

## SABIC Innovative Plastics Lexan® PK2870 PC (Asia Pacific)

Category : Polymer , Thermoplastic , Polycarbonate (PC)

### Material Notes:

LEXAN® PK2870 polycarbonate resin, global grade, MVR (300C/1.2kg) 2 cm<sup>3</sup>/10min, high viscosity, branched, blow molding, high melt strength, high impact resistance, Available in transparent colors only. FDA 21CFR177.1580, European food contact regulation EC Directive 2002/72/EC. Designed to be a candidate for water bottle applications.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_SABIC-Innovative-Plastics-Lexan-PK2870-PC-Asia-Pacific.php](http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-Lexan-PK2870-PC-Asia-Pacific.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 <sup>3</sup>         | ISO 1183                                |
| Moisture Absorption                | 0.150 %                           | 0.150 %                           | 23°C / 50% RH; ISO 62                   |
| Moisture Absorption at Equilibrium | 0.35 %                            | 0.35 %                            | ASTM D570                               |
|                                    | 0.58 %                            | 0.58 %                            | ASTM D570                               |
|                                    | @Temperature 100 °C               | @Temperature 212 °F               |                                         |
| Water Absorption at Saturation     | 0.35 %                            | 0.35 %                            | ISO 62                                  |
| Linear Mold Shrinkage, Flow        | 0.0050 - 0.0070 cm/cm             | 0.0050 - 0.0070 in/in             | SABIC Method                            |
|                                    | @Thickness 3.20 mm                | @Thickness 0.126 in               |                                         |
| Melt Flow                          | 2.5 g/10 min                      | 2.5 g/10 min                      | ASTM D1238                              |
|                                    | @Load 1.20 kg, Temperature 300 °C | @Load 2.65 lb, Temperature 572 °F |                                         |
| Melt Index of Compound             | 2.0 g/10 min                      | 2.0 g/10 min                      | MVR [cm <sup>3</sup> /10 min]; ISO 1133 |
|                                    | @Load 1.20 kg, Temperature 300 °C | @Load 2.65 lb, Temperature 572 °F |                                         |
|                                    | 4.0 g/10 min                      | 4.0 g/10 min                      | MVR [cm <sup>3</sup> /10 min]; ISO 1133 |
|                                    | @Load 2.16 kg, Temperature 300 °C | @Load 4.76 lb, Temperature 572 °F |                                         |

| Mechanical Properties     | Metric   | English   | Comments                     |
|---------------------------|----------|-----------|------------------------------|
| Hardness, Rockwell R      | 120      | 120       | ISO 2039-2                   |
| Tensile Strength at Break | 65.0 MPa | 9430 psi  | Type I, 50 mm/min; ASTM D638 |
|                           | 70.0 MPa | 10200 psi | 50 mm/min; ISO 527           |
| Tensile Strength, Yield   | 62.0 MPa | 8990 psi  | Type I, 50 mm/min; ASTM D638 |

| Mechanical Properties        | Metric<br>95.0 MPa     | English<br>13800 psi       | Comments<br>50 mm/min; ISO 527     |
|------------------------------|------------------------|----------------------------|------------------------------------|
| Elongation at Break          | >= 70 %                | >= 70 %                    | Type I, 50 mm/min; ASTM D638       |
|                              | >= 70 %                | >= 70 %                    | 50 mm/min; ISO 527                 |
| Elongation at Yield          | 7.0 %                  | 7.0 %                      | Type I, 50 mm/min; ASTM D638       |
|                              | 7.0 %                  | 7.0 %                      | 50 mm/min; ISO 527                 |
| Tensile Modulus              | 2.35 GPa               | 341 ksi                    | 50 mm/min; ASTM D638               |
|                              | 2.35 GPa               | 341 ksi                    | 1 mm/min; ISO 527                  |
| Flexural Yield Strength      | 95.0 MPa               | 13800 psi                  | 1.3 mm/min, 50 mm span; ASTM D790  |
|                              | 95.0 MPa               | 13800 psi                  | 2 mm/min; ISO 178                  |
| Flexural Modulus             | 2.30 GPa               | 334 ksi                    | 1.3 mm/min, 50 mm span; ASTM D790  |
|                              | 2.30 GPa               | 334 ksi                    | 2 mm/min; ISO 178                  |
| Izod Impact, Notched         | 7.50 J/cm              | 14.1 ft-lb/in              | ASTM D256                          |
|                              | 1.50 J/cm              | 2.81 ft-lb/in              | ASTM D256                          |
|                              | @Temperature -30.0 °C  | @Temperature -22.0 °F      |                                    |
| Izod Impact, Unnotched       | NB                     | NB                         | ASTM D4812                         |
|                              | NB                     | NB                         | ASTM D4812                         |
|                              | @Temperature -30.0 °C  | @Temperature -22.0 °F      |                                    |
| Izod Impact, Notched (ISO)   | 75.0 kJ/m <sup>2</sup> | 35.7 ft-lb/in <sup>2</sup> | 80*10*3; ISO 180/1A                |
|                              | 55.0 kJ/m <sup>2</sup> | 26.2 ft-lb/in <sup>2</sup> | 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 <sup>2</sup> | 33.3 ft-lb/in <sup>2</sup> | Edgew 80*10*3 sp=62mm; ISO 179/1eA |

| Mechanical Properties   | 5.00 J/cm <sup>2</sup><br>Metric | 23.8 ft-lb/in <sup>2</sup><br>English | Comments   |
|-------------------------|----------------------------------|---------------------------------------|------------|
|                         | @Temperature -30.0 °C            | @Temperature -22.0 °F                 |            |
| Dart Drop, Total Energy | 170 J                            | 125 ft-lb                             | ASTM D3029 |

| 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         |                                  |
| Specific Heat Capacity                      | 1.25 J/g-°C                  | 0.299 BTU/lb-°F                    | ASTM C351                        |
| Thermal Conductivity                        | 0.200 W/m-K                  | 1.39 BTU-in/hr-ft <sup>2</sup> -°F | ASTM C177                        |
|                                             | 0.200 W/m-K                  | 1.39 BTU-in/hr-ft <sup>2</sup> -°F | ISO 8302                         |
| Deflection Temperature at 0.46 MPa (66 psi) | 145 °C                       | 293 °F                             | Flatw 80*10*4 sp=64mm; ISO 75/Bf |
|                                             | 145 °C                       | 293 °F                             | ASTM D648                        |
|                                             | @Thickness 3.20 mm           | @Thickness 0.126 in                |                                  |
| Deflection Temperature at 1.8 MPa (264 psi) | 130 °C                       | 266 °F                             | Flatw 80*10*4 sp=64mm; ISO 75/Af |
|                                             | 130 °C                       | 266 °F                             | ASTM D648                        |
|                                             | @Thickness 3.20 mm           | @Thickness 0.126 in                |                                  |
| Vicat Softening Point                       | 149 °C                       | 300 °F                             | Rate B/50; ISO 306               |
|                                             | 150 °C                       | 302 °F                             | Rate B/120; ISO 306              |
|                                             | 150 °C                       | 302 °F                             | Rate B/50; ASTM D1525            |

| Optical Properties    | Metric             | English             | Comments            |
|-----------------------|--------------------|---------------------|---------------------|
| Refractive Index      | 1.586              | 1.586               | ISO 489             |
| Haze                  | <= 0.80 %          | <= 0.80 %           | ASTM D1003          |
|                       | @Thickness 2.54 mm | @Thickness 0.100 in |                     |
| 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 |

| Descriptive Properties | Value | Comments |
|------------------------|-------|----------|
|------------------------|-------|----------|

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