

# XENOY™ RESIN 5220U

REGION AMERICAS

## DESCRIPTION

Unreinforced PBT+PC Alloy. Impact Modified. Improved retention of mechanical properties under UV exposure. Excellent low temperature impact and chemical resistance.

## TYPICAL PROPERTY VALUES

| PROPERTIES                                   | TYPICAL VALUES | UNITS | TEST METHODS |
|----------------------------------------------|----------------|-------|--------------|
| <b>MECHANICAL</b>                            |                |       |              |
| Tensile Stress, yld, Type I, 50 mm/min       | 53             | MPa   | ASTM D638    |
| Tensile Stress, brk, Type I, 50 mm/min       | 51             | MPa   | ASTM D638    |
| Tensile Strain, yld, Type I, 50 mm/min       | 4              | %     | ASTM D638    |
| Tensile Strain, brk, Type I, 50 mm/min       | 120            | %     | ASTM D638    |
| Tensile Modulus, 50 mm/min                   | 2250           | MPa   | ASTM D638    |
| Tensile Modulus, 5 mm/min                    | 2250           | MPa   | ASTM D638    |
| Flexural Stress, yld, 1.3 mm/min, 50 mm span | 84             | MPa   | ASTM D790    |
| Flexural Modulus, 1.3 mm/min, 50 mm span     | 2030           | MPa   | ASTM D790    |
| Tensile Stress, yield, 50 mm/min             | 50             | MPa   | ISO 527      |
| Tensile Stress, break, 50 mm/min             | 50             | MPa   | ISO 527      |
| Tensile Strain, yield, 50 mm/min             | 4              | %     | ISO 527      |
| Tensile Strain, break, 50 mm/min             | 120            | %     | ISO 527      |
| Tensile Modulus, 1 mm/min                    | 2050           | MPa   | ISO 527      |
| Flexural Stress, yield, 2 mm/min             | 80             | MPa   | ISO 178      |
| Flexural Modulus, 2 mm/min                   | 2000           | MPa   | ISO 178      |
| <b>IMPACT</b>                                |                |       |              |
| Izod Impact, notched, 23°C                   | 710            | J/m   | ASTM D256    |
| Izod Impact, notched, -30°C                  | 530            | J/m   | ASTM D256    |
| Izod Impact, notched, -40°C                  | 299            | J/m   | ASTM D256    |
| Instrumented Dart Impact Total Energy, 23°C  | 60             | J     | ASTM D3763   |
| Izod Impact, notched 80*10*4 +23°C           | 50             | kJ/m² | ISO 180/1A   |
| Izod Impact, notched 80*10*4 -30°C           | 30             | kJ/m² | ISO 180/1A   |
| Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm   | 55             | kJ/m² | ISO 179/1eA  |
| <b>THERMAL</b>                               |                |       |              |
| Vicat Softening Temp, Rate B/50              | 122            | °C    | ASTM D1525   |
| HDT, 1.82 MPa, 3.2mm, unannealed             | 84             | °C    | ASTM D648    |
| HDT, 0.45 MPa, 6.4 mm, unannealed            | 107            | °C    | ASTM D648    |
| HDT, 1.82 MPa, 6.4 mm, unannealed            | 99             | °C    | ASTM D648    |
| CTE, -40°C to 40°C, flow                     | 9.5E-05        | 1/°C  | ASTM E831    |
| CTE, -40°C to 40°C, xflow                    | 9.E-05         | 1/°C  | ASTM E831    |
| CTE, -40°C to 40°C, flow                     | 9.5E-05        | 1/°C  | ISO 11359-2  |
| CTE, -40°C to 40°C, xflow                    | 9.E-05         | 1/°C  | ISO 11359-2  |
| Vicat Softening Temp, Rate B/50              | 120            | °C    | ISO 306      |
| Vicat Softening Temp, Rate B/120             | 125            | °C    | ISO 306      |

| PROPERTIES                             | TYPICAL VALUES                 | UNITS      | TEST METHODS |
|----------------------------------------|--------------------------------|------------|--------------|
| HDT /Af, 1.8 MPa Flatw 80*10*4 sp=64mm | 75                             | °C         | ISO 75 /Af   |
| Relative Temp Index, Elec              | 75                             | °C         | UL 746B      |
| Relative Temp Index, Mech w/impact     | 75                             | °C         | UL 746B      |
| Relative Temp Index, Mech w/o impact   | 75                             | °C         | UL 746B      |
| PHYSICAL                               |                                |            |              |
| Specific Gravity                       | 1.21                           | -          | ASTM D792    |
| Specific Volume                        | 0.83                           | cm³/g      | ASTM D792    |
| Mold Shrinkage, flow, 3.2 mm           | 0.8 – 1                        | %          | SABIC method |
| Mold Shrinkage on Tensile Bar, xflow   | 0.8 – 1.1                      | %          | SABIC method |
| Density                                | 1.22                           | g/cm³      | ISO 1183     |
| Water Absorption, (23°C /saturated)    | 0.5                            | %          | ISO 62-1     |
| Moisture Absorption (23°C / 50% RH)    | 0.15                           | %          | ISO 62       |
| Melt Flow Rate, 250°C/5.0 kg           | 16                             | g/10 min   | ISO 1133     |
| Melt Volume Rate, MVR at 250°C/5.0 kg  | 15                             | cm³/10 min | ISO 1133     |
| ELECTRICAL                             |                                |            |              |
| Arc Resistance, Tungsten {PLC}         | 5                              | PLC Code   | ASTM D495    |
| Hot Wire Ignition {PLC}                | 3                              | PLC Code   | UL 746A      |
| High Voltage Arc Track Rate {PLC}      | 0                              | PLC Code   | UL 746A      |
| High Ampere Arc Ign, surface {PLC}     | 0                              | PLC Code   | UL 746A      |
| Comparative Tracking Index (UL) {PLC}  | 1                              | PLC Code   | UL 746A      |
| FLAME CHARACTERISTICS                  |                                |            |              |
| UL Yellow Card Link                    | <a href="#">E121562-220838</a> | -          | -            |
| UL Recognized, 94HB Flame Class Rating | 1.5                            | mm         | UL 94        |
| UV-light, water exposure /immersion    | F2                             | -          | UL 746C      |
| 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         |              |
| SHEET EXTRUSION                        |                                |            |              |
| Drying Temperature                     | 110 – 115                      | °C         |              |
| Drying Time                            | 4 – 6                          | Hrs        |              |
| Drying Time (Cumulative)               | 8                              | Hrs        |              |
| Maximum Moisture Content               | 0 – 0.02                       | %          |              |
| Melt Temperature                       | 245 – 275                      | °C         |              |

| PROPERTIES                  | TYPICAL VALUES | UNITS | TEST METHODS |
|-----------------------------|----------------|-------|--------------|
| Barrel - Zone 1 Temperature | 170 – 205      | °C    |              |
| Barrel - Zone 2 Temperature | 195 – 255      | °C    |              |
| Barrel - Zone 3 Temperature | 205 – 280      | °C    |              |
| Barrel - Zone 4 Temperature | 205 – 280      | °C    |              |
| Adapter Temperature         | 225 – 280      | °C    |              |
| Die Temperature             | 230 – 280      | °C    |              |
| Roll Stack Temp - Top       | 70 – 80        | °C    |              |
| Roll Stack Temp - Middle    | 75 – 80        | °C    |              |
| Roll Stack Temp - Bottom    | 80 – 95        | °C    |              |