

SABIC Innovative Plastics Lexan® DMX2415 PC (Asia Pacific)

Category : Polymer , Thermoplastic , Polycarbonate (PC)

Material Notes:

Lexan® DMX2415 is a polycarbonate resin with improved scratch resistance. Lexan® DMX2415 is available in transparent, translucent, and opaque colors. 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-DMX2415-PC-Asia-Pacific.php

| Physical Properties | Metric | English | Comments |
|------------------------------------|--|--|--|
| Specific Gravity | 1.20 g/cc | 1.20 g/cc | ASTM D 792 |
| Density | 1.17 g/cc | 0.0423 lb/in ³ | ASTM D 792 |
| | 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 D 570 |
| Moisture Absorption at Equilibrium | 0.13 % | 0.13 % | 23°C / 50% RH; ISO 62 |
| | 0.13 % | 0.13 % | 50% RH; ASTM D 570 |
| | 0.28 % @Temperature 23.0 °C | 0.28 % @Temperature 73.4 °F | ASTM D 570 |
| | 0.040 % @Time 86400 sec | 0.040 % @Time 24.0 hour | 50% RH; ASTM D 570 |
| Water Absorption at Saturation | 0.27 % @Temperature 23.0 °C | 0.27 % @Temperature 73.4 °F | ISO 62 |
| Moisture Vapor Transmission | 0.900 cc-mm/m ² -24hr-atm @Temperature 38.0 °C | 2.29 cc-mil/100 in ² -24hr-atm @Temperature 100 °F | 100%RH; ASTM F 1249 |
| 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 | 13 g/10 min @Load 1.20 kg, Temperature 300 °C | 13 g/10 min @Load 2.65 lb, Temperature 572 °F | [cm ³ /10 min] Melt Volume Rate; ISO 1133 |
| | 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 D 1238 |

| Mechanical Properties | Metric | English | Comments |
|----------------------------|---|---|------------------------------------|
| Hardness, Rockwell L | 108 | 108 | ASTM D 785 |
| Hardness, Rockwell M | 93 | 93 | ASTM D 785 |
| Hardness, H358/30 | 128 MPa | 18600 psi | ISO 2039-1 |
| Tensile Strength at Break | 60.0 MPa | 8700 psi | 50 mm/min; ISO 527 |
| | 65.0 MPa | 9430 psi | Type I, 50 mm/min; ASTM D 638 |
| Tensile Strength, Yield | 80.0 MPa | 11600 psi | Type I, 50 mm/min; ASTM D 638 |
| | 80.0 MPa | 11600 psi | 50 mm/min; ISO 527 |
| Elongation at Break | 40 % | 40 % | 50 mm/min; ISO 527 |
| | 70 % | 70 % | Type I, 50 mm/min; ASTM D 638 |
| Elongation at Yield | 7.0 % | 7.0 % | Type I, 50 mm/min; ASTM D 638 |
| | 7.0 % | 7.0 % | 50 mm/min; ISO 527 |
| Tensile Modulus | 2.45 GPa | 355 ksi | 1 mm/min; ISO 527 |
| | 2.90 GPa | 421 ksi | 50 mm/min; ASTM D 638 |
| Flexural Yield Strength | 108 MPa | 15700 psi | 2 mm/min; ISO 178 |
| | 120 MPa | 17400 psi | 1.3 mm/min, 50 mm span; ASTM D 790 |
| 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 D 790 |
| Izod Impact, Notched | 0.300 J/cm @Temperature 23.0 °C | 0.562 ft-lb/in @Temperature 73.4 °F | ASTM D 256 |
| | 0.300 J/cm @Temperature -30.0 °C | 0.562 ft-lb/in @Temperature -22.0 °F | ASTM D 256 |
| Izod Impact, Unnotched | NB @Temperature 23.0 °C | NB @Temperature 73.4 °F | ASTM D 4812 |
| Izod Impact, Notched (ISO) | 4.00 kJ/m ² @Temperature -30.0 °C | 1.90 ft-lb/in ² @Temperature -22.0 °F | 80*10*3; ISO 180/1A |
| | 5.00 kJ/m ² @Temperature 23.0 °C | 2.38 ft-lb/in ² @Temperature 73.4 °F | 80*10*3; ISO 180/1A |

| Mechanical Properties | Metric | English | Comments |
|--------------------------------|-------------------------|----------------------------|---|
| ISO Impact, Unnotched (ISO) | 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 | |
| | NB | NB | 80*10*3; ISO 180/1U |
| | @Temperature 23.0 °C | @Temperature 73.4 °F | |
| Charpy Impact Unnotched | 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 | |
| | NB | NB | Edgew 80*10*3 sp=62mm; ISO 179/1eU |
| | @Temperature 23.0 °C | @Temperature 73.4 °F | |
| Charpy Impact, Notched | 0.300 J/cm ² | 1.43 ft-lb/in ² | V-notch Edgew 80*10*3 sp=62mm; ISO 179/1eA |
| | @Temperature 23.0 °C | @Temperature 73.4 °F | |
| | 0.300 J/cm ² | 1.43 ft-lb/in ² | V-notch Edgew 80*10*3 sp=62mm; ISO 179/1eA |
| | @Temperature -30.0 °C | @Temperature -22.0 °F | |
| Impact Test | 30.0 J | 22.1 ft-lb | Instrumented Impact Total Energy; ASTM D 3763 |
| | @Temperature 23.0 °C | @Temperature 73.4 °F | |
| Taber Abrasion, mg/1000 Cycles | 10 | 10 | CS-17; ASTM D 1044 |
| | @Load 1.00 kg | @Load 2.20 lb | |
| | 10 | 10 | CS-17; SABIC Method |
| | @Load 1.00 kg | @Load 2.20 lb | |

| 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 C 351 |
| Thermal Conductivity | 0.200 W/m-K | 1.39 BTU-in/hr-ft ² -°F | ASTM C 177 |

| Thermal Properties | Metric U-200 W/m-K | English 1.00 BTU-in/hr-ft ² -°F | Comments ISO 6302 |
|--|------------------------------|---|-----------------------------------|
| 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 @Thickness 3.20 mm | 271 °F @Thickness 0.126 in | unannealed; ASTM D 648 |
| Deflection Temperature at 1.8 MPa (264 psi) | 118 °C | 244 °F | Flatw 80*10*4 sp=64mm; ISO 75/ Af |
| | 119 °C @Thickness 3.20 mm | 246 °F @Thickness 0.126 in | unannealed; ASTM D 648 |
| Vicat Softening Point | 138 °C | 280 °F | Rate B/50; ISO 306 |
| | 139 °C | 282 °F | Rate B/50; ASTM D 1525 |
| | 140 °C | 284 °F | Rate B/120; ISO 306 |
| Flammability, UL94 | HB | HB | UL 94 |
| | @Thickness 0.400 mm | @Thickness 0.0157 in | |

| Optical Properties | Metric | English | Comments |
|-----------------------|--------------------|---------------------|-------------|
| Refractive Index | 1.584 | 1.584 | ASTM D 542 |
| | 1.584 | 1.584 | ISO 489 |
| Haze | <= 0.80 % | <= 0.80 % | ASTM D 1003 |
| | @Thickness 2.54 mm | @Thickness 0.100 in | |
| Transmission, Visible | 88 % | 88 % | ASTM D 1003 |
| | @Thickness 2.54 mm | @Thickness 0.100 in | |

| Electrical Properties | Metric | English | Comments |
|----------------------------|------------------------------|------------------------------|---------------------|
| Volume Resistivity | >= 1.00e+17 ohm-cm | >= 1.00e+17 ohm-cm | ASTM D 257 |
| Dielectric Constant | 2.8 | 2.8 | ASTM D 150 |
| | @Frequency 1.00e+6 Hz | @Frequency 1.00e+6 Hz | |
| Comparative Tracking Index | 2.9 | 2.9 | ASTM D 150 |
| | @Frequency 50.0 - 60.0 Hz | @Frequency 50.0 - 60.0 Hz | |
| Comparative Tracking Index | 250 - 400 V | 250 - 400 V | PLC code 2; UL 746A |

| Electrical Properties | Metric | English | Comments |
|--|--------|---------|----------------|
| Descriptive Properties | | Value | Comments |
| Ball Pressure Test, 125°C +/- 2°C | | PASSES | IEC 60695-10-2 |
| Erichson scratch depth, 6N, micrometer | | 14 | SABIC Method |
| Pencil Hardness test, 1kgf | | H | ASTM D 3363 |

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