



## CYCOLOY™ Resin XCM851

### Americas: COMMERCIAL

High heat PC/ABS blend offering high modulus / low CTE and good practical impact

| TYPICAL PROPERTIES <sup>1</sup>              | TYPICAL VALUE | Unit                | Standard    |
|----------------------------------------------|---------------|---------------------|-------------|
| <b>MECHANICAL</b>                            |               |                     |             |
| Tensile Stress, yld, Type I, 5 mm/min        | 610           | kgf/cm <sup>2</sup> | ASTM D 638  |
| Tensile Stress, brk, Type I, 5 mm/min        | 350           | kgf/cm <sup>2</sup> | ASTM D 638  |
| Tensile Strain, yld, Type I, 5 mm/min        | 4             | %                   | ASTM D 638  |
| Tensile Strain, brk, Type I, 5 mm/min        | 12            | %                   | ASTM D 638  |
| Tensile Modulus, 5 mm/min                    | 48400         | kgf/cm <sup>2</sup> | ASTM D 638  |
| Flexural Stress, yld, 1.3 mm/min, 50 mm span | 1100          | kgf/cm <sup>2</sup> | ASTM D 790  |
| Flexural Modulus, 1.3 mm/min, 50 mm span     | 46300         | kgf/cm <sup>2</sup> | ASTM D 790  |
| Tensile Stress, yield, 5 mm/min              | 55            | MPa                 | ISO 527     |
| Tensile Stress, break, 5 mm/min              | 45            | MPa                 | ISO 527     |
| Tensile Strain, yield, 5 mm/min              | 4             | %                   | ISO 527     |
| Tensile Strain, break, 5 mm/min              | 10            | %                   | ISO 527     |
| Tensile Modulus, 1 mm/min                    | 4600          | MPa                 | ISO 527     |
| Flexural Stress, yield, 2 mm/min             | 100           | MPa                 | ISO 178     |
| Flexural Modulus, 2 mm/min                   | 4400          | MPa                 | ISO 178     |
| <b>IMPACT</b>                                |               |                     |             |
| Izod Impact, notched, 23°C                   | 10            | cm-kgf/cm           | ASTM D 256  |
| Izod Impact, notched, -30°C                  | 8             | cm-kgf/cm           | ASTM D 256  |
| Instrumented Impact Total Energy, 23°C       | 611           | cm-kgf              | ASTM D 3763 |
| Izod Impact, unnotched 80*10*3 +23°C         | NB            | kJ/m <sup>2</sup>   | ISO 180/1U  |
| Izod Impact, notched 80*10*3 +23°C           | 12            | kJ/m <sup>2</sup>   | ISO 180/1A  |
| Izod Impact, notched 80*10*3 -30°C           | 9             | kJ/m <sup>2</sup>   | ISO 180/1A  |
| Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm   | 15            | kJ/m <sup>2</sup>   | ISO 179/1eA |



## CYCOLOY™ Resin XCM851

### Americas: COMMERCIAL

| TYPICAL PROPERTIES <sup>1</sup>            | TYPICAL VALUE | Unit                    | Standard     |
|--------------------------------------------|---------------|-------------------------|--------------|
| <b>IMPACT</b>                              |               |                         |              |
| Charpy 23°C, Unnotch Edgew 80*10*3 sp=62mm | NB            | kJ/m <sup>2</sup>       | ISO 179/1eU  |
| <b>THERMAL</b>                             |               |                         |              |
| Vicat Softening Temp, Rate B/50            | 138           | °C                      | ASTM D 1525  |
| HDT, 1.82 MPa, 3.2mm, unannealed           | 119           | °C                      | ASTM D 648   |
| CTE, -40°C to 40°C, flow                   | 4.1E-05       | 1/°C                    | ASTM E 831   |
| CTE, -40°C to 40°C, xflow                  | 5.6E-05       | 1/°C                    | ASTM E 831   |
| CTE, -40°C to 40°C, flow                   | 4.1E-05       | 1/°C                    | ISO 11359-2  |
| CTE, -40°C to 40°C, xflow                  | 5.6E-05       | 1/°C                    | ISO 11359-2  |
| Vicat Softening Temp, Rate B/50            | 139           | °C                      | ISO 306      |
| Vicat Softening Temp, Rate B/120           | 140           | °C                      | ISO 306      |
| HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm      | 122           | °C                      | ISO 75/Af    |
| <b>PHYSICAL</b>                            |               |                         |              |
| Specific Gravity                           | 1.3           | -                       | ASTM D 792   |
| Mold Shrinkage, flow, 3.2 mm (5)           | 0.3 - 0.5     | %                       | SABIC Method |
| Melt Flow Rate, 260°C/5.0 kgf              | 12            | g/10 min                | ASTM D 1238  |
| Density                                    | 1.3           | g/cm <sup>3</sup>       | ISO 1183     |
| Water Absorption, (23°C/sat)               | 0.2           | %                       | ISO 62       |
| Moisture Absorption (23°C / 50% RH)        | 0.01          | %                       | ISO 62       |
| Melt Volume Rate, MVR at 260°C/5.0 kg      | 9             | cm <sup>3</sup> /10 min | ISO 1133     |



## CYCOLOY™ Resin XCM851

### Americas: COMMERCIAL

| PROCESSING PARAMETERS       | TYPICAL VALUE | Unit |
|-----------------------------|---------------|------|
| <b>Injection Molding</b>    |               |      |
| Drying Temperature          | 120 - 110     | °C   |
| Drying Time                 | 2 - 6         | hrs  |
| Maximum Moisture Content    | 0.02          | %    |
| Melt Temperature            | 270 - 300     | °C   |
| Nozzle Temperature          | 260 - 290     | °C   |
| Front - Zone 3 Temperature  | 270 - 300     | °C   |
| Middle - Zone 2 Temperature | 265 - 290     | °C   |
| Rear - Zone 1 Temperature   | 260 - 270     | °C   |
| Mold Temperature            | 60 - 100      | °C   |
| Back Pressure               | 0.3 - 0.7     | MPa  |
| Screw Speed                 | 40 - 70       | rpm  |
| Shot to Cylinder Size       | 30 - 80       | %    |
| Vent Depth                  | 0.038 - 0.076 | mm   |
| <b>Sheet Extrusion</b>      |               |      |
| Drying Temperature          | 120 - 120     | °C   |
| Drying Time                 | 2 - 6         | hrs  |
| Drying Time (Cumulative)    | 8             | hrs  |
| Maximum Moisture Content    | 0.02          | %    |
| Melt Temperature            | 250 - 270     | °C   |
| Barrel - Zone 1 Temperature | 195 - 205     | °C   |
| Barrel - Zone 2 Temperature | 200 - 220     | °C   |
| Barrel - Zone 3 Temperature | 220 - 240     | °C   |
| Barrel - Zone 4 Temperature | 230 - 260     | °C   |
| Adapter Temperature         | 230 - 260     | °C   |
| Die Temperature             | 230 - 245     | °C   |
| Roll Stack Temp - Top       | 100 - 110     | °C   |
| Roll Stack Temp - Middle    | 110 - 120     | °C   |
| Roll Stack Temp - Bottom    | 145 - 155     | °C   |