

# XYLEX™ RESIN HX8300HP

REGION AMERICAS

## DESCRIPTION

Medium flow, Transparent PC/Polyester alloy. For medical devices and pharmaceutical applications. Healthcare management of change, biocompatible (ISO 10993 or USP Class VI), food contact compliant. EtO sterilizable.

## TYPICAL PROPERTY VALUES

Revision 20170913

| PROPERTIES                                   | TYPICAL VALUES | UNITS             | TEST METHODS |
|--|----------------|-------------------|--------------|
| <b>MECHANICAL</b>                            |                |                   |              |
| Tensile Stress, yld, Type I, 50 mm/min       | 47             | MPa               | ASTM D 638   |
| Tensile Stress, brk, Type I, 50 mm/min       | 46             | MPa               | ASTM D 638   |
| Tensile Strain, yld, Type I, 50 mm/min       | 5              | %                 | ASTM D 638   |
| Tensile Strain, brk, Type I, 50 mm/min       | 150            | %                 | ASTM D 638   |
| Tensile Modulus, 50 mm/min                   | 1520           | MPa               | ASTM D 638   |
| Flexural Stress, yld, 1.3 mm/min, 50 mm span | 71             | MPa               | ASTM D 790   |
| Flexural Modulus, 1.3 mm/min, 50 mm span     | 1680           | MPa               | ASTM D 790   |
| Hardness, Shore D, 10S reading               | 73             | -                 | ASTM D 2240  |
| Tensile Stress, yield, 50 mm/min             | 55             | MPa               | ISO 527      |
| Tensile Stress, break, 50 mm/min             | 54             | MPa               | ISO 527      |
| Tensile Strain, yield, 50 mm/min             | 5              | %                 | ISO 527      |
| Tensile Strain, break, 50 mm/min             | >200           | %                 | ISO 527      |
| Tensile Modulus, 1 mm/min                    | 1600           | MPa               | ISO 527      |
| Flexural Stress, break, 2 mm/min             | 78             | MPa               | ISO 178      |
| Flexural Modulus, 2 mm/min                   | 1700           | MPa               | ISO 178      |
| <b>IMPACT</b>                                |                |                   |              |
| Izod Impact, notched, 23°C                   | 1120           | J/m               | ASTM D 256   |
| Izod Impact, notched, -30°C                  | 5              | J/m               | ASTM D 256   |
| Instrumented Impact Total Energy, 23°C       | 95             | J                 | ASTM D 3763  |
| Izod Impact, notched 80*10*4 +23°C           | 8              | kJ/m <sup>2</sup> | ISO 180/1A   |
| Izod Impact, notched 80*10*4 -10°C           | 5              | kJ/m <sup>2</sup> | ISO 180/1A   |
| Izod Impact, notched 80*10*4 -30°C           | <1             | kJ/m <sup>2</sup> | ISO 180/1A   |
| Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm   | 70             | kJ/m <sup>2</sup> | ISO 179/1eA  |
| <b>THERMAL</b>                               |                |                   |              |
| Vicat Softening Temp, Rate B/50              | 96             | °C                | ASTM D 1525  |
| HDT, 0.45 MPa, 3.2 mm, unannealed            | 79             | °C                | ASTM D 648   |
| HDT, 1.82 MPa, 3.2mm, unannealed             | 75             | °C                | ASTM D 648   |

| PROPERTIES                                    | TYPICAL VALUES | UNITS                   | TEST METHODS   |
|---|----------------|-------------------------|----------------|
| CTE, -40°C to 40°C, flow                      | 1.05E-04       | 1/°C                    | ASTM E 831     |
| CTE, -40°C to 40°C, xflow                     | 1.05E-04       | 1/°C                    | ASTM E 831     |
| Thermal Conductivity                          | 0.23           | W/m-°C                  | ISO 8302       |
| CTE, -40°C to 40°C, flow                      | 1.05E-04       | 1/°C                    | ISO 11359-2    |
| CTE, -40°C to 40°C, xflow                     | 1.05E-04       | 1/°C                    | ISO 11359-2    |
| CTE, 23°C to 60°C, flow                       | 9.E-05         | 1/°C                    | ISO 11359-2    |
| CTE, 23°C to 60°C, xflow                      | 9.E-05         | 1/°C                    | ISO 11359-2    |
| Ball Pressure Test, approximate maximum       | 85             | °C                      | IEC 60695-10-2 |
| Vicat Softening Temp, Rate B/50               | 92             | °C                      | ISO 306        |
| Vicat Softening Temp, Rate B/120              | 96             | °C                      | ISO 306        |
| HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm       | 80             | °C                      | ISO 75/Ae      |
| <b>PHYSICAL</b>                               |                |                         |                |
| Specific Gravity                              | 1.2            | -                       | ASTM D 792     |
| Mold Shrinkage, flow, 3.2 mm (5)              | 0.5 – 0.8      | %                       | SABIC method   |
| Mold Shrinkage, xflow, 3.2 mm (5)             | 0.4 – 0.6      | %                       | SABIC method   |
| Melt Flow Rate, 265°C/2.16kgf                 | 15             | g/10 min                | ASTM D 1238    |
| Density                                       | 1.17           | g/cm <sup>3</sup>       | ISO 1183       |
| Water Absorption, (23°C/sat)                  | 0.49           | %                       | ISO 62         |
| Moisture Absorption (23°C / 50% RH)           | 0.15           | %                       | ISO 62         |
| Melt Volume Rate, MVR at 265°C/2.16 kg        | 15             | cm <sup>3</sup> /10 min | ISO 1133       |
| <b>OPTICAL</b>                                |                |                         |                |
| Light Transmission, 2.54 mm                   | 88             | %                       | ASTM D 1003    |
| Haze, 2.54 mm                                 | <2             | %                       | ASTM D 1003    |
| Refractive Index                              | 1.539          | -                       | ISO 489        |
| <b>ELECTRICAL</b>                             |                |                         |                |
| Volume Resistivity                            | >1.E+15        | Ohm-cm                  | ASTM D 257     |
| Surface Resistivity                           | >1.E+15        | Ohm                     | ASTM D 257     |
| Comparative Tracking Index (UL) {PLC}         | 0              | PLC Code                | UL 746A        |
| <b>FLAME CHARACTERISTICS</b>                  |                |                         |                |
| Glow Wire Flammability Index 750°C, passes at | 1              | mm                      | IEC 60695-2-12 |
| <b>INJECTION MOLDING</b>                      |                |                         |                |
| Drying Temperature                            | 65 – 75        | °C                      |                |
| Drying Time                                   | 3 – 5          | hrs                     |                |
| Drying Time (Cumulative)                      | 8              | hrs                     |                |
| Maximum Moisture Content                      | 0.02           | %                       |                |
| Melt Temperature                              | 245 – 265      | °C                      |                |
| Nozzle Temperature                            | 245 – 265      | °C                      |                |
| Front - Zone 3 Temperature                    | 245 – 265      | °C                      |                |

| PROPERTIES                  | TYPICAL VALUES | UNITS | TEST METHODS |
|-----------------------------|----------------|-------|--------------|
| Middle - Zone 2 Temperature | 240 – 260      | °C    |              |
| Rear - Zone 1 Temperature   | 240 – 250      | °C    |              |
| Mold Temperature            | 45 – 60        | °C    |              |
| Back Pressure               | 0.2 – 0.5      | MPa   |              |
| Screw Speed                 | 20 – 100       | rpm   |              |
| Shot to Cylinder Size       | 40 – 80        | %     |              |
| Vent Depth                  | 0.013 – 0.02   | mm    |              |

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