



CYCOLOY™ Resin C2800
Americas: COMMERCIAL

Non-chlorinated and non-brominated flame retardant PC+ABS offering balanced flow and impact properties for various applications.

| TYPICAL PROPERTIES ¹ | TYPICAL VALUE | Unit | Standard |
|---|---------------|---------------------|-------------|
| MECHANICAL | | | |
| Tensile Stress, yld, Type I, 50 mm/min | 590 | kgf/cm ² | ASTM D 638 |
| Tensile Strain, yld, Type I, 50 mm/min | 5 | % | ASTM D 638 |
| Tensile Strain, brk, Type I, 50 mm/min | 50 | % | ASTM D 638 |
| Tensile Modulus, 50 mm/min | 27400 | kgf/cm ² | ASTM D 638 |
| Flexural Stress, yld, 2.6 mm/min, 100 mm span | 980 | kgf/cm ² | ASTM D 790 |
| Flexural Modulus, 2.6 mm/min, 100 mm span | 27400 | kgf/cm ² | ASTM D 790 |
| Hardness, Rockwell R | 120 | - | ASTM D 785 |
| IMPACT | | | |
| Izod Impact, notched, 23°C | 43 | cm-kgf/cm | ASTM D 256 |
| Instrumented Impact Total Energy, 23°C | 594 | cm-kgf | ASTM D 3763 |
| THERMAL | | | |
| Vicat Softening Temp, Rate B/50 | 90 | °C | ASTM D 1525 |
| HDT, 1.82 MPa, 3.2mm, unannealed | 73 | °C | ASTM D 648 |
| HDT, 1.82 MPa, 6.4 mm, unannealed | 80 | °C | ASTM D 648 |
| CTE, -40°C to 60°C, flow | 7.2E-05 | 1/°C | ASTM E 831 |
| CTE, -40°C to 60°C, xflow | 7.2E-05 | 1/°C | ASTM E 831 |
| Thermal Conductivity | 0.2 | W/m-°C | ASTM C 177 |
| Relative Temp Index, Elec | 80 | °C | UL 746B |
| Relative Temp Index, Mech w/impact | 70 | °C | UL 746B |
| Relative Temp Index, Mech w/o impact | 80 | °C | UL 746B |
| PHYSICAL | | | |
| Specific Gravity | 1.17 | - | ASTM D 792 |
| Specific Gravity, color | 1.18 | - | ASTM D 792 |
| Water Absorption, 24 hours | 0.1 | % | ASTM D 570 |

(1) Typical values only. Variations within normal tolerances are possible for various colors. All values are measured after at least 48 hours storage at 23°C/50% relative humidity. All properties, except the melt volume and melt flow rates, are measured on injection molded samples. All samples tested under ISO test standards are prepared according to ISO 294.

(2) Only typical data for selection purposes. Not to be used for part or tool design.

(3) This rating is not intended to reflect hazards presented by this or any other material under actual fire conditions.

(4) Internal measurements according to UL standards.

(5) Measurements made from laboratory test coupon. Actual shrinkage may vary outside of range due to differences in processing conditions, equipment, part geometry and tool design. It is recommended that mold shrinkage studies be performed with surrogate or legacy tooling prior to cutting tools for new molded article.

(6) Needs hard coat to consistently pass 60 sec Vertical Burn.

Source GMD, last updated:

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| TYPICAL PROPERTIES ¹ | TYPICAL VALUE | Unit | Standard |
|---|---------------|----------|--------------|
| PHYSICAL | | | |
| Water Absorption, equilibrium, 23C | 0.4 | % | ASTM D 570 |
| Mold Shrinkage, flow, 3.2 mm (5) | 0.4 - 0.6 | % | SABIC Method |
| Mold Shrinkage, xflow, 3.2 mm (5) | 0.4 - 0.6 | % | SABIC Method |
| Melt Flow Rate, 260°C/2.16 kgf | 16 | g/10 min | ASTM D 1238 |
| ELECTRICAL | | | |
| Volume Resistivity | 1.E+17 | Ohm-cm | ASTM D 257 |
| Surface Resistivity | >1.E+14 | Ohm | ASTM D 257 |
| Dielectric Strength, in oil, 3.2 mm | 17.9 | kV/mm | ASTM D 149 |
| Relative Permittivity, 50/60 Hz | 3 | - | ASTM D 150 |
| Relative Permittivity, 100 Hz | 3 | - | ASTM D 150 |
| Dissipation Factor, 50/60 Hz | 0.0048 | - | ASTM D 150 |
| Arc Resistance, Tungsten {PLC} | 6 | PLC Code | ASTM D 495 |
| Hot Wire Ignition {PLC} | 3 | PLC Code | UL 746A |
| High Voltage Arc Track Rate {PLC} | 3 | 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 Recognized, 94V-2 Flame Class Rating (3) | 0.88 | mm | UL 94 |
| UL Recognized, 94V-0 Flame Class Rating (3) | 1.47 | mm | UL 94 |
| UL Recognized, 94-5VB Rating (3) | 2.31 | mm | UL 94 |
| Oxygen Index (LOI) | 35 | % | ASTM D 2863 |

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| PROCESSING PARAMETERS | TYPICAL VALUE | Unit |
|-----------------------------|---------------|------|
| Injection Molding | | |
| Drying Temperature | 75 - 80 | °C |
| Drying Time | 3 - 4 | hrs |
| Drying Time (Cumulative) | 8 | hrs |
| Maximum Moisture Content | 0.04 | % |
| Melt Temperature | 230 - 275 | °C |
| Nozzle Temperature | 230 - 275 | °C |
| Front - Zone 3 Temperature | 225 - 275 | °C |
| Middle - Zone 2 Temperature | 215 - 260 | °C |
| Rear - Zone 1 Temperature | 210 - 255 | °C |
| Mold Temperature | 50 - 70 | °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 |

• NOTE: Back Pressure, Screw Speed, Shot to Cylinder Size and Vent Depth are only mentioned as general guidelines. These may not apply or need adjustment in specific situations such as low shot sizes, thin wall molding and gas-assist molding.

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