

## SABIC Innovative Plastics Lexan® HPX8R PC Copolymer (Europe-Africa-Middle East)

Category : Polymer , Thermoplastic , Polycarbonate (PC)

### Material Notes:

Very high flow specialty polycarbonate with outstanding processability and ductility. For medical devices and pharmaceutical applications. Healthcare management of change, biocompatible (ISO10993 or USP Class VI). ETO sterilizable. Contains mold release. This data was supplied by SABIC-IP for the Europe-Africa-Middle East region.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_SABIC-Innovative-Plastics-Lexan-HPX8R-PC-Copolymer-Europe-Africa-Middle-East.php](http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-Lexan-HPX8R-PC-Copolymer-Europe-Africa-Middle-East.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 <sup>3</sup>                           | ISO 1183                                             |
| Moisture Absorption at Equilibrium | 0.090 %                                             | 0.090 %                                             | 23°C / 50% RH; ISO 62                                |
| Water Absorption at Saturation     | 0.12 %<br>@Temperature 23.0 °C                      | 0.12 %<br>@Temperature 73.4 °F                      | ISO 62                                               |
| Linear Mold Shrinkage, Flow        | 0.0040 - 0.0080 cm/cm<br>@Thickness 3.20 mm         | 0.0040 - 0.0080 in/in<br>@Thickness 0.126 in        | SABIC Method                                         |
| Linear Mold Shrinkage, Transverse  | 0.0040 - 0.0080 cm/cm<br>@Thickness 3.20 mm         | 0.0040 - 0.0080 in/in<br>@Thickness 0.126 in        | SABIC Method                                         |
| Melt Flow                          | 33 g/10 min<br>@Load 1.20 kg,<br>Temperature 300 °C | 33 g/10 min<br>@Load 2.65 lb,<br>Temperature 572 °F | [cm <sup>3</sup> /10 min] Melt Volume Rate; ISO 1133 |
|                                    | 35 g/10 min<br>@Load 1.20 kg,<br>Temperature 300 °C | 35 g/10 min<br>@Load 2.65 lb,<br>Temperature 572 °F | ASTM D 1238                                          |

| Mechanical Properties     | Metric   | English  | Comments                      |
|---------------------------|----------|----------|-------------------------------|
| Hardness, Rockwell L      | 90       | 90       | ASTM D 785                    |
| Tensile Strength at Break | 56.0 MPa | 8120 psi | 50 mm/min; ISO 527            |
|                           | 58.0 MPa | 8410 psi | Type I, 50 mm/min; ASTM D 638 |
| Tensile Strength, Yield   | 59.0 MPa | 8560 psi | Type I, 50 mm/min; ASTM D 638 |
|                           | 59.0 MPa | 8560 psi | 50 mm/min; ISO 527            |

| Elongation at Break<br>Mechanical Properties | 118.6 %<br>Metric                   | 118.6 %<br>English                      | 50 mm/min; ISO 527<br>Comments             |
|----------------------------------------------|-------------------------------------|-----------------------------------------|--------------------------------------------|
|                                              | 118.9 %                             | 118.9 %                                 | Type I, 50 mm/min; ASTM D 638              |
| Elongation at Yield                          | 5.4 %                               | 5.4 %                                   | 50 mm/min; ISO 527                         |
|                                              | 5.7 %                               | 5.7 %                                   | Type I, 50 mm/min; ASTM D 638              |
| Tensile Modulus                              | 2.36 GPa                            | 342 ksi                                 | 50 mm/min; ASTM D 638                      |
|                                              | 2.40 GPa                            | 348 ksi                                 | 1 mm/min; ISO 527                          |
| Flexural Yield Strength                      | 92.0 MPa                            | 13300 psi                               | 2 mm/min; ISO 178                          |
|                                              | 99.0 MPa                            | 14400 psi                               | 1.3 mm/min, 50 mm span; ASTM D 790         |
| Flexural Modulus                             | 2.25 GPa                            | 326 ksi                                 | 2 mm/min; ISO 178                          |
|                                              | 2.35 GPa                            | 341 ksi                                 | 1.3 mm/min, 50 mm span; ASTM D 790         |
| Izod Impact, Notched                         | 2.20 J/cm<br>@Temperature -30.0 °C  | 4.12 ft-lb/in<br>@Temperature -22.0 °F  | ASTM D 256                                 |
|                                              | 7.02 J/cm<br>@Temperature 23.0 °C   | 13.2 ft-lb/in<br>@Temperature 73.4 °F   | ASTM D 256                                 |
| Izod Impact, Notched (ISO)                   | 30.0 kJ/m²<br>@Temperature -30.0 °C | 14.3 ft-lb/in²<br>@Temperature -22.0 °F | 80*10*3; ISO 180/1A                        |
|                                              | 60.0 kJ/m²<br>@Temperature 23.0 °C  | 28.6 ft-lb/in²<br>@Temperature 73.4 °F  | 80*10*3; ISO 180/1A                        |
| Izod Impact, Unnotched (ISO)                 | NB<br>@Temperature 23.0 °C          | NB<br>@Temperature 73.4 °F              | 80*10*3; ISO 180/1U                        |
|                                              | NB<br>@Temperature -30.0 °C         | NB<br>@Temperature -22.0 °F             | 80*10*3; ISO 180/1U                        |
| Charpy Impact Unnotched                      | NB<br>@Temperature 23.0 °C          | NB<br>@Temperature 73.4 °F              | Edgew 80*10*3 sp=62mm; ISO 179/1eU         |
|                                              | NB<br>@Temperature -30.0 °C         | NB<br>@Temperature -22.0 °F             | Edgew 80*10*3 sp=62mm; ISO 179/1eU         |
| Charpy Impact, Notched                       | 3.00 J/cm²<br>@Temperature -30.0 °C | 14.3 ft-lb/in²<br>@Temperature -22.0 °F | V-notch Edgew 80*10*3 sp=62mm; ISO 179/1eA |
|                                              | 6.00 J/cm²                          | 28.6 ft-lb/in²                          | V-notch Edgew 80*10*3 sp=62mm;             |

| Mechanical Properties | @Temperature 23.0 °C<br>Metric | @Temperature 73.4 °F<br>English    | ISO 179/1eA<br>Comments                          |
|-----------------------|--------------------------------|------------------------------------|--------------------------------------------------|
| Impact Test           | 79.0 J<br>@Temperature 23.0 °C | 58.3 ft-lb<br>@Temperature 73.4 °F | Instrumented Impact Total Energy;<br>ASTM D 3763 |

| Thermal Properties                          | Metric                       | English                     | Comments                                              |
|---------------------------------------------|------------------------------|-----------------------------|-------------------------------------------------------|
| CTE, linear, Parallel to Flow               | 65.0 µm/m-°C                 | 36.1 µin/in-°F              | ASTM E 831                                            |
|                                             | @Temperature -40.0 - 95.0 °C | @Temperature -40.0 - 203 °F |                                                       |
|                                             | 65.0 µm/m-°C                 | 36.1 µin/in-°F              | ISO 11359-2                                           |
|                                             | @Temperature 23.0 - 80.0 °C  | @Temperature 73.4 - 176 °F  |                                                       |
| CTE, linear, Transverse to Flow             | 74.0 µm/m-°C                 | 41.1 µin/in-°F              | ASTM E 831                                            |
|                                             | @Temperature -40.0 - 95.0 °C | @Temperature -40.0 - 203 °F |                                                       |
|                                             | 74.0 µm/m-°C                 | 41.1 µin/in-°F              | ISO 11359-2                                           |
|                                             | @Temperature 23.0 - 80.0 °C  | @Temperature 73.4 - 176 °F  |                                                       |
| Deflection Temperature at 1.8 MPa (264 psi) | 117 °C                       | 243 °F                      | Flatw 80*10*4 sp=64mm; ISO 75/Af                      |
|                                             | 120 °C                       | 248 °F                      | unannealed; ASTM D 648                                |
|                                             | @Thickness 3.20 mm           | @Thickness 0.126 in         |                                                       |
| Vicat Softening Point                       | 137 °C                       | 279 °F                      | Rate B/50; ISO 306                                    |
|                                             | 138 °C                       | 280 °F                      | Rate A/50; ASTM D 1525                                |
|                                             | 140 °C                       | 284 °F                      | Rate B/120; ISO 306                                   |
| UL RTI, Electrical                          | 130 °C                       | 266 °F                      | UL 746B                                               |
| UL RTI, Mechanical without Impact           | 130 °C                       | 266 °F                      | UL 746B                                               |
| Flammability, UL94                          | HB                           | HB                          | UL 94                                                 |
|                                             | @Thickness 1.50 mm           | @Thickness 0.0591 in        |                                                       |
| Glow Wire Test                              | 825 °C                       | 1520 °F                     | Glow Wire Ignitability Temperature;<br>IEC 60695-2-13 |
|                                             | @Thickness 0.800 mm          | @Thickness 0.0315 in        |                                                       |
|                                             | 850 °C                       | 1560 °F                     | Glow Wire Ignitability Temperature;<br>IEC 60695-2-13 |
|                                             | @Thickness 3.00 mm           | @Thickness 0.118 in         |                                                       |
|                                             | 960 °C                       | 1760 °F                     | Glow Wire Flammability Index; IEC 60695-2-12          |

| Thermal Properties                | @Thickness 3.00 mm<br>Metric  | @Thickness 0.118 in<br>English | Comments       |
|-----------------------------------|-------------------------------|--------------------------------|----------------|
|                                   |                               |                                |                |
| Optical Properties                | Metric                        | English                        | Comments       |
| Haze                              | 3.0 %                         | 3.0 %                          | ASTM D 1003    |
|                                   | @Thickness 2.54 mm            | @Thickness 0.100 in            |                |
| Transmission, Visible             | 82 %                          | 82 %                           | ASTM D 1003    |
|                                   | @Thickness 2.54 mm            | @Thickness 0.100 in            |                |
|                                   |                               |                                |                |
| Electrical Properties             | Metric                        | English                        | Comments       |
| Volume Resistivity                | $\geq 1.00\text{e}+15$ ohm-cm | $\geq 1.00\text{e}+15$ ohm-cm  | ASTM D 257     |
| Surface Resistance                | $\geq 1.00\text{e}+15$ ohm    | $\geq 1.00\text{e}+15$ ohm     | ASTM D 257     |
|                                   |                               |                                |                |
| Descriptive Properties            |                               | Value                          | Comments       |
| Ball Pressure Test, 125°C +/- 2°C |                               | PASS                           | IEC 60695-10-2 |

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