

# XENOY™ RESIN X4820

REGION AMERICAS

## DESCRIPTION

XENOY X4820 is a 7.5% mineral filled PC/PBT blend with low CTE, high modulus, high ductile PC/PBT blend. XENOY X4820 provides high chemical resistance, excellent impact, very low creep, excellent fatigue and dimensional stability. XENOY X4820 could be positioned for body panels, window rails, door panels, power tool housings, door handles, medical device enclosures, EV electric vehicle components.

## TYPICAL PROPERTY VALUES

| PROPERTIES                                   | TYPICAL VALUES | UNITS             | TEST METHODS |
|----------------------------------------------|----------------|-------------------|--------------|
| <b>MECHANICAL</b>                            |                |                   |              |
| Tensile Stress, yld, Type I, 50 mm/min       | 57             | MPa               | ASTM D638    |
| Tensile Stress, brk, Type I, 50 mm/min       | 58             | MPa               | ASTM D638    |
| Tensile Strain, yld, Type I, 50 mm/min       | 4.2            | %                 | ASTM D638    |
| Tensile Strain, brk, Type I, 50 mm/min       | 140            | %                 | ASTM D638    |
| Tensile Modulus, 50 mm/min                   | 3200           | MPa               | ASTM D638    |
| Flexural Stress, yld, 1.3 mm/min, 50 mm span | 91             | MPa               | ASTM D790    |
| Flexural Modulus, 1.3 mm/min, 50 mm span     | 2900           | MPa               | ASTM D790    |
| Tensile Stress, yield, 50 mm/min             | 58             | MPa               | ISO 527      |
| Tensile Stress, break, 50 mm/min             | 52             | MPa               | ISO 527      |
| Tensile Strain, yield, 50 mm/min             | 4.2            | %                 | ISO 527      |
| Tensile Strain, break, 50 mm/min             | 100            | %                 | ISO 527      |
| Tensile Modulus, 1 mm/min                    | 3000           | MPa               | ISO 527      |
| Flexural Stress, yield, 2 mm/min             | 87             | MPa               | ISO 178      |
| Flexural Modulus, 2 mm/min                   | 2850           | MPa               | ISO 178      |
| <b>IMPACT</b>                                |                |                   |              |
| Izod Impact, notched, 23°C                   | 700            | J/m               | ASTM D256    |
| Izod Impact, notched, -30°C                  | 150            | J/m               | ASTM D256    |
| Instrumented Dart Impact Total Energy, 23°C  | 60             | J                 | ASTM D3763   |
| Izod Impact, notched 80*10*4 +23°C           | 55             | kJ/m <sup>2</sup> | ISO 180/1A   |
| Izod Impact, notched 80*10*4 -30°C           | 15             | kJ/m <sup>2</sup> | ISO 180/1A   |
| Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm   | 60             | kJ/m <sup>2</sup> | ISO 179/1eA  |
| <b>THERMAL</b>                               |                |                   |              |
| Vicat Softening Temp, Rate B/50              | 130            | °C                | ASTM D1525   |
| HDT, 1.82 MPa, 3.2mm, unannealed             | 98             | °C                | ASTM D648    |
| CTE, -40°C to 40°C, flow                     | 7.5E-05        | 1/°C              | ASTM E831    |
| CTE, -40°C to 40°C, xflow                    | 1.1E-04        | 1/°C              | ASTM E831    |
| CTE, -40°C to 40°C, flow                     | 7.5E-05        | 1/°C              | ISO 11359-2  |
| CTE, -40°C to 40°C, xflow                    | 1.1E-04        | 1/°C              | ISO 11359-2  |
| Vicat Softening Temp, Rate B/50              | 132            | °C                | ISO 306      |
| Vicat Softening Temp, Rate B/120             | 134            | °C                | ISO 306      |
| HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm        | 94             | °C                | ISO 75/Af    |
| <b>PHYSICAL</b>                              |                |                   |              |
| Specific Gravity                             | 1.25           | -                 | ASTM D792    |
| Mold Shrinkage, flow, 3.2 mm                 | 0.95 – 1.1     | %                 | SABIC method |

| PROPERTIES                            | TYPICAL VALUES                    | UNITS      | TEST METHODS |
|---------------------------------------|-----------------------------------|------------|--------------|
| Melt Flow Rate, 250°C/5.0 kgf         | 10                                | g/10 min   | ASTM D1238   |
| Density                               | 1.26                              | g/cm³      | ISO 1183     |
| Water Absorption, (23°C/saturated)    | 0.42                              | %          | ISO 62-1     |
| Moisture Absorption (23°C / 50% RH)   | 0.14                              | %          | ISO 62       |
| Melt Volume Rate, MVR at 265°C/5.0 kg | 12                                | cm³/10 min | ISO 1133     |
| FLAME CHARACTERISTICS                 |                                   |            |              |
| UL Yellow Card Link                   | <a href="#">E121562-100130014</a> | -          | -            |
| UL Yellow Card Link 2                 | <a href="#">E121562-624505</a>    | -          | -            |
| INJECTION MOLDING                     |                                   |            |              |
| Drying Temperature                    | 110                               | °C         |              |
| Drying Time                           | 4 – 6                             | Hrs        |              |
| Drying Time (Cumulative)              | 8                                 | Hrs        |              |
| Maximum Moisture Content              | 0.02                              | %          |              |
| Melt Temperature                      | 255 – 275                         | °C         |              |
| Nozzle Temperature                    | 250 – 265                         | °C         |              |
| Front - Zone 3 Temperature            | 250 – 270                         | °C         |              |
| Middle - Zone 2 Temperature           | 245 – 265                         | °C         |              |
| Rear - Zone 1 Temperature             | 240 – 260                         | °C         |              |
| Mold Temperature                      | 40 – 90                           | °C         |              |
| Back Pressure                         | 0.3 – 0.7                         | MPa        |              |
| Screw Speed                           | 40 – 80                           | rpm        |              |
| Shot to Cylinder Size                 | 50 – 80                           | %          |              |
| Vent Depth                            | 0.013 – 0.02                      | mm         |              |