisture Absorption at Equilibrium | 0.080 % | 0.080 % | 23°C / 50% RH; ISO 62 |
| Water Absorption at Saturation | 0.26 % @Temperature 23.0 °C | 0.26 % @Temperature 73.4 °F | ISO 62 |
| Linear Mold Shrinkage, Flow | 0.0060 - 0.0080 cm/cm @Thickness 3.20 mm | 0.0060 - 0.0080 in/in @Thickness 0.126 in | SABIC Method |
| Linear Mold Shrinkage, Transverse | 0.0060 - 0.0080 cm/cm @Thickness 3.20 mm | 0.0060 - 0.0080 in/in @Thickness 0.126 in | SABIC Method |
| Melt Flow | 29 g/10 min @Load 1.20 kg, Temperature 300 °C | 29 g/10 min @Load 2.65 lb, Temperature 572 °F | [cm ³ /10 min] Melt Volume Rate; ISO 1133 |
| | 30 g/10 min @Load 1.20 kg, Temperature 300 °C | 30 g/10 min @Load 2.65 lb, Temperature 572 °F | ASTM D 1238 |

| Mechanical Properties | Metric | English | Comments |
|---------------------------|----------|----------|-------------------------------|
| Tensile Strength at Break | 49.0 MPa | 7110 psi | 50 mm/min; ISO 527 |
| | 50.0 MPa | 7250 psi | Type I, 50 mm/min; ASTM D 638 |
| Tensile Strength, Yield | 55.0 MPa | 7980 psi | Type I, 50 mm/min; ASTM D 638 |
| | 56.0 MPa | 8120 psi | 50 mm/min; ISO 527 |
| Elongation at Break | 95 % | 95 % | 50 mm/min; ISO 527 |
| | 100 % | 100 % | Type I, 50 mm/min; ASTM D 638 |

| Mechanical Properties | 6.0 % Metric | 6.0 % English | 50 mm/min; ISO 527 Comments |
|------------------------------|---|---|---|
| | 6.0 % | 6.0 % | Type I, 50 mm/min; ASTM D 638 |
| Tensile Modulus | 2.15 GPa | 312 ksi | 1 mm/min; ISO 527 |
| | 2.20 GPa | 319 ksi | 50 mm/min; ASTM D 638 |
| Flexural Yield Strength | 91.0 MPa | 13200 psi | 2 mm/min; ISO 178 |
| | 94.0 MPa | 13600 psi | 1.3 mm/min, 50 mm span; ASTM D 790 |
| Flexural Modulus | 2.10 GPa | 305 ksi | 1.3 mm/min, 50 mm span; ASTM D 790 |
| | 2.20 GPa | 319 ksi | 2 mm/min; ISO 178 |
| Izod Impact, Notched | 2.00 J/cm @Temperature -30.0 °C | 3.75 ft-lb/in @Temperature -22.0 °F | ASTM D 256 |
| | 6.80 J/cm @Temperature 23.0 °C | 12.7 ft-lb/in @Temperature 73.4 °F | ASTM D 256 |
| Izod Impact, Notched (ISO) | 17.0 kJ/m ² @Temperature -30.0 °C | 8.09 ft-lb/in ² @Temperature -22.0 °F | 80*10*3; ISO 180/1A |
| | 63.0 kJ/m ² @Temperature 23.0 °C | 30.0 ft-lb/in ² @Temperature 73.4 °F | 80*10*3; ISO 180/1A |
| Izod Impact, Unnotched (ISO) | 180 kJ/m ² @Temperature -30.0 °C | 85.7 ft-lb/in ² @Temperature -22.0 °F | 80*10*3; ISO 180/1U |
| | 181 kJ/m ² @Temperature 23.0 °C | 86.1 ft-lb/in ² @Temperature 73.4 °F | 80*10*3; ISO 180/1U |
| Charpy Impact Unnotched | 13.2 J/cm ² @Temperature -30.0 °C | 62.8 ft-lb/in ² @Temperature -22.0 °F | Edgew 80*10*3 sp=62mm; ISO 179/1eU |
| | 13.3 J/cm ² @Temperature 23.0 °C | 63.3 ft-lb/in ² @Temperature 73.4 °F | Edgew 80*10*3 sp=62mm; ISO 179/1eU |
| Charpy Impact, Notched | 1.80 J/cm ² @Temperature -30.0 °C | 8.57 ft-lb/in ² @Temperature -22.0 °F | V-notch Edgew 80*10*3 sp=62mm; ISO 179/1eA |
| | 6.20 J/cm ² @Temperature 23.0 °C | 29.5 ft-lb/in ² @Temperature 73.4 °F | V-notch Edgew 80*10*3 sp=62mm; ISO 179/1eA |
| Impact Test | 63.0 J | 46.5 ft-lb | Instrumented Impact Total Energy; ASTM D 3763 |

| Mechanical Properties | @Temperature 23.0 °C Metric | @Temperature 73.4 °F English | Comments |
|---|--------------------------------|---------------------------------|------------------------------------|
| Thermal Properties | Metric | English | Comments |
| CTE, linear, Parallel to Flow | 69.0 µm/m-°C | 38.3 µin/in-°F | ISO 11359-2 |
| | @Temperature 23.0 - 80.0 °C | @Temperature 73.4 - 176 °F | |
| | 72.0 µm/m-°C | 40.0 µin/in-°F | ASTM E 831 |
| | @Temperature -40.0 - 40.0 °C | @Temperature -40.0 - 104 °F | |
| CTE, linear, Transverse to Flow | 68.0 µm/m-°C | 37.8 µin/in-°F | ISO 11359-2 |
| | @Temperature 23.0 - 80.0 °C | @Temperature 73.4 - 176 °F | |
| | 71.0 µm/m-°C | 39.4 µin/in-°F | ASTM E 831 |
| | @Temperature -40.0 - 40.0 °C | @Temperature -40.0 - 104 °F | |
| Deflection Temperature at 0.46 MPa (66 psi) | 131 °C | 268 °F | Edgew 120*10*4 sp=100mm; ISO 75/Be |
| | 130 °C | 266 °F | |
| | @Thickness 3.20 mm | @Thickness 0.126 in | unannealed; ASTM D 648 |
| Deflection Temperature at 1.8 MPa (264 psi) | 119 °C | 246 °F | Edgew 120*10*4 sp=100mm; ISO 75/Ae |
| | 118 °C | 244 °F | |
| | @Thickness 3.20 mm | @Thickness 0.126 in | unannealed; ASTM D 648 |
| Vicat Softening Point | 136 °C | 277 °F | Rate B/50; ASTM D 1525 |
| | 137 °C | 279 °F | Rate B/50; ISO 306 |
| | 138 °C | 280 °F | Rate B/120; ISO 306 |
| Flammability, UL94 | V-1 | V-1 | UL 94 |
| | @Thickness 1.20 mm | @Thickness 0.0472 in | |
| | V-0 | V-0 | UL 94 |
| | @Thickness 1.50 mm | @Thickness 0.0591 in | |
| Electrical Properties | Metric | English | Comments |
| Volume Resistivity | 1.00e+15 - 1.00e+16 ohm-cm | 1.00e+15 - 1.00e+16 ohm-cm | ASTM D 257 |
| Surface Resistance | 1.00e+15 - 1.00e+16 ohm | 1.00e+15 - 1.00e+16 ohm | ASTM D 257 |

| Electrical Properties | Metric | English | Comments |
|----------------------------|-------------|-------------|--------------------------------|
| Hot Wire Ignition, HWI | 15 - 30 sec | 15 - 30 sec | UL 746A PLC code 3; UL 746A |
| High Amp Arc Ignition, HAI | >= 120 arcs | >= 120 arcs | surface, PLC code 0; UL 746A |

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

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