

# CYCOLOY™ RESIN XCY620

REGION ASIA

## DESCRIPTION

PC/ABS, hydrolytically stable, colors.

## TYPICAL PROPERTY VALUES

Revision 20170913

| PROPERTIES                                   | TYPICAL VALUES | UNITS             | TEST METHODS |
|--|----------------|-------------------|--------------|
| <b>MECHANICAL</b>                            |                |                   |              |
| Tensile Stress, yld, Type I, 50 mm/min       | 55             | MPa               | ASTM D 638   |
| Tensile Stress, brk, Type I, 50 mm/min       | 52             | MPa               | ASTM D 638   |
| Tensile Strain, yld, Type I, 50 mm/min       | 4.7            | %                 | ASTM D 638   |
| Tensile Strain, brk, Type I, 50 mm/min       | 115            | %                 | ASTM D 638   |
| Tensile Modulus, 5 mm/min                    | 2300           | MPa               | ASTM D 638   |
| Flexural Stress, yld, 1.3 mm/min, 50 mm span | 89             | MPa               | ASTM D 790   |
| Flexural Modulus, 1.3 mm/min, 50 mm span     | 2300           | MPa               | ASTM D 790   |
| Tensile Stress, yield, 50 mm/min             | 54             | MPa               | ISO 527      |
| Tensile Stress, break, 50 mm/min             | 51             | MPa               | ISO 527      |
| Tensile Strain, yield, 50 mm/min             | 4.5            | %                 | ISO 527      |
| Tensile Strain, break, 50 mm/min             | 115            | %                 | ISO 527      |
| Tensile Modulus, 1 mm/min                    | 2200           | MPa               | ISO 527      |
| Flexural Stress, yield, 2 mm/min             | 83             | MPa               | ISO 178      |
| Flexural Modulus, 2 mm/min                   | 2200           | MPa               | ISO 178      |
| <b>IMPACT</b>                                |                |                   |              |
| Izod Impact, notched, 23°C                   | 640            | J/m               | ASTM D 256   |
| Izod Impact, notched, -30°C                  | 480            | J/m               | ASTM D 256   |
| Instrumented Impact Total Energy, 23°C       | 56             | J                 | ASTM D 3763  |
| Instrumented Impact Total Energy, -30°C      | 70             | J                 | ASTM D 3763  |
| Izod Impact, notched 80*10*3 +23°C           | 70             | kJ/m <sup>2</sup> | ISO 180/1A   |
| Izod Impact, notched 80*10*3 -30°C           | 45             | kJ/m <sup>2</sup> | ISO 180/1A   |
| 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           | 45             | kJ/m <sup>2</sup> | ISO 180/1A   |
| Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm   | 70             | kJ/m <sup>2</sup> | ISO 179/1eA  |
| Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm  | 45             | kJ/m <sup>2</sup> | ISO 179/1eA  |
| Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm   | 60             | kJ/m <sup>2</sup> | ISO 179/1eA  |
| Charpy -30°C, V-notch Edgew 80*10*4 sp=62mm  | 45             | kJ/m <sup>2</sup> | ISO 179/1eA  |

| PROPERTIES                             | TYPICAL VALUES | UNITS                   | TEST METHODS   |
|--|----------------|-------------------------|----------------|
| <b>THERMAL</b>                         |                |                         |                |
| Vicat Softening Temp, Rate B/50        | 127            | °C                      | ASTM D 1525    |
| HDT, 1.82 MPa, 3.2mm, unannealed       | 107            | °C                      | ASTM D 648     |
| CTE, -40°C to 40°C, flow               | 7.E-05         | 1/°C                    | ASTM E 831     |
| CTE, -40°C to 40°C, xflow              | 7.E-05         | 1/°C                    | ASTM E 831     |
| Thermal Conductivity                   | 0.2            | W/m-°C                  | ISO 8302       |
| CTE, -40°C to 40°C, flow               | 7.E-05         | 1/°C                    | ISO 11359-2    |
| CTE, -40°C to 40°C, xflow              | 7.E-05         | 1/°C                    | ISO 11359-2    |
| Ball Pressure Test, 75°C +/- 2°C       | Pass           | -                       | IEC 60695-10-2 |
| Vicat Softening Temp, Rate B/50        | 127            | °C                      | ISO 306        |
| Vicat Softening Temp, Rate B/120       | 129            | °C                      | ISO 306        |
| HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm | 126            | °C                      | ISO 75/Bf      |
| HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm  | 105            | °C                      | ISO 75/Af      |
| <b>PHYSICAL</b>                        |                |                         |                |
| Specific Gravity                       | 1.14           | -                       | ASTM D 792     |
| Mold Shrinkage, flow, 3.2 mm (5)       | 0.5 – 0.7      | %                       | SABIC method   |
| Mold Shrinkage, xflow, 3.2 mm (5)      | 0.5 – 0.7      | %                       | SABIC method   |
| Melt Flow Rate, 260°C/5.0 kgf          | 22             | g/10 min                | ASTM D 1238    |
| Density                                | 1.14           | g/cm <sup>3</sup>       | ISO 1183       |
| Water Absorption, (23°C/sat)           | 0.4            | %                       | ISO 62         |
| Moisture Absorption (23°C / 50% RH)    | 0.15           | %                       | ISO 62         |
| Melt Volume Rate, MVR at 260°C/5.0 kg  | 18             | cm <sup>3</sup> /10 min | ISO 1133       |
| Melt Viscosity, 260°C, 1500 sec-1      | 195            | Pa-s                    | ISO 11443      |
| <b>ELECTRICAL</b>                      |                |                         |                |
| Volume Resistivity                     | >1.E+15        | Ohm-cm                  | IEC 60093      |
| Surface Resistivity, ROA               | >1.E+15        | Ohm                     | IEC 60093      |
| Dielectric Strength, in oil, 0.8 mm    | 35             | kV/mm                   | IEC 60243-1    |
| Dielectric Strength, in oil, 1.6 mm    | 25             | kV/mm                   | IEC 60243-1    |
| Dielectric Strength, in oil, 3.2 mm    | 17             | kV/mm                   | IEC 60243-1    |
| <b>INJECTION MOLDING</b>               |                |                         |                |
| Drying Temperature                     | 95 – 105       | °C                      |                |
| Drying Time                            | 2 – 4          | hrs                     |                |
| Maximum Moisture Content               | 0.02           | %                       |                |
| Melt Temperature                       | 260 – 290      | °C                      |                |
| Nozzle Temperature                     | 240 – 280      | °C                      |                |
| Front - Zone 3 Temperature             | 250 – 290      | °C                      |                |
| Middle - Zone 2 Temperature            | 250 – 290      | °C                      |                |

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|---------------------------|----------------|-------|--------------|
| Rear - Zone 1 Temperature | 230 – 260      | °C    |              |
| Hopper Temperature        | 60 – 80        | °C    |              |
| Mold Temperature          | 60 – 90        | °C    |              |

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