



## CYCOLOY™ Resin CX7720

### Asia Pacific: COMMERCIAL

Cycloloy resin CX7720 is a non brominated and non chlorinated flame retardant PC/ABS resin grade featuring high heat resistance and thin wall FR. It is UL-94 listed at 1.2 mm V0 and 1.5mm 5VB. Its high heat deflection temperature allows this product to be considered for applications requiring higher heat resistance than conventional FR PC/ABS.

| TYPICAL PROPERTIES <sup>1</sup>              | TYPICAL VALUE | Unit                | Standard    |
|----------------------------------------------|---------------|---------------------|-------------|
| <b>MECHANICAL</b>                            |               |                     |             |
| Tensile Stress, yld, Type I, 50 mm/min       | 660           | kgf/cm <sup>2</sup> | ASTM D 638  |
| Tensile Stress, brk, Type I, 50 mm/min       | 670           | kgf/cm <sup>2</sup> | ASTM D 638  |
| Tensile Strain, yld, Type I, 50 mm/min       | 5             | %                   | ASTM D 638  |
| Tensile Strain, brk, Type I, 50 mm/min       | 126           | %                   | ASTM D 638  |
| Tensile Modulus, 50 mm/min                   | 29100         | kgf/cm <sup>2</sup> | ASTM D 638  |
| Flexural Stress, yld, 1.3 mm/min, 50 mm span | 1000          | kgf/cm <sup>2</sup> | ASTM D 790  |
| Flexural Modulus, 1.3 mm/min, 50 mm span     | 28700         | kgf/cm <sup>2</sup> | ASTM D 790  |
| Tensile Stress, yield, 50 mm/min             | 65            | MPa                 | ISO 527     |
| Tensile Stress, break, 50 mm/min             | 65            | MPa                 | ISO 527     |
| Tensile Strain, yield, 50 mm/min             | 5             | %                   | ISO 527     |
| Tensile Strain, break, 50 mm/min             | 122           | %                   | ISO 527     |
| Tensile Modulus, 1 mm/min                    | 2900          | MPa                 | ISO 527     |
| Flexural Stress, yield, 2 mm/min             | 97            | MPa                 | ISO 178     |
| Flexural Modulus, 2 mm/min                   | 2090          | MPa                 | ISO 178     |
| <b>IMPACT</b>                                |               |                     |             |
| Izod Impact, notched, 23°C                   | 15            | cm-kgf/cm           | ASTM D 256  |
| Izod Impact, notched, -30°C                  | 6             | cm-kgf/cm           | ASTM D 256  |
| Instrumented Impact Total Energy, 23°C       | 637           | cm-kgf              | ASTM D 3763 |
| Izod Impact, notched 80*10*3 +23°C           | 11            | kJ/m <sup>2</sup>   | ISO 180/1A  |
| Izod Impact, notched 80*10*3 -30°C           | 8             | kJ/m <sup>2</sup>   | ISO 180/1A  |
| Izod Impact, notched 80*10*4 +23°C           | 8             | kJ/m <sup>2</sup>   | ISO 180/1A  |
| Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm   | 11            | kJ/m <sup>2</sup>   | ISO 179/1eA |



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| <b>IMPACT</b>                              |               |                         |              |
| Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm | 11            | kJ/m <sup>2</sup>       | ISO 179/1eA  |
| <b>THERMAL</b>                             |               |                         |              |
| Vicat Softening Temp, Rate B/50            | 127           | °C                      | ASTM D 1525  |
| HDT, 0.45 MPa, 3.2 mm, unannealed          | 122           | °C                      | ASTM D 648   |
| HDT, 1.82 MPa, 3.2mm, unannealed           | 110           | °C                      | ASTM D 648   |
| HDT, 0.45 MPa, 6.4 mm, unannealed          | 124           | °C                      | ASTM D 648   |
| HDT, 1.82 MPa, 6.4 mm, unannealed          | 115           | °C                      | ASTM D 648   |
| CTE, -40°C to 40°C, flow                   | 6.06E-05      | 1/°C                    | ASTM E 831   |
| CTE, -40°C to 40°C, xflow                  | 6.59E-05      | 1/°C                    | ASTM E 831   |
| CTE, -40°C to 40°C, flow                   | 6.06E-05      | 1/°C                    | ISO 11359-2  |
| CTE, -40°C to 40°C, xflow                  | 6.59E-05      | 1/°C                    | ISO 11359-2  |
| Vicat Softening Temp, Rate B/50            | 127           | °C                      | ISO 306      |
| Vicat Softening Temp, Rate B/120           | 129           | °C                      | ISO 306      |
| HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm      | 110           | °C                      | ISO 75/Af    |
| <b>PHYSICAL</b>                            |               |                         |              |
| Specific Gravity                           | 1.22          | -                       | ASTM D 792   |
| Mold Shrinkage, flow, 3.2 mm (5)           | 0.5 - 0.7     | %                       | SABIC Method |
| Melt Flow Rate, 260°C/2.16 kgf             | 9             | g/10 min                | ASTM D 1238  |
| Melt Flow Rate, 260°C/5.0 kgf              | 25            | g/10 min                | ASTM D 1238  |
| Density                                    | 1.22          | g/cm <sup>3</sup>       | ISO 1183     |
| Water Absorption, (23°C/sat)               | 0.15          | %                       | ISO 62       |
| Moisture Absorption (23°C / 50% RH)        | 0.07          | %                       | ISO 62       |
| Melt Volume Rate, MVR at 260°C/5.0 kg      | 22            | cm <sup>3</sup> /10 min | ISO 1133     |
| <b>ELECTRICAL</b>                          |               |                         |              |
| Hot Wire Ignition {PLC}                    | 2             | PLC Code                | UL 746A      |
| High Ampere Arc Ign, surface {PLC}         | 0             | PLC Code                | UL 746A      |



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| <b>ELECTRICAL</b>                           |               |          |          |
| Comparative Tracking Index (UL) {PLC}       | 3             | PLC Code | UL 746A  |
| <b>FLAME CHARACTERISTICS</b>                |               |          |          |
| UL Recognized, 94V-1 Flame Class Rating (3) | 1             | mm       | UL 94    |
| UL Recognized, 94V-0 Flame Class Rating (3) | 1.2           | mm       | UL 94    |
| UL Recognized, 94-5VA Rating (3)            | 2.5           | mm       | UL 94    |
| UL Recognized, 94-5VB Rating (3)            | 1.5           | mm       | UL 94    |



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| PROCESSING PARAMETERS       | TYPICAL VALUE | Unit |
|-----------------------------|---------------|------|
| <b>Injection Molding</b>    |               |      |
| Drying Temperature          | 90 - 100      | °C   |
| Drying Time                 | 2 - 4         | hrs  |
| Drying Time (Cumulative)    | 8             | hrs  |
| Maximum Moisture Content    | 0.04          | %    |
| Melt Temperature            | 270 - 300     | °C   |
| Nozzle Temperature          | 265 - 300     | °C   |
| Front - Zone 3 Temperature  | 265 - 300     | °C   |
| Middle - Zone 2 Temperature | 260 - 300     | °C   |
| Rear - Zone 1 Temperature   | 260 - 300     | °C   |
| Mold Temperature            | 60 - 90       | °C   |
| Back Pressure               | 0.3 - 0.7     | MPa  |
| Screw Speed                 | 40 - 70       | rpm  |
| Shot to Cylinder Size       | 40 - 80       | %    |
| Vent Depth                  | 0.038 - 0.076 | mm   |