

SABIC Innovative Plastics Lexan® DMX1435 PC Copolymer (Asia Pacific)

Category : Polymer , Thermoplastic , Polycarbonate (PC)

Material Notes:

This product will be phased out per January 2015 -- Lexan® DMX1435 is a UV stabilized standard flow polycarbonate copolymer resin with improved scratch resistance.

Order this product through the following link:

http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-Lexan-DMX1435-PC-Copolymer-Asia-Pacific.php

| Physical Properties | Metric | English | Comments |
|------------------------------------|---|---|---|
| Specific Gravity | 1.20 g/cc | 1.20 g/cc | ASTM D792 |
| Density | 1.17 g/cc | 0.0423 lb/in ³ | ASTM D792 |
| | 1.17 g/cc | 0.0423 lb/in ³ | ISO 1183 |
| Water Absorption | 0.080 % @Time 86400 sec | 0.080 % @Time 24.0 hour | ASTM D570 |
| Moisture Absorption | 0.0400 % | 0.0400 % | 50% RH, 24 hrs; ASTM D570 |
| | 0.130 % | 0.130 % | 23°C / 50% RH; ISO 62 |
| Moisture Absorption at Equilibrium | 0.13 % | 0.13 % | 50% RH; ASTM D570 |
| | 0.28 % | 0.28 % | ASTM D570 |
| Water Absorption at Saturation | 0.27 % | 0.27 % | ISO 62 |
| Linear Mold Shrinkage, Flow | 0.0050 - 0.0080 cm/cm @Thickness 3.20 mm | 0.0050 - 0.0080 in/in @Thickness 0.126 in | SABIC Method |
| Melt Flow | 14.5 g/10 min @Load 1.20 kg, Temperature 300 °C | 14.5 g/10 min @Load 2.65 lb, Temperature 572 °F | ASTM D1238 |
| Melt Index of Compound | 13 g/10 min @Load 1.20 kg, Temperature 300 °C | 13 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 | 108 | 108 | ASTM D785 |
| Hardness, Rockwell M | 93 | 93 | ASTM D785 |
| Hardness, H358/30 | 128 MPa | 18600 psi | ISO 2039-1 |
| Tensile Strength at Break | 60.0 MPa | 8700 psi | 50 mm/min; ISO 527 |

| Mechanical Properties | Metric SI Unit | English psi | Comments Type I, 50 mm/min; ASTM D638 |
|------------------------------|-------------------------|----------------------------|--|
| Tensile Strength, Yield | 80.0 MPa | 11600 psi | 50 mm/min; ISO 527 |
| | 80.0 MPa | 11600 psi | Type I, 50 mm/min; ASTM D638 |
| Elongation at Break | 40 % | 40 % | 50 mm/min; ISO 527 |
| | 70 % | 70 % | Type I, 50 mm/min; ASTM D638 |
| Elongation at Yield | 7.0 % | 7.0 % | 50 mm/min; ISO 527 |
| | 7.0 % | 7.0 % | Type I, 50 mm/min; ASTM D638 |
| Tensile Modulus | 2.45 GPa | 355 ksi | 1 mm/min; ISO 527 |
| | 2.90 GPa | 421 ksi | 50 mm/min; ASTM D638 |
| Flexural Yield Strength | 108 MPa | 15700 psi | 2 mm/min; ISO 178 |
| | 120 MPa | 17400 psi | 1.3 mm/min, 50 mm span; ASTM D790 |
| Flexural Modulus | 2.45 GPa | 355 ksi | 2 mm/min; ISO 178 |
| | 2.60 GPa | 377 ksi | 1.3 mm/min, 50 mm span; ASTM D790 |
| Izod Impact, Notched | 0.300 J/cm | 0.562 ft-lb/in | ASTM D256 |
| | 0.300 J/cm | 0.562 ft-lb/in | ASTM D256 |
| | @Temperature -30.0 °C | @Temperature -22.0 °F | |
| Izod Impact, Unnotched | NB | NB | ASTM D4812 |
| Izod Impact, Notched (ISO) | 5.00 kJ/m ² | 2.38 ft-lb/in ² | 80*10*3; ISO 180/1A |
| | 4.00 kJ/m ² | 1.90 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 |
| | 45.0 kJ/m ² | 21.4 ft-lb/in ² | 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 |
| | 4.70 J/cm ² | 22.4 ft-lb/in ² | Edgew 80*10*3 sp=62mm; ISO 179/1eU |
| | @Temperature -30.0 °C | @Temperature -22.0 °F | |
| Charpy Impact, Notched | 0.300 J/cm ² | 1.43 ft-lb/in ² | Edgew 80*10*3 sp=62mm; ISO 179/1eA |

| Mechanical Properties | Metric | English | Comments |
|--------------------------------|-------------------------|----------------------------|--|
| | 0.209 J/cm ² | 1.13 ft-lb/in ² | ISO 11359-2; 10*3 sp=62mm, ISO 179/1eA |
| | @Temperature -30.0 °C | @Temperature -22.0 °F | |
| Dart Drop, Total Energy | 30.0 J | 22.1 ft-lb | ASTM D3763 |
| | @Temperature 23.0 °C | @Temperature 73.4 °F | |
| Taber Abrasion, mg/1000 Cycles | 10 | 10 | CS-17, 1 kg; SABIC Method |
| | 10 | 10 | CS-17, 1 kg; ASTM D1044 |

| Thermal Properties | Metric | English | Comments |
|---|------------------------------|------------------------------------|----------------------------------|
| CTE, linear, Parallel to Flow | 70.0 µm/m-°C | 38.9 µin/in-°F | ASTM E 831 |
| | @Temperature -40.0 - 95.0 °C | @Temperature -40.0 - 203 °F | |
| | 70.0 µm/m-°C | 38.9 µin/in-°F | ISO 11359-2 |
| | @Temperature 23.0 - 80.0 °C | @Temperature 73.4 - 176 °F | |
| CTE, linear, Transverse to Flow | 70.0 µm/m-°C | 38.9 µin/in-°F | ASTM E 831 |
| | @Temperature -40.0 - 95.0 °C | @Temperature -40.0 - 203 °F | |
| | 70.0 µm/m-°C | 38.9 µin/in-°F | ISO 11359-2 |
| | @Temperature 23.0 - 80.0 °C | @Temperature 73.4 - 176 °F | |
| Specific Heat Capacity | 1.40 J/g-°C | 0.335 BTU/lb-°F | ASTM C351 |
| Thermal Conductivity | 0.200 W/m-K | 1.39 BTU-in/hr-ft ² -°F | ASTM C177 |
| | 0.200 W/m-K | 1.39 BTU-in/hr-ft ² -°F | ISO 8302 |
| Hot Ball Pressure Test | <= 140 °C | <= 284 °F | IEC 60695-10-2 |
| Deflection Temperature at 0.46 MPa (66 psi) | 131 °C | 268 °F | Flatw 80*10*4 sp=64mm; ISO 75/Bf |
| | 133 °C | 271 °F | unannealed; ASTM D648 |
| | @Thickness 3.20 mm | @Thickness 0.126 in | |
| Deflection Temperature at 1.8 MPa (264 psi) | 118 °C | 244 °F | Flatw 80*10*4 sp=64mm; ISO 75/Af |
| | 119 °C | 246 °F | unannealed; ASTM D648 |
| | @Thickness 3.20 mm | @Thickness 0.126 in | |
| Vicat Softening Point | 138 °C | 280 °F | Rate B/50; ISO 306 |
| | 139 °C | 282 °F | Rate B/50; ASTM D1525 |

| Thermal Properties | Metric | English | Comments, ISO 306 |
|--------------------|--------------------------|----------------------------|-------------------|
| Flammability, UL94 | HB @Thickness 1.00 mm | HB @Thickness 0.0394 in | UL 94 |

| Optical Properties | Metric | English | Comments |
|-----------------------|---------------------------------|----------------------------------|---------------------|
| Refractive Index | 1.584 | 1.584 | ASTM D542 |
| | 1.584 | 1.584 | ISO 489 |
| Haze | <= 0.80 % @Thickness 2.54 mm | <= 0.80 % @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 | PASSES | IEC 60695-10-2 |
| Erichson scratch depth, 6N | 14micrometer | SABIC Method |
| Pencil Hardness test, 1kgf | H | ASTM D3363 |
| Specific Volume | 0.85cm ³ /g | ASTM D792 |

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