

Revision 20231109

# LEXAN™ COPOLYMER XHT5146

### **REGION AMERICAS**

#### DESCRIPTION

XHT5146 is a high flow, high heat polycarbonate copolymer with a haze onset of 185C. It is available in a range of opaque colors.

#### **TYPICAL PROPERTY VALUES**

| ACCUMPCALImage: ControlTensile Stress, vid. Type I, 50 mm/min60MPaATM D638Tensile Stress, tyd. Type I, 50 mm/min65MPaATM D638Tensile Strain, tyf, Type I, 50 mm/min7.5& AMTM D638Tensile Strain, tyf, Type I, 50 mm/min45%ATM D638Tensile Modulus, 3 mm/min2600MPaATM D638Perural Stress, yiel, 1.3 mm/min, 50 mm span125MPaATM D638Revaral Modulus, 1.3 mm/min, 50 mm span2650MPa50 527Tensile Stress, pield, 50 mm/min80MPa50 527Tensile Strain, break, 50 mm/min250MPa50 527Tensile Strain, break, 50 mm/min250MPa50 527Tensile Strain, tensk, 50 mm/min250MPa50 727Tensile Modulus, 2 mm/min250MPa50 727Tensile Modulus, 2 mm/min250MPa50 727Tensile Modulus, 2 mm/min250MPa50 727Tensile Modulus, 2 mm/min250MPa50 178MPACT120MPa50 178MPACT120MPa50 178Lood Impact, notched, 30°C8I/mA STM D256Lood Impact, notched, 30°C8I/m60 180/10Lood Impact, notched, 30°10'3 3.9°CNBI/mA50 180/10Lood Impact, notched 80°10'3 3.9°CNBI/mA50 180/10Lood Impact, notched 80°10'3 spe2am8I/mA50 179/14ALood Impact, notched 80°10'3 spe2am18<  | PROPERTIES                                   | TYPICAL VALUES | UNITS  | TEST METHODS |
|--|--|----------------|--------|--------------|
| Tensile Stress, bit, Type I, 50 mm/min65MPaASTM D638Tensile Strain, bit, Type I, 50 mm/min7.5%ASTM D638Tensile Strain, bit, Type I, 50 mm/min600MPaASTM D638Tensile Strain, bits, Type I, 50 mm/min600MPaASTM D638Flexural Stress, yidd, 13 mm/min, 50 mm span2650MPa851M 0790Flexural Modulus, 1.3 mm/min, 50 mm span2650MPa805 277Tensile Stress, yidd, 50 mm/min63MPa805 277Tensile Stress, yield, 50 mm/min63MPa805 277Tensile Stress, yield, 50 mm/min7%805 277Tensile Stress, yield, 50 mm/min2500MPa805 277Tensile Stress, yield, 50 mm/min2500MPa805 277Tensile Modulus, 1mm/min200MPa805 277Tensile Modulus, 1mm/min250MPa805 277Tensile Modulus, 2 mm/min250MPa805 27Tensile Modulus, 2 mm/min200MPa805 27Tensile Modulus, 2 mm/min200MPa805 27Tensile Modulus, 2 mm/min80MPa805 27Tensile Modulus, 2 mm/min200MPa805 27Tensile Modulus, 2 mm/min800MPa805 27Tensile Modulus, 2 mm/min80MPa805 27Tensile Modulus, 2 mm/min80MPa805 27Tensile Modulus, 2 mm/min80MPa805 27Tensile Modulus, 2 mm/min80MPa805 27Tensile Modu  | MECHANICAL <sup>(1)</sup>                    |                |        |              |
| Tensile Strain, yid, "yei, is omm/min7.5%% ASIM D638Tensile Strain, bit, "ype I, 50 mm/min45%%MrATensile Strain, bit, "ype I, 50 mm/min2600MrAMrAMSIM D638Tensile Strain, yid, 1.3 mm/min, 50 mm span2650MrAMrAMSIM D790Tensile Strain, yidel, 50 mm/min80MrAMSIM D790Tensile Strain, yidel, 50 mm/min610MrAMSIM D790Tensile Strain, yidel, 50 mm/min7%MSIM D790Tensile Strain, break, 50 mm/min2500MrAMSIM D592Tensile Strain, break, 50 mm/min2500MrAMSIM D561Tensile Strain, break, 20 mm/min2500MrAMSIM D561Tensile Strain, break, 20 mm/min2500MrAMSIM D561Tensile Strain, break, 20 mm/min2500MrAMSIM D561Ibruard Moduka, 2 mm/min2500MrAMSIM D561Ibruard Moduka, 2 mm/min651/mMSIM D561Ibruard Moduka, 2 mm/min651/mMSIM D561Ibruard Moduka, 2 mm/min80MRAMSIM D561Ibruard Moduka, 2 mm/min651/mMSIM D561Ibruard Moduka, 2 mm/min80MRAMSIM D561Ibruard Moduka, 2 mm/min80MSIMMSIM D561Ibruard Moduka, 2 mm/minMSIM D56MSIMMSIM D561Ibruard Moduka, 2 mm/minMSIM D561MSIM D561Ibruard Moduka, 2 mm/minMSIM D561MSIM D561Ibruard Moduka, 3 mm/min, 50 mm span   | Tensile Stress, yld, Type I, 50 mm/min       | 80             | MPa    | ASTM D638    |
| Tensile Strain, brk, Type I, 50 mm/min45%A STM D638Tensile Modulus, 5 mm/min2600MPaASTM D638Rexural Modulus, 5 mm min25MPaASTM D790Rexural Modulus, 1 mm/min, 50 mm span2650MPaS0 527Tensile Stress, yield, 50 mm/min6MPaS0 527Tensile Stress, yield, 50 mm/min7%S0 527Tensile Stress, break, 50 mm/min2500MPaS0 527Tensile Stress, break, 50 mm/min2500MPaS0 527Tensile Modulus, 1 mm/min2500MPaS0 527Tensile Modulus, 1 mm/min2500MPaS0 527Tensile Modulus, 2 mm/min2500MPaS0 527Tensile Modulus, 2 mm/min2500MPaS0 577Tensile Modulus, 2 mm/min250MPaS0 178Tensile Modulus, 2 mm/min250MPaS0 178Tensile Modulus, 2 mm/min50 180MPaS0 178Lood Impact, notched, 39°C8J/mA STM D256Lood Impact, notched, 39°C8J/mS0 180/11Lood Impact, notched 80°103 +23°C8J/m2S0 180/11Lood Impact, notched 80°103 +23°C8J/m2S0 180/11Lood Impact, notched 80°103 +26°C8J/m2S0 180/14Lood Impact, no  | Tensile Stress, brk, Type I, 50 mm/min       | 65             | MPa    | ASTM D638    |
| Testile Modulus, 7m /min, 50 mm span2600MFaASTM D638Flexural Stress, yield, 13 mm /min, 50 mm span2650MFaASTM D790Flexural Modulus, 13 mm /min, 50 mm span2650MFa150 527Tessile Stress, yield, 50 mm /min65MFa150 527Tensile Stress, break, 50 mm /min7%150 527Tensile Stress, yield, 50 mm /min7%150 527Tensile Stress, yield, 20 mm /min2500MFa150 527Tensile Stress, yield, 2 mm /min120MFa150 178Flexural Stress, yield, 2 mm /min2500MFa150 178Tensile Modulus, 2 mm /min2500MFa150 178Tessile Strain, break, 50 mm /min250MFa150 178Tessile Modulus, 2 mm /min120MFa150 178Tessile Modulus, 2 mm /min120MFa150 178Tessile Modulus, 2 mm /min120MFa150 178Tessile Attrast, notched, 23°C35J/mASTM D256Lood Impact, notched 80°10°3 +23°C16J/m150 180/14Lood Impact, nontched 80°10°3 +23°C8K/m <sup>2</sup> 150 180/14Lood Impact, nontched 80°10°3 +23°C8K/m <sup>2</sup> 150 180/14Lood Impact, nontched 80°10°3 +23°C8K/m <sup>2</sup> 150 180/14Lood Impact, nontched 80°10°3 spe2tzm11K/m <sup>2</sup> 150 180/14Lood Impact, nontched 80°10°3 spe2tzm18K/m <sup>2</sup> 150 180/14Lood Impact, notched 80°10°3 spe2tzm19K/m <sup>2</sup> 150 179/140  | Tensile Strain, yld, Type I, 50 mm/min       | 7.5            | %      | ASTM D638    |
| Flexural Stress, yield, 1.3 mm/min, 50 mm span125MPaASTM 0790Flexural Modulus, 1.3 mm/min, 50 mm span2650MPaASTM 0790Tensile Stress, yield, 50 mm/min80MPa150 527Tensile Strain, yield, 50 mm/min65%150 527Tensile Strain, yield, 50 mm/min7%150 527Tensile Strain, yield, 50 mm/min2500MPa150 527Tensile Strain, break, 50 mm/min2500MPa150 527Tensile Strain, break, 50 mm/min2500MPa150 178Flexural Modulus, 2 mm/min2500MPa150 178Flexural Stress, yield, 2 mm/min250MPa150 178Flexural Stress, yield, 2 mm/min801/mASTM 0256Izod Impact, notched, 33°C801/mASTM 0256Izod Impact, notched, 33°C801/mMSTM 0256Izod Impact, unnotched 80°10°3 +23°CN8Kl/m2150 180/110Izod Impact, unnotched 80°10°3 +23°C11Kl/m2150 180/114Izod Impact, unnotched 80°10°3 +23°C8Kl/m2150 180/14Izod Impact, unnotched 80°10°3 +23°C8Kl/m2150 180/14Izod Impact, unnotche Gagew 80°10°3 spe2mmN8Kl/m2150 180/14Izod Impact, unnotche Gagew 80°10°3 spe2mmN8Kl/m2150 179/140Izod Impact, unnotche Gagew 80°10°3 spe2mmN8Kl/m2150 179/140Charpy 23°C, Unnotch Edgew 80°10°3 spe2mmN8Kl/m2150 179/140Charpy 23°C, Unnotch Edgew 80°10°3 spe2mm<  | Tensile Strain, brk, Type I, 50 mm/min       | 45             | %      | ASTM D638    |
| Flexaral Modulus, 1.3 mm/min, 50 mm span2650MPaASTM 0790Tensile Stress, break, 50 mm/min60MPa05 527Tensile Stress, break, 50 mm/min7%80 527Tensile Strain, yield, 50 mm/min2500MPa05 527Tensile Strain, break, 50 mm/min2500MPa05 527Tensile Modulus, 1 mm/min2500MPa05 178Flexural Stress, yield, 2 mm/min2500MPa05 178Tensile Modulus, 2 mm/min2500MPa05 178MPACT <sup>10</sup> MPa50 178Instance, notched, 33°C360MPaMS 05 267Instance, notched, 30°C9MPa05 178Instrumented Dart Impact Total Energy, 23°C65JASTM 0256Izod Impact, unotched 80°10°3 + 23°CNBM/m280 180/10Izod Impact, unotched 80°10°3 + 23°CNBM/m280 180/10Izod Impact, unotched 80°10°3 + 23°C8M/m280 180/10Izod Impact, unotched 80°10°3 + 23°CNBM/m280 180/10Izod Impact, unotched 80°10°3 + 23°C8M/m280 180/10Izod Impact, unotched 80°10°3 + 23°C8M/m280 180/10Izod Impact, unotched 80°10°3 + 23°C8M/m280 180/10Izod Impact, unotched 80°10°3 + 26°E8M/m280 180/10Izod Impact, unotched 80°10°3 + 26°E8M/m280 180/10Charpy 30°C, Unotch Edgew 80°10°3 p=62mm8M/m280 180/10Charpy 30°C, Unotch Edgew 80°10°3 p=62   | Tensile Modulus, 5 mm/min                    | 2600           | MPa    | ASTM D638    |
| Tensile Stress, yield, 50 mm/min80MPa80 527Tensile Strain, yield, 50 mm/min7%8050 527Tensile Strain, break, 50 mm/min7%8050 527Tensile Strain, break, 50 mm/min2500MPa80 527Tensile Modulus, 1 mm/min2500MPa80 178Tensile Modulus, 2 mm/min2500MPa80 178Instance Modulus, 2 mm/min2500MPa80 178Mapact notched, 30°C35J/mASTM 0256Instamented Dart Impact Total Energy, 23°C65JASTM 0256Instamented Dart Impact Total Energy, 23°C88M/ma80 180/10Izod Impact, notched 80°10°3 +23°CN8M/ma80 180/10Izod Impact, notched 80°10°3 +23°C88M/ma80 180/10Izod Impact, notched 80°10°3 +23°C88M/ma80 180/10Izod Impact, notched 80°10°3 +23°C88M/ma80 180/10Izod Impact, notched 80°10°3 +23°C11M/ma80 180/10Izod Impact, notched 80°10°3 +23°C88M/ma80 180/10Izod Impact, notched 80°10°3 +23°C88M/ma80 180/10Charpy 30°C, Unotch Edgew 80°10°3 spe52mm80M/ma80 180/11Charpy 30°C, Unotch Edgew 80°10°3 spe52mm80M/ma80 179/14ACharpy 30°C, Unotch Edgew 80°10°3 spe52mm80M/ma80 179/14ACharpy 30°C, Unotch Edgew 80°10°3 spe52mm185M/ma80 179/14ACharpy 30°C, Unotch Edgew 80°10°3 spe52mm80M/m  | Flexural Stress, yld, 1.3 mm/min, 50 mm span | 125            | MPa    | ASTM D790    |
| Tensile Streak, 50 mm/min65MPa150 527Tensile Strain, yield, 50 mm/min7%150 527Tensile Modulus, 1 mm/min2500MPa150 527Hexural Modulus, 2 mm/min2500MPa150 78Tensile Streak, 50 mm/min2500MPa150 78Hexural Modulus, 2 mm/min2500MPa150 78Itsural Modulus, 2 mm/min250MPa150 78Itsural Modulus, 2 mm/min250MPa150 78Itsural Modulus, 2 mm/min801/mASTM 0256Itsural Modulus, 2 mm/min801/mMSTM 0256Itsural Modulus, 2 mm/min811/mMSTM 0256Itsural Modulus, 2 mm/min81Mm²MSTM 0256Itsural Modulus, 2 mm/min81Mm²MSTM 026Itsural Modulus, 2 mm/min81Mm²MSTM 026Itsural Modulus, 2 mm/min </td <td>Flexural Modulus, 1.3 mm/min, 50 mm span</td> <td>2650</td> <td>MPa</td> <td>ASTM D790</td>  | Flexural Modulus, 1.3 mm/min, 50 mm span     | 2650           | MPa    | ASTM D790    |
| Tensile Strain, yield, 50 mm/min7%80105 527Tensile Modulus, 1 mm/min2500MPa105 527Flexural Stress, yield, 2 mm/min2500MPa150 178Flexural Modulus, 2 mm/min2500MPa150 178Textural Modulus, 2 mm/min2500MPa150 178Textural Modulus, 2 mm/min2500MPa150 178Textural Modulus, 2 mm/min250MPa150 178Textural Modulus, 2 mm/min65JASTM 0256Tool Impact, notched, 30°C35J/mASTM 0256Total Impact, 1016 Energy, 23°C65JASTM 03763Total Impact, unotched 80°10°3 +23°C11M/m <sup>2</sup> 150 180/14Total Impact, unotched 80°10°3 +23°C11M/m <sup>2</sup> 150 180/14Total Impact, unotched 80°10°3 +23°C8M/m <sup>2</sup> 150 180/14Total Impact, unotched 80°10°3 +262mm11M/m <sup>2</sup> 150 180/14Total Impact, unotched 80°10°3 +262mm8M/m <sup>2</sup> 150 180/14Total Softening Tem, Bate 8/508M/m <sup>2</sup> 150 179/1eATotal Charpy 30°C, Unotch Edgew 80°10°3 sp=62mm185M/m <sup>2</sup> 150 179/1eATotal Charpy 30°C, Unotch Edgew 80°10°3 sp=62mm18516010/m <sup>2</sup> Total Softening Tem, Rate 8/50190%CASTM 155HDT, 454 MPA, 3.2 mm, unanceld174%CASTM 155HDT, 454 MPA, 3.2 mm, unanceld174%CASTM 156HDT, 454 MPA, 3.2 mm, unanceld6.6551/°CASTM 1648  | Tensile Stress, yield, 50 mm/min             | 80             | MPa    | ISO 527      |
| Tensile Strain, break, 50 mi/min45%150 527Tensile Modulus, 1 mm/min2500MPa150 527Flexural Stress, yield, 2 mm/min120MPa150 178Flexural Modulus, 2 mm/min2550MPa150 178IMPact <sup>11</sup>   | Tensile Stress, break, 50 mm/min             | 65             | MPa    | ISO 527      |
| Tensile Modulus, 1 mm/min2500MPaIs0 527Flexural Stress, yield, 2 mm/min250MPaS0 178Flexural Modulus, 2 mm/min2550MPaS0 178IMPACT <sup>(1)</sup> S178S178Izod Impact, notched, 23°C80J/mASTM 0256Instrumented Dart Impact Total Energy, 23°C65JASTM 0256Izod Impact, notched 80°10°3 +23°CNBK/m²S0 180/10Izod Impact, notched 80°10°3 +23°C11S0 180/10S0 180/10Izod Impact, notched 80°10°3 +23°C8K/m²S0 180/10Izod Impact, notched 80°10°3 -39°C8K/m²S0 180/10Izod Impact, notched 80°10°3 -39°C8K/m²S0 180/10Izod Impact, notched 80°10°3 -sp=2amNBK/m²S0 180/10Charpy -30°C, Unotch Edgew 80°10°3 sp=62amNBK/m²S0 179/14Charpy -30°C, Unotch Edgew 80°10°3 sp=62amNBK/m²S0 179/14THEKMAL <sup>11</sup> S0S0 179/14S0 180/14Thetto Edgew 80°10°3 sp=62amNBK/m²S0 179/14Charpy -30°C, Unotch Edgew 80°10°3 sp=62amNBK/m²S0 180/14THEKMAL <sup>11</sup> S0S0 180/14S0 180/14THEKMALS0S0S0 180/14S0 180/14 <trr<td>S0S0 180/14</trr<td>  | Tensile Strain, yield, 50 mm/min             | 7              | %      | ISO 527      |
| Flexural Stress, yield, 2 mm/min120MPaISO 178Flexural Modulus, 2 mm/min2550MPaISO 178IMPACT <sup>(1)</sup> Impact, notched, 23°C80J/mASTM D256Izod Impact, notched, 30°C35J/mASTM D256Izod Impact, notched 80°10°3 42°C86JMomonSTM D3763Izod Impact, notched 80°10°3 42°CNBKl/m²ISO 180/10Izod Impact, notched 80°10°3 42°CNBKl/m²ISO 180/10Izod Impact, notched 80°10°3 42°CNBKl/m²ISO 180/14Izod Impact, notched 80°10°3 42°CNBKl/m²ISO 180/14Izod Impact, notched 80°10°3 42°CNBKl/m²ISO 180/14Izod Impact, notched 80°10°3 spe52mmNBKl/m²ISO 180/14Charpy 30°C, Vnotch Edgew 80°10°3 spe52mmNBKl/m²ISO 179/140Charpy 30°C, Unnotch Edgew 80°10°3 spe52mmNBKl/m²ISO 179/140THEKMALTTTTVicto Affeng Temp, Rate 8/50190NBKl/m²ASTM D525HDT, 1.82 MPa, 3.2mm, unannealed185°CASTM D648CFE, 40°C to 40°C, flow6.0551/°CASTM D648CFE, 40°C to 40°C, flow6.0251/°CASTM D648CFE, 40°C to 40°C, flow6.0261/°CKl/m²CFE, 40°C to 40°C, flow6.0261/°CKl/m²CFE, 40°C to 40°C, flow7.02Kl/m²Kl/m²CFE, 40°C to 40°C, flow7.02Kl/m²Kl/m²CFE, 40°C to 40°C, flow <td>Tensile Strain, break, 50 mm/min</td> <td>45</td> <td>%</td> <td>ISO 527</td>  | Tensile Strain, break, 50 mm/min             | 45             | %      | ISO 527      |
| Hexaral Modules, 2 mm/min2550MPaIso 178IMPACT (1)Iso 178Izod Impact, notched, 23°C80J/mASTM D256Izod Impact, notched, 30°C35J/mASTM D256Instrumented Dart Impact Total Energy, 23°C65JASTM D3763Izod Impact, unnotched 80°10°3 +23°CNBKl/m²Iso 180/10Izod Impact, notched 80°10°3 +23°CNBKl/m²Iso 180/10Izod Impact, notched 80°10°3 +23°CNBKl/m²Iso 180/14Izod Impact, notched 80°10°3 -30°CNBKl/m²Iso 191/14Charpy 23°C, Unnotch Edgew 80°10°3 -spe2mmNBRefIso 179/14Charpy 30°C, Unnotch Edgew 80°10°3 -spe2mmNBKl/m²Iso 179/14HERMAL <sup>10</sup> Iso 180CASTM D1525HERMAL <sup>10</sup> Iso 180CASTM D1525HERMAL <sup>10</sup> Iso 180CASTM D548Izod Hong, Saze m, unannealedNBCASTM D648CTE, 40°C to 40°C, flowGeASTM C177AS   | Tensile Modulus, 1 mm/min                    | 2500           | MPa    | ISO 527      |
| INPACT <sup>(1)</sup> Izod Impact, notched, 23°C80J/mASTM D256Izod Impact, notched, 30°C35J/mASTM D256Instrumented Dart Impact Total Energy, 23°C65JASTM D3763Izod Impact, unnotched 80°10°3 +23°CNBkJ/m²Iso 180/10Izod Impact, notched 80°10°3 -30°CNBkJ/m²Iso 180/10Izod Impact, notched 80°10°3 -30°C8kJ/m²Iso 180/1AIzod Impact, notched 80°10°3 -spe2mm11kJ/m²Iso 180/1AIzod Impact, notched 80°10°3 spe52mm8kJ/m²Iso 180/1ACharpy 23°C, Vnotch Edgew 80°10°3 spe52mm8kJ/m²Iso 179/1eACharpy 23°C, Unnotch Edgew 80°10°3 spe62mmNBkJ/m²Iso 179/1eACharpy 23°C, Unnotch Edgew 80°10°3 spe62mmNBkJ/m²Iso 179/1eUTHERMAL <sup>(1)</sup> VVSo 179/1eUIso 179/1eUTHERMAL <sup>(1)</sup> VSo 179/1eUIso 179/1eUTHERMAL <sup>(1)</sup> VSo 179/1eUIso 180/1ATherd Softenin Fenp, Rate B/50190°CASTM D525HDT, 0.45 MPA, 3.2 mm, unannealed174°CASTM D648CTE, 40°C to 40°C, flow6E051/°CASTM E831CTE, 40°C to 40°C, flow6E051/°CASTM E831CTE, 40°C to 40°C, flow6.2051/°CASTM E31CTE, 40°C to 40°C, flow6.2051/°CASTM E31CTE, 40°C to 40°C, flow6.2051/°CASTM E31CTE, 40°C to 40°C, flow6.2051/°CASTM E31 <tr< td=""><td>Flexural Stress, yield, 2 mm/min</td><td>120</td><td>MPa</td><td>ISO 178</td></tr<> | Flexural Stress, yield, 2 mm/min             | 120            | MPa    | ISO 178      |
| izod impact, notched, 23°C80//mASTM D256izod impact, notched, -30°C551/mASTM D256instrumented Dart impact Total Energy, 23°C651ASTM D3763izod impact, unnotched 80°10°3 +23°CNBkl/m²IS0180/10izod impact, notched 80°10°3 +23°CNBkl/m²IS0180/10izod impact, notched 80°10°3 +23°C11kl/m²IS0180/1Aizod impact, notched 80°10°3 +23°C8kl/m²IS0180/1Aizod impact, notched 80°10°3 +23°C8kl/m²IS0180/1Aizod impact, notched 80°10°3 +23°C8kl/m²IS0180/1Aizod impact, notched 80°10°3 +23°C8kl/m²IS0179/1Aizod impact, notched 80°10°3 sp=62mmNBkl/m²IS0179/1ACharpy 23°C, Unotch Edgew 80°10°3 sp=62mmNBkl/m²IS0179/1ACharpy 30°C, Lonotch Edgew 80°10°3 sp=62mmNBkl/m²IS0179/1ACharpy 30°C, Unotch Edgew 80°10°3 sp=62mmNBKl/m²ASTM D648DT, 1.52 MRA, 3.2 mm, unannealedNBiS01ASTM D648   | Flexural Modulus, 2 mm/min                   | 2550           | MPa    | ISO 178      |
| Izod Impact, notched, -30°C35JmASTM D256Instrumented Dart Impact Total Energy, 23°C65JASTM D3763Izod Impact, unnotched 80°10°3 +23°CNBKJm²S0 180/1UIzod Impact, notched 80°10°3 +23°C11KJm²S0 180/1AIzod Impact, notched 80°10°3 +23°C8KJm²S0 180/1AIzod Impact, notched 80°10°3 +23°C8KJm²S0 180/1AIzod Impact, notched 80°10°3 sp=62mm11KJm²S0 180/1ACharpy 23°C, V-notch Edgew 80°10°3 sp=62mm8KJm²S0 179/1eACharpy 30°C, Unnotch Edgew 80°10°3 sp=62mmNBKJm²S0 179/1eUCharpy 30°C, Unnotch Edgew 80°10°3 sp=62mmNBS0 180/1AS0 180/1ACharpy 30°C, Unnotch Edgew 80°10°3 sp=62mmNBS0 180/1AS0 180/1ACharpy 30°C, Unnotch Edgew                               | IMPACT <sup>(1)</sup>                        |                |        |              |
| Instrumented Dart Impact Total Energy, 23°C65JATM D3763izod Impact, unnotched 80°10°3 +23°CNBkl/m²ISO 180/1Uizod Impact, unnotched 80°10°3 +23°CNBkl/m²ISO 180/1Uizod Impact, notched 80°10°3 +23°C11kl/m²ISO 180/1Aizod Impact, notched 80°10°3 +23°C8kl/m²ISO 180/1Aizod Impact, notched 80°10°3 +23°C8kl/m²ISO 180/1Aizod Impact, notched 80°10°3 spe62mm11kl/m²ISO 179/1ACharpy 30°C, V-notch Edgew 80°10°3 spe62mm8kl/m²ISO 179/14Charpy 30°C, Unnotch Edgew 80°10°3 spe62mmNBkl/m²ISO 179/14Charpy 30°C, Unnotch Edgew 80°10°3 spe62mm190CASTM D155FERMAL <sup>11</sup> ISO 180ISO 180ISO 180/14ISO 180/14Charpy 40                             | Izod Impact, notched, 23°C                   | 80             | J/m    | ASTM D256    |
| Lood Impact, unnotched 80°10°3 +23°CNBkl/m²SO 180/10Izod Impact, unnotched 80°10°3 -30°CNBkl/m²SO 180/10Izod Impact, notched 80°10°3 +23°C11kl/m²SO 180/1AIzod Impact, notched 80°10°3 -30°C8kl/m²SO 180/1ACharpy 23°C, V-notch Edgew 80°10°3 sp=62mm11kl/m²SO 179/1eACharpy 30°C, V-notch Edgew 80°10°3 sp=62mm8kl/m²SO 179/1eACharpy 30°C, Unnotch Edgew 80°10°3 sp=62mmNBkl/m²SO 179/1eATHERMAL <sup>(1)</sup> SO 179/1eASO 179/1eATHERMAL <sup>(1)</sup> Yicat Softening Temp, Rate B/50190°C aASTM D525.HDT, J.82 MPA, 3.2 mm, unannealed174°C aGTE, 40°C to 40°C, flow6E·051/°C aCTE, 40°C to 40°C, flow6E·051/°C aGTE, 40°C to 40°C, flow6E·051/°C aCTE, 40°C to 40°C, flow62·051/°C aCTE, 40°C to 40°C, flow62·051/°C aCTE, 40°C to 40°C, flow7.E·051/°C   | Izod Impact, notched, -30°C                  | 35             | J/m    | ASTM D256    |
| Izod Impact, unnotched 80*10*3-30°C   NB   kJm²   ISO 180/14     Izod Impact, notched 80*10*3 +23°C   11   kJm²   ISO 180/1A     Izod Impact, notched 80*10*3 -30°C   8   kJm²   ISO 180/1A     Charpy 23°C, Vnotch Edgew 80*10*3 sp=62mm   11   kJm²   ISO 179/1eA     Charpy 30°C, Vnotch Edgew 80*10*3 sp=62mm   8   kJm²   ISO 179/1eA     Charpy 23°C, Unnotch Edgew 80*10*3 sp=62mm   NB   kJm²   ISO 179/1eU     Charpy 30°C, Unnotch Edgew 80*10*3 sp=62mm   NB   kJm²   ISO 179/1eU     Charpy 30°C, Unnotch Edgew 80*10*3 sp=62mm   NB   kJm²   ISO 179/1eU     THERMAL <sup>(1)</sup> .   ISO 179/1eU   ISO 179/1eU     Vicat Softening Temp, Rate B/50   190   °C   ASTM D1525     HDT, 0.45 MPa, 3.2 mm, unannealed   174   °C   ASTM D648     CTE, 40°C to 40°C, flow   6.E05   1/°C   ASTM E831     CTE, 40°C to 40°C, flow   6.E05   1/°C   ASTM E831     CTE, 40°C to 40°C, flow   0.2   W/m.°C   ASTM C177     CTE, 40°C to 40°C, flow   7.E05   | Instrumented Dart Impact Total Energy, 23°C  | 65             | J      | ASTM D3763   |
| izod Impact, notched 80°10°3 +23°C   11   kl/m²   Iso 180/1A     izod Impact, notched 80°10°3 -30°C   8   kl/m²   Iso 180/1A     Charpy 23°C, Vnotch Edgew 80°10°3 sp=62mm   11   kl/m²   Iso 179/1eA     Charpy 30°C, Vnotch Edgew 80°10°3 sp=62mm   8   kl/m²   Iso 179/1eA     Charpy 23°C, Unnotch Edgew 80°10°3 sp=62mm   NB   kl/m²   Iso 179/1eA     Charpy -30°C, Unnotch Edgew 80°10°3 sp=62mm   NB   kl/m²   Iso 179/1eU     THERMAL <sup>(1)</sup> Viat Softening Temp, Rate B/50   NB   kl/m²   Soft 179/1eU     Vicat Softening Temp, Rate B/50   190   °C   ASTM D1525   Soft 179/1eU     FUT, 0.45 MPa, 3.2 mm, unannealed   185   °C   ASTM D648   Soft 10648     HDT, 1.82 MPa, 3.2 mm, unannealed   174   °C   ASTM D648   Soft 10648   Soft 10648   Soft 10648   Soft 1648  | Izod Impact, unnotched 80*10*3 +23°C         | NB             | kJ/m²  | ISO 180/1U   |
| izod Impact, notched 80*10*3 - 30°C   8   kJ /m²   ISO 180/1A     Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm   11   kJ /m²   ISO 179/1eA     Charpy 30°C, V-notch Edgew 80*10*3 sp=62mm   8   kJ /m²   ISO 179/1eA     Charpy 23°C, Unnotch Edgew 80*10*3 sp=62mm   NB   kJ /m²   ISO 179/1eU     Charpy -30°C, Unnotch Edgew 80*10*3 sp=62mm   NB   kJ /m²   ISO 179/1eU     Charpy -30°C, Unnotch Edgew 80*10*3 sp=62mm   NB   kJ /m²   ISO 179/1eU     Charpy -30°C, Unnotch Edgew 80*10*3 sp=62mm   NB   kJ /m²   ISO 179/1eU     Charpy -30°C, Unnotch Edgew 80*10*3 sp=62mm   NB   kJ /m²   ISO 179/1eU     Vicat Softening Temp, Rate B/50   NB   KJ /m²   ASTM D1525     HDT, 0.45 MPa, 3.2 mm, unannealed   190   °C   ASTM D648     HDT, 1.82 MPa, 3.2 mm, unannealed   1640   °C   ASTM D648     CTE, 40°C to 40°C, flow   6.E05   1/°C   ASTM E831     CTE, 40°C to 40°C, flow   0.2   V/m °C   ASTM C177     CTE, 40°C to 40°C, flow   7.E05   1/°C   S0 11359:2  | Izod Impact, unnotched 80*10*3 -30°C         | NB             | kJ/m²  | ISO 180/1U   |
| Charpy 23°C, V-notch Edgew 80°10°3 sp=62mm11kl/m2ISO 179/1eACharpy -30°C, V-notch Edgew 80°10°3 sp=62mm8kl/m2ISO 179/1eACharpy 23°C, Unnotch Edgew 80°10°3 sp=62mmNBkl/m2ISO 179/1eUCharpy -30°C, Unnotch Edgew 80°10°3 sp=62mmNBISO 179/1eUISO 179/1eUTHERMAL <sup>(1)</sup> YISO 179/1eUISO 179/1eUISO 179/1eUVicat Softening Temp, Rate B/5019062ASTM D1525ISO 1350-2HDT, 1.82 MPa, 3.2mm, unannealed19062ASTM E831ISO 1831CTE, 40°C to 40°C, flow6.E051/°CASTM E831CTE, 40°C to 40°C, flow0.2V/m.°CASTM C177CTE, 40°C to 40°C, flow7.E051/°CISO 11359-2  | Izod Impact, notched 80*10*3 +23°C           | 11             | kJ/m²  | ISO 180/1A   |
| Charpy -30°C, V-notch Edgew 80°10°3 sp=62mm8k/m²ISO 179/1eACharpy 23°C, Unnotch Edgew 80°10°3 sp=62mmNBk/m²ISO 179/1eUCharpy -30°C, Unnotch Edgew 80°10°3 sp=62mmNBk/m²ISO 179/1eUTHERMAL''StoreASTM D1525StoreHDT, 0.45 MPa, 3.2 mm, unannealed190°CASTM D648HDT, 1.82 MPa, 3.2mm, unannealed6E-051/°CASTM E831CTE, 40°C to 40°C, flow6E-051/°CASTM E831CTE, 40°C to 40°C, flow0.2W/m.°CASTM C177CTE, 40°C to 40°C, flow7.E051/°CISO 11359-2  | Izod Impact, notched 80*10*3 -30°C           | 8              | kJ/m²  | ISO 180/1A   |
| Charpy 23°C, Unnotch Edgew 80°10°3 sp=62mm   NB   kJ/m²   ISO 179/1eU     Charpy 30°C, Unnotch Edgew 80°10°3 sp=62mm   NB   kJ/m²   ISO 179/1eU     THERMAL <sup>(1)</sup> Vicat Softening Temp, Rate B/50   190   °C   ASTM D1525     HDT, 0.45 MPa, 3.2 mm, unannealed   185   °C   ASTM D648     GCTE, -40°C to 40°C, flow   6.E-05   1/°C   ASTM E831     CTE, 40°C to 40°C, flow   6.E-05   1/°C   ASTM E831     Thermal Conductivity @ 25 °C   0.2   W/m.°C   ASTM C177     CTE, 40°C to 40°C, flow   7.E-05   1/°C   SO 11359-2   | Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm   | 11             | kJ/m²  | ISO 179/1eA  |
| Charpy -30°C, Unnotch Edgew 80°10°3 sp=62mm   NB   kJ/m²   ISO 179/1eU     THERMAL <sup>(1)</sup> THERMAL   THEMAL   THERMAL   THERMAL   THEMAL   THEMAL <td< td=""><td>Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm</td><td>8</td><td>kJ/m²</td><td>ISO 179/1eA</td></td<>   | Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm  | 8              | kJ/m²  | ISO 179/1eA  |
| THERMAL <sup>(1)</sup> Vicat Softening Temp, Rate B/50 190 °C ASTM D1525   HDT, 0.45 MPa, 3.2 mm, unannealed 185 °C ASTM D648   HDT, 1.82 MPa, 3.2 mm, unannealed 174 °C ASTM D648   CTE, -40°C to 40°C, flow 6.E·05 1/°C ASTM E831   CTE, -40°C to 40°C, flow 6.E·05 1/°C ASTM E831   CTE, -40°C to 40°C, flow 0.2 W/m·°C ASTM C177   Thermal Conductivity @ 25 °C 7.E·05 1/°C ISO 11359-2  | Charpy 23°C, Unnotch Edgew 80*10*3 sp=62mm   | NB             | kJ/m²  | ISO 179/1eU  |
| Vicat Softening Temp, Rate B/50   190   °C   ASTM D1525     HDT, 0.45 MPa, 3.2 mm, unannealed   185   °C   ASTM D648     HDT, 1.82 MPa, 3.2mm, unannealed   174   °C   ASTM D648     CTE, 40°C to 40°C, flow   6.605   1/°C   ASTM E831     Themal Conductivity@25°C   0.2   W/m.°C   ASTM C177     CTE, 40°C to 40°C, flow   7.605   1/°C   SO 11359-2  | Charpy -30°C, Unnotch Edgew 80*10*3 sp=62mm  | NB             | kJ/m²  | ISO 179/1eU  |
| HDT, 0.45 MPa, 3.2 mm, unannealed 185 °C ASTM D648   HDT, 1.82 MPa, 3.2mm, unannealed 174 °C ASTM D648   CTE, -40°C to 40°C, flow 6.E·05 1/°C ASTM E831   CTE, -40°C to 40°C, flow 6.E·05 1/°C ASTM E831   Thermal Conductivity @ 25 °C 0.2 W/m.°C ASTM C177   CTE, -40°C to 40°C, flow 7.E·05 1/°C ISO 11359-2  | THERMAL <sup>(1)</sup>                       |                |        |              |
| HDT, 1.82 MPa, 3.2mm, unannealed   174   °C   ASTM D648     CTE, -40°C to 40°C, flow   6.E·05   1/°C   ASTM E831     CTE, -40°C to 40°C, xflow   6.E·05   1/°C   ASTM E831     CTE, -40°C to 40°C, xflow   0.2   W/m·°C   ASTM C177     CTE, -40°C to 40°C, flow   7.E·05   1/°C   ISO 11359-2   | Vicat Softening Temp, Rate B/50              | 190            | °C     | ASTM D1525   |
| CTE, -40°C to 40°C, flow 6.E-05 1/°C ASTM E831   CTE, -40°C to 40°C, flow 6.E-05 1/°C ASTM E831   Thermal Conductivity @ 25 °C 0.2 W/m-°C ASTM C177   CTE, -40°C to 40°C, flow 7.E-05 1/°C ISO 11359-2   | HDT, 0.45 MPa, 3.2 mm, unannealed            | 185            | °C     | ASTM D648    |
| CTE, -40°C to 40°C, xflow   6.E-05   1/°C   ASTM E831     Thermal Conductivity@25 °C   0.2   W/m-°C   ASTM C177     CTE, -40°C to 40°C, flow   7.E-05   1/°C   ISO 11359-2   | HDT, 1.82 MPa, 3.2mm, unannealed             | 174            | °C     | ASTM D648    |
| Thermal Conductivity@25 °C   0.2   W/m.°C   ASTM C177     CTE, -40°C to 40°C, flow   7.E·05   1/°C   ISO 11359-2   | CTE, -40°C to 40°C, flow                     | 6.E-05         | 1/°C   | ASTM E831    |
| CTE, -40°C to 40°C, flow   7.E-05   1/°C   ISO 11359-2   | CTE, -40°C to 40°C, xflow                    | 6.E-05         | 1/°C   | ASTM E831    |
|  | Thermal Conductivity @ 25 °C                 | 0.2            | W/m-°C | ASTM C177    |
| CTE, -40°C to 40°C, xflow   6.5E-05   1/°C   ISO 11359-2   | CTE, -40°C to 40°C, flow                     | 7.E-05         | 1/°C   | ISO 11359-2  |
|  | CTE, -40°C to 40°C, xflow                    | 6.5E-05        | 1/°C   | ISO 11359-2  |

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## CHEMISTRY THAT MATTERS



| PROPERTIES                                  | TYPICAL VALUES | UNITS             | TEST METHODS   |
|---|----------------|-------------------|----------------|
| Ball Pressure Test, 125°C +/- 2°C           | PASSES         | -                 | IEC 60695-10-2 |
| Ball Pressure Test, 165°C +/- 2°C           | PASSES         | -                 | IEC 60695-10-2 |
| Vicat Softening Temp, Rate B/50             | 190            | °C                | ISO 306        |
| Vicat Softening Temp, Rate B/120            | 190            | °C                | ISO 306        |
| HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm      | 183            | °C                | ISO 75/Bf      |
| HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm       | 170            | °C                | ISO 75/Af      |
| Metallized Haze Onset                       | 180            | °C                | SABIC method   |
| PHYSICAL <sup>(1)</sup>                     |                |                   |                |
| Specific Gravity                            | 1.2            |                   | ASTM D792      |
| Mold Shrinkage, flow, 3.2 mm <sup>(2)</sup> | 0.6 – 0.95     | %                 | SABIC method   |
| Melt Flow Rate, 330°C/2.16 kgf              | 16             | g/10 min          | ASTM D1238     |
| Density                                     | 1.2            | g/cm <sup>3</sup> | ISO 1183       |
| Water Absorption, (23°C/saturated)          | 0.5            | %                 | ISO 62-1       |
| Moisture Absorption (23°C / 50% RH)         | 0.25           | %                 | ISO 62         |
| Melt Volume Rate, MVR at 330°C/2.16kg       | 15             | cm³/10 min        | ISO 1133       |
| INJECTION MOLDING (3)                       |                |                   |                |
| Drying Temperature                          | 135            | °C                |                |
| Drying Time                                 | 4 – 6          | Hrs               |                |
| Drying Time (Cumulative)                    | 48             | Hrs               |                |
| Maximum Moisture Content                    | 0.02           | %                 |                |
| Melt Temperature                            | 320 – 345      | °C                |                |
| Nozzle Temperature                          | 315 – 340      | °C                |                |
| Front - Zone 3 Temperature                  | 320 – 345      | °C                |                |
| Middle - Zone 2 Temperature                 | 310 – 335      | °C                |                |
| Rear - Zone 1 Temperature                   | 300 - 325      | °C                |                |
| Mold Temperature                            | 110 – 140      | °C                |                |
| Back Pressure                               | 0.3 – 0.7      | MPa               |                |
| Screw Speed                                 | 40 – 70        | rpm               |                |
| Shot to Cylinder Size                       | 40 - 60        | %                 |                |
| Vent Depth                                  | 0.025 - 0.08   | mm                |                |

(1) The information stated on Technical Datasheets should be used as indicative only for material selection purposes and not be utilized as specification or used for part or tool design.

(2) Measurements made from laboratory test coupon. Actual shrinkage may vary outside of range due to differences in processing conditions, equipment, part geometry and tool design. It is recommended that mold shrinkage studies be performed with surrogate or legacy tooling prior to cutting tools for new molded article. The information stated on Technical Datasheets should be used as indicative only for material selection purposes and not be utilized as specification or used for part or tool design.

(3) Injection Molding parameters are only mentioned as general guidelines. These may not apply or may need adjustment in specific situations such as low shot sizes, large part molding, thin wall molding and gas-assist molding.

#### ADDITIONAL PRODUCT NOTES

No PFAS intentionally added: The grade listed in this document does not contain PFAS intentionally added during Seller's manufacturing process and is not expected to contain unintentional PFAS impurities. Each user is responsible for evaluating the presence of unintentional PFAS impurities.



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