

# XENOV<sup>TM</sup> RESIN 5720U

REGION AMERICAS

## DESCRIPTION

Unfilled PBT+PC alloy. Outstanding low temperature impact/chemical resistance. UV stabilized version of XENOV

## TYPICAL PROPERTY VALUES

| PROPERTIES                                   | TYPICAL VALUES | UNITS | TEST METHODS         |
|----------------------------------------------|----------------|-------|----------------------|
| MECHANICAL                                   |                |       |                      |
| Tensile Stress, yld, Type I, 50 mm/min       | 47             | MPa   | ASTM D 638           |
| Tensile Stress, brk, Type I, 50 mm/min       | 48             | MPa   | ASTM D 638           |
| Tensile Stress, yld, Type I, 5 mm/min        | 44             | MPa   | ASTM D 638           |
| Tensile Stress, brk, Type I, 5 mm/min        | 50             | MPa   | ASTM D 638           |
| Tensile Stress, yld, Type I, 10 mm/min       | 45             | MPa   | SABIC - Japan Method |
| Tensile Stress, brk, Type I, 10 mm/min       | 47             | MPa   | SABIC - Japan Method |
| Tensile Strain, yld, Type I, 50 mm/min       | 4              | %     | ASTM D 638           |
| Tensile Strain, brk, Type I, 50 mm/min       | 116.6          | %     | ASTM D 638           |
| Tensile Strain, yld, Type I, 5 mm/min        | 4.6            | %     | ASTM D 638           |
| Tensile Strain, brk, Type I, 5 mm/min        | 122.4          | %     | ASTM D 638           |
| Tensile Strain, yld, Type I, 10 mm/min       | 4.6            | %     | SABIC - Japan Method |
| Tensile Strain, brk, Type I, 10 mm/min       | 109.5          | %     | SABIC - Japan Method |
| Tensile Modulus, 50 mm/min                   | 1810           | MPa   | ASTM D 638           |
| Tensile Modulus, 5 mm/min                    | 1830           | MPa   | ASTM D 638           |
| Tensile Modulus, 10 mm/min                   | 1830           | MPa   | SABIC - Japan Method |
| Flexural Stress, yld, 1.3 mm/min, 50 mm span | 70             | MPa   | ASTM D 790           |
| Flexural Stress, brk, 1.3 mm/min, 50 mm span | 69             | MPa   | ASTM D 790           |
| Flexural Modulus, 1.3 mm/min, 50 mm span     | 1660           | MPa   | ASTM D 790           |
| Tensile Stress, yield, 5 mm/min              | 44             | MPa   | ISO 527              |
| Tensile Stress, break, 5 mm/min              | 43             | MPa   | ISO 527              |
| Tensile Stress, yield, 50 mm/min             | 47             | MPa   | ISO 527              |
| Tensile Stress, break, 50 mm/min             | 43             | MPa   | ISO 527              |
| Tensile Strain, yield, 5 mm/min              | 4.1            | %     | ISO 527              |
| Tensile Strain, break, 5 mm/min              | 106.8          | %     | ISO 527              |
| Tensile Strain, yield, 50 mm/min             | 4.6            | %     | ISO 527              |
| Tensile Strain, break, 50 mm/min             | 115.3          | %     | ISO 527              |
| Tensile Modulus, 1 mm/min                    | 1790           | MPa   | ISO 527              |
| Flexural Stress, yield, 2 mm/min             | 71             | MPa   | ISO 178              |
| Flexural Modulus, 2 mm/min                   | 1860           | MPa   | ISO 178              |
| IMPACT                                       |                |       |                      |
| Izod Impact, notched, 23°C                   | 722            | J/m   | ASTM D 256           |
| Izod Impact, notched, 0°C                    | 691            | J/m   | ASTM D 256           |
| Izod Impact, notched, -10°C                  | 663            | J/m   | ASTM D 256           |
| Izod Impact, notched, -20°C                  | 695            | J/m   | ASTM D 256           |
| Izod Impact, notched, -30°C                  | 647            | J/m   | ASTM D 256           |

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| PROPERTIES                                  | TYPICAL VALUES | UNITS                   | TEST METHODS |
|---------------------------------------------|----------------|-------------------------|--------------|
| Izod Impact, notched, -40°C                 | 598            | J/m                     | ASTM D 256   |
| Instrumented Impact Energy @ peak, 23°C     | 44             | J                       | ASTM D 3763  |
| Instrumented Impact, Energy @ peak, -20°C   | 41             | J                       | ASTM D 3763  |
| Instrumented Impact Energy @ peak, -30      | 49             | J                       | ASTM D 3763  |
| Instrumented Impact Energy @ peak, -40°C    | 49             | J                       | ASTM D 3763  |
| Instrumented Impact Total Energy, 23°C      | 54             | J                       | ASTM D 3763  |
| Instrumented Impact Total Energy, -20°C     | 53             | J                       | ASTM D 3763  |
| Instrumented Impact Total Energy, -30°C     | 61             | J                       | ASTM D 3763  |
| Instrumented Impact Total Energy, -40°C     | 59             | J                       | ASTM D 3763  |
| Izod Impact, notched 80*10*4 +23°C          | 55             | kJ/m <sup>2</sup>       | ISO 180/1A   |
| Izod Impact, notched 80*10*4 0°C            | 55             | kJ/m <sup>2</sup>       | ISO 180/1A   |
| Izod Impact, notched 80*10*4 -10°C          | 52             | kJ/m <sup>2</sup>       | ISO 180/1A   |
| Izod Impact, notched 80*10*4 -20°C          | 50             | kJ/m <sup>2</sup>       | ISO 180/1A   |
| Izod Impact, notched 80*10*4 -30°C          | 48             | kJ/m <sup>2</sup>       | ISO 180/1A   |
| Izod Impact, notched 80*10*4 -40°C          | 46             | kJ/m <sup>2</sup>       | ISO 180/1A   |
| Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm  | 55             | kJ/m <sup>2</sup>       | ISO 179/1eA  |
| Charpy -30°C, V-notch Edgew 80*10*4 sp=62mm | 47             | kJ/m <sup>2</sup>       | ISO 179/1eA  |
| THERMAL                                     |                |                         |              |
| Vicat Softening Temp, Rate B/50             | 119            | °C                      | ASTM D 1525  |
| HDT, 0.45 MPa, 3.2 mm, unannealed           | 108            | °C                      | ASTM D 648   |
| HDT, 1.82 MPa, 3.2mm, unannealed            | 83             | °C                      | ASTM D 648   |
| HDT, 0.45 MPa, 6.4 mm, unannealed           | 117            | °C                      | ASTM D 648   |
| HDT, 1.82 MPa, 6.4 mm, unannealed           | 95             | °C                      | ASTM D 648   |
| CTE, -40°C to 95°C, flow                    | 9.75E-05       | 1/°C                    | ASTM E 831   |
| CTE, -40°C to 95°C, xflow                   | 1.E-04         | 1/°C                    | ASTM E 831   |
| CTE, -30°C to 80°C, flow                    | 9.75E-05       | 1/°C                    | ISO 11359-2  |
| CTE, -30°C to 80°C, xflow                   | 1.E-04         | 1/°C                    | ISO 11359-2  |
| Vicat Softening Temp, Rate B/50             | 119            | °C                      | ISO 306      |
| Vicat Softening Temp, Rate B/120            | 122            | °C                      | ISO 306      |
| HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm      | 109            | °C                      | ISO 75/Bf    |
| HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm       | 87             | °C                      | ISO 75/Af    |
| PHYSICAL                                    |                |                         |              |
| Specific Gravity                            | 1.17           | -                       | ASTM D 792   |
| Specific Volume                             | 0.85           | cm <sup>3</sup> /g      | ASTM D 792   |
| Density                                     | 1.17           | g/cm <sup>3</sup>       | ASTM D 792   |
| Mold Shrinkage, flow, 3.2 mm                | 1 – 1.2        | %                       | SABIC method |
| Melt Flow Rate, 250°C/2.16 kgf              | 3.8            | g/10 min                | ASTM D 1238  |
| Melt Flow Rate, 250°C/5.0 kgf               | 11.4           | g/10 min                | ASTM D 1238  |
| Melt Flow Rate, 265°C/2.16kgf               | 6              | g/10 min                | ASTM D 1238  |
| Melt Flow Rate, 266°C/5.0 kgf               | 19.7           | g/10 min                | ASTM D 1238  |
| Density                                     | 1.17           | g/cm <sup>3</sup>       | ISO 1183     |
| Water Absorption, (23°C/sat)                | 0.28           | %                       | ISO 62       |
| Moisture Absorption (23°C / 50% RH)         | 0.08           | %                       | ISO 62       |
| Melt Flow Rate, 250°C/2.16 kg               | 3              | g/10 min                | ISO 1133     |
| Melt Flow Rate, 250°C/5.0 kg                | 11             | g/10 min                | ISO 1133     |
| Melt Volume Rate, MVR at 250°C/2.16 kg      | 3              | cm <sup>3</sup> /10 min | ISO 1133     |

| PROPERTIES                             | TYPICAL VALUES                    | UNITS                   | TEST METHODS |
|----------------------------------------|-----------------------------------|-------------------------|--------------|
| Melt Volume Rate, MVR at 250°C/5.0 kg  | 10                                | cm <sup>3</sup> /10 min | ISO 1133     |
| Melt Volume Rate, MVR at 265°C/2.16 kg | 6                                 | cm <sup>3</sup> /10 min | ISO 1133     |
| Melt Volume Rate, MVR at 265°C/5.0 kg  | 18                                | cm <sup>3</sup> /10 min | ISO 1133     |
| FLAME CHARACTERISTICS                  |                                   |                         |              |
| UL Yellow Card Link                    | <a href="#">E121562-100980304</a> | -                       | -            |
| INJECTION MOLDING                      |                                   |                         |              |
| Drying Temperature                     | 110                               | °C                      |              |
| Drying Time                            | 4 – 6                             | hrs                     |              |
| Drying Time (Cumulative)               | 8                                 | hrs                     |              |
| Maximum Moisture Content               | 0.02                              | %                       |              |
| Melt Temperature                       | 260 – 275                         | °C                      |              |
| Nozzle Temperature                     | 255 – 270                         | °C                      |              |
| Front - Zone 3 Temperature             | 255 – 275                         | °C                      |              |
| Middle - Zone 2 Temperature            | 250 – 270                         | °C                      |              |
| Rear - Zone 1 Temperature              | 245 – 265                         | °C                      |              |
| Mold Temperature                       | 65 – 90                           | °C                      |              |
| Back Pressure                          | 0.3 – 0.7                         | MPa                     |              |
| Screw Speed                            | 50 – 80                           | rpm                     |              |
| Shot to Cylinder Size                  | 50 – 80                           | %                       |              |
| Vent Depth                             | 0.013 – 0.02                      | mm                      |              |

