

## SABIC Innovative Plastics Lexan® HPS2 PC (Asia Pacific)

Category : Polymer , Thermoplastic , Polycarbonate (PC)

### Material Notes:

Med/high flow polycarbonate. For medical devices and pharmaceutical applications. Healthcare management of change, biocompatible (ISO10993 or USP Class VI). EtO, steam, e-beam and gamma sterilizable. Contains mold release.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_SABIC-Innovative-Plastics-Lexan-HPS2-PC-Asia-Pacific.php](http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-Lexan-HPS2-PC-Asia-Pacific.php)

| Physical Properties                | Metric  | English   | Comments                                |
|------------------------------------|---|---|---|
| Specific Gravity                   | 1.20 g/cc   | 1.20 g/cc   | ASTM D792                               |
| Density                            | 1.19 g/cc   | 0.0430 lb/in <sup>3</sup>                             | ASTM D792                               |
| Water Absorption                   | 0.15 %<br>@Time 86400 sec                             | 0.15 %<br>@Time 24.0 hour                             | ASTM D570                               |
| Moisture Absorption at Equilibrium | 0.35 %  | 0.35 %  | ASTM D570                               |
|                                    | 0.58 %<br>@Temperature 100 °C                         | 0.58 %<br>@Temperature 212 °F                         | ASTM D570                               |
| Linear Mold Shrinkage, Flow        | 0.0050 - 0.0070 cm/cm<br>@Thickness 3.20 mm           | 0.0050 - 0.0070 in/in<br>@Thickness 0.126 in          | SABIC Method                            |
| Melt Flow                          | 17.5 g/10 min<br>@Load 1.20 kg,<br>Temperature 300 °C | 17.5 g/10 min<br>@Load 2.65 lb,<br>Temperature 572 °F | ASTM D1238                              |
| Melt Index of Compound             | 16 g/10 min<br>@Load 1.20 kg,<br>Temperature 300 °C   | 16 g/10 min<br>@Load 2.65 lb,<br>Temperature 572 °F   | MVR [cm <sup>3</sup> /10 min]; ISO 1133 |

| Mechanical Properties     | Metric   | English  | Comments                     |
|---------------------------|----------|----------|------------------------------|
| Hardness, Rockwell M      | 70       | 70       | ASTM D785                    |
| Hardness, Rockwell R      | 118      | 118      | ASTM D785                    |
| Tensile Strength at Break | 65.0 MPa | 9430 psi | 50 mm/min; ISO 527           |
|                           | 68.0 MPa | 9860 psi | Type I, 50 mm/min; ASTM D638 |
| Tensile Strength, Yield   | 62.0 MPa | 8990 psi | Type I, 50 mm/min; ASTM D638 |
|                           | 63.0 MPa | 9140 psi | 50 mm/min; ISO 527           |
| Elongation at Break       | 100 %    | 100 %    | 50 mm/min; ISO 527           |

| Mechanical Properties          | Metric                      | English                     | Comments                                      |
|--------------------------------|-----------------------------|-----------------------------|---|
| Elongation at Yield            | 6.0 %                       | 6.0 %                       | 50 mm/min; ISO 527                            |
|                                | 7.0 %                       | 7.0 %                       | Type I, 50 mm/min; ASTM D638                  |
| Tensile Modulus                | 2.35 GPa                    | 341 ksi                     | 1 mm/min; ISO 527                             |
|                                | 2.37 GPa                    | 344 ksi                     | 50 mm/min; ASTM D638                          |
| Flexural Yield Strength        | 90.0 MPa                    | 13100 psi                   | 2 mm/min; ISO 178                             |
|                                | 96.0 MPa                    | 13900 psi                   | 1.3 mm/min, 50 mm span; ASTM D790             |
| Flexural Modulus               | 2.13 GPa                    | 309 ksi                     | 1.3 mm/min, 50 mm span; ASTM D790             |
|                                | 2.30 GPa                    | 334 ksi                     | 2 mm/min; ISO 178                             |
| Izod Impact, Notched           | 1.06 - 6.94 J/cm            | 1.99 - 13.0 ft-lb/in        | colors; ASTM D256                             |
|                                | 6.94 J/cm                   | 13.0 ft-lb/in               | natural, tints; ASTM D256                     |
| Izod Impact, Unnotched         | 32.04 J/cm                  | 60.02 ft-lb/in              | ASTM D4812                                    |
| Izod Impact, Notched (ISO)     | 12.0 kJ/m <sup>2</sup>      | 5.71 ft-lb/in <sup>2</sup>  | 80*10*4; ISO 180/1A                           |
| Izod Impact, Unnotched (ISO)   | NB                          | NB                          | 80*10*4; ISO 180/1U                           |
|                                | NB<br>@Temperature -30.0 °C | NB<br>@Temperature -22.0 °F | 80*10*4; ISO 180/1U                           |
| Charpy Impact Unnotched        | NB                          | NB                          | Edgew 80*10*4 sp=62mm; ISO 179/1eU            |
|                                | NB<br>@Temperature -30.0 °C | NB<br>@Temperature -22.0 °F | Edgew 80*10*4 sp=62mm; ISO 179/1eU            |
| Charpy Impact, Notched         | 1.00 J/cm <sup>2</sup>      | 4.76 ft-lb/in <sup>2</sup>  | Edgew 80*10*4 sp=62mm; ISO 179/1eA            |
|                                | 3.50 J/cm <sup>2</sup>      | 16.7 ft-lb/in <sup>2</sup>  | ISO 179/2C                                    |
| Tensile Impact Strength        | 472 kJ/m <sup>2</sup>       | 225 ft-lb/in <sup>2</sup>   | Type S; ASTM D1822                            |
| Dart Drop, Total Energy        | 62.0 J                      | 45.7 ft-lb                  | Instrumented Impact Energy @ peak; ASTM D3763 |
|                                | 169 J                       | 125 ft-lb                   | ASTM D3029                                    |
| Taber Abrasion, mg/1000 Cycles | 10                          | 10                          | CS-17, 1 kg; ASTM D1044                       |

| Thermal Properties | Metric | English | Comments |
|--------------------|--------|---------|----------|
|--------------------|--------|---------|----------|

| Thermal Properties                          | Metric   | English   | Comments                           |
|---|--|---|------------------------------------|
| CTE, linear, Parallel to Flow               | 68.4 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$ | 38.0 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$  | ASTM E 831                         |
|   | @Temperature -40.0 - 95.0 $^\circ\text{C}$     | @Temperature -40.0 - 203 $^\circ\text{F}$         |                                    |
|   | 70.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$ | 38.9 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$  | ISO 11359-2                        |
|   | @Temperature 23.0 - 80.0 $^\circ\text{C}$      | @Temperature 73.4 - 176 $^\circ\text{F}$          |                                    |
| Specific Heat Capacity                      | 1.25 J/g- $^\circ\text{C}$                     | 0.299 BTU/lb- $^\circ\text{F}$                    | ASTM C351                          |
| Thermal Conductivity                        | 0.190 W/m-K                                    | 1.32 BTU-in/hr-ft <sup>2</sup> - $^\circ\text{F}$ | ASTM C177                          |
|   | 0.200 W/m-K                                    | 1.39 BTU-in/hr-ft <sup>2</sup> - $^\circ\text{F}$ | ISO 8302                           |
| Deflection Temperature at 0.46 MPa (66 psi) | 133 $^\circ\text{C}$                           | 271 $^\circ\text{F}$                              | Edgew 120*10*4 sp=100mm; ISO 75/Be |
|   | 137 $^\circ\text{C}$                           | 279 $^\circ\text{F}$                              | unannealed; ASTM D648              |
|   | @Thickness 6.40 mm                             | @Thickness 0.252 in                               |                                    |
| Deflection Temperature at 1.8 MPa (264 psi) | 122 $^\circ\text{C}$                           | 252 $^\circ\text{F}$                              | Edgew 120*10*4 sp=100mm; ISO 75/Ae |
|   | 129 $^\circ\text{C}$                           | 264 $^\circ\text{F}$                              | unannealed; ASTM D648              |
|   | @Thickness 6.40 mm                             | @Thickness 0.252 in                               |                                    |
| Vicat Softening Point                       | 140 $^\circ\text{C}$                           | 284 $^\circ\text{F}$                              | Rate B/50; ISO 306                 |
|   | 141 $^\circ\text{C}$                           | 286 $^\circ\text{F}$                              | Rate B/120; ISO 306                |
| Oxygen Index                                | 25 %   | 25 %  | ISO 4589                           |

| Optical Properties    | Metric             | English             | Comments            |
|-----------------------|--------------------|---------------------|---------------------|
| Refractive Index      | 1.586              | 1.586               | ASTM D542           |
| Haze                  | 1.0 %              | 1.0 %               | ASTM D1003          |
|                       | @Thickness 2.54 mm | @Thickness 0.100 in |                     |
| Transmission, Visible | 88 %               | 88 %                | 2.54 mm; ASTM D1003 |

| Electrical Properties | Metric                        | English                       | Comments       |
|-----------------------|-------------------------------|-------------------------------|----------------|
| Volume Resistivity    | $\geq 1.00\text{e}+15$ ohm-cm | $\geq 1.00\text{e}+15$ ohm-cm | IEC 60093      |
|                       | $\geq 1.00\text{e}+17$ ohm-cm | $\geq 1.00\text{e}+17$ ohm-cm | ASTM D257      |
| Surface Resistance    | $\geq 1.00\text{e}+15$ ohm    | $\geq 1.00\text{e}+15$ ohm    | ROA; IEC 60093 |
| Dielectric Constant   | 2.7                           | 2.7                           | IEC 60250      |
|                       | @Frequency 1.00e+6            | @Frequency 1.00e+6            |                |

| Electrical Properties | Hz<br>Metric              | Hz<br>English             | Comments            |
|-----------------------|---------------------------|---------------------------|---------------------|
|                       | 2.7                       | 2.7                       |                     |
|                       | @Frequency 50.0 - 60.0 Hz | @Frequency 50.0 - 60.0 Hz | IEC 60250           |
|                       | 2.96                      | 2.96                      |                     |
|                       | @Frequency 1.00e+6 Hz     | @Frequency 1.00e+6 Hz     | ASTM D150           |
|                       | 3.17                      | 3.17                      |                     |
|                       | @Frequency 50.0 - 60.0 Hz | @Frequency 50.0 - 60.0 Hz | ASTM D150           |
| Dielectric Strength   | 14.9 kV/mm                | 378 kV/in                 |                     |
|                       | @Thickness 3.20 mm        | @Thickness 0.126 in       | in air; ASTM D149   |
|                       | 17.0 kV/mm                | 432 kV/in                 |                     |
|                       | @Thickness 3.20 mm        | @Thickness 0.126 in       | in oil; IEC 60243-1 |
| Dissipation Factor    | 0.00090                   | 0.00090                   |                     |
|                       | @Frequency 50.0 - 60.0 Hz | @Frequency 50.0 - 60.0 Hz | ASTM D150           |
|                       | 0.0010                    | 0.0010                    |                     |
|                       | @Frequency 50.0 - 60.0 Hz | @Frequency 50.0 - 60.0 Hz | IEC 60250           |
|                       | 0.010                     | 0.010                     |                     |
|                       | @Frequency 1.00e+6 Hz     | @Frequency 1.00e+6 Hz     | IEC 60250           |
|                       | 0.010                     | 0.010                     |                     |
|                       | @Frequency 1.00e+6 Hz     | @Frequency 1.00e+6 Hz     | ASTM D150           |

| Descriptive Properties            | Value                  | Comments       |
|-----------------------------------|------------------------|----------------|
| Ball Pressure Test, 125°C +/- 2°C | PASSES                 | IEC 60695-10-2 |
| Specific Volume                   | 0.83cm <sup>3</sup> /g | ASTM D792      |

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