

## Cycoloy\* Resin C2100

### Europe-Africa-Middle East: COMMERCIAL

CYCOLOY C2100 is a flame retardant blend, specifically developed to meet the stringent requirements of mains current carrying applications. CYCOLOY C2100 combines

| TYPICAL PROPERTIES <sup>1</sup>             | TYPICAL VALUE | UNIT      | STANDARD    |
|---------------------------------------------|---------------|-----------|-------------|
| <b>MECHANICAL</b>                           |               |           |             |
| Taber Abrasion, CS-17, 1 kg                 | 62            | mg/1000cy | GE Method   |
| Tensile Stress, yield, 5 mm/min             | 50            | MPa       | ISO 527     |
| Tensile Stress, break, 5 mm/min             | 45            | MPa       | ISO 527     |
| Tensile Stress, yield, 50 mm/min            | 60            | MPa       | ISO 527     |
| Tensile Stress, break, 50 mm/min            | 50            | MPa       | ISO 527     |
| Tensile Strain, yield, 5 mm/min             | 4             | %         | ISO 527     |
| Tensile Strain, break, 5 mm/min             | 60            | %         | ISO 527     |
| Tensile Strain, yield, 50 mm/min            | 4             | %         | ISO 527     |
| Tensile Strain, break, 50 mm/min            | >50           | %         | ISO 527     |
| Tensile Modulus, 1 mm/min                   | 2600          | MPa       | ISO 527     |
| Flexural Stress, yield, 2 mm/min            | 85            | MPa       | ISO 178     |
| Flexural Modulus, 2 mm/min                  | 2500          | MPa       | ISO 178     |
| Hardness, H358/30                           | 104           | MPa       | ISO 2039-1  |
| Hardness, Rockwell R                        | 123           | -         | ISO 2039-2  |
| <b>IMPACT</b>                               |               |           |             |
| Izod Impact, unnotched 80*10*4 +23°C        | NB            | kJ/m²     | ISO 180/1U  |
| Izod Impact, unnotched 80*10*4 -30°C        | NB            | kJ/m²     | ISO 180/1U  |
| Izod Impact, notched 80*10*4 +23°C          | 45            | kJ/m²     | ISO 180/1A  |
| Izod Impact, notched 80*10*4 -30°C          | 17            | kJ/m²     | ISO 180/1A  |
| Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm  | 45            | kJ/m²     | ISO 179/1eA |
| Charpy -30°C, V-notch Edgew 80*10*4 sp=62mm | 19            | kJ/m²     | ISO 179/1eA |
| <b>THERMAL</b>                              |               |           |             |
| Thermal Conductivity                        | 0.2           | W/m-°C    | ISO 8302    |



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| <b>THERMAL</b>                          |               |                         |                |
| CTE, -40°C to 40°C, flow                | 7.5E-05       | 1/°C                    | ISO 11359-2    |
| CTE, -40°C to 40°C, xflow               | 7.5E-05       | 1/°C                    | ISO 11359-2    |
| Ball Pressure Test, 125°C +/- 2°C       | PASSES        | -                       | IEC 60695-10-2 |
| Vicat Softening Temp, Rate B/50         | 136           | °C                      | ISO 306        |
| Vicat Softening Temp, Rate B/120        | 138           | °C                      | ISO 306        |
| HDT/Be, 0.45MPa Edgew 120*10*4 sp=100mm | 128           | °C                      | ISO 75/Be      |
| HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm | 112           | °C                      | ISO 75/Ae      |
| Relative Temp Index, Elec               | 125           | °C                      | UL 746B        |
| Relative Temp Index, Mech w/impact      | 60            | °C                      | UL 746B        |
| Relative Temp Index, Mech w/o impact    | 115           | °C                      | UL 746B        |
| <b>PHYSICAL</b>                         |               |                         |                |
| Mold Shrinkage on Tensile Bar, flow (2) | 0.5 - 0.7     | %                       | GE Method      |
| Density                                 | 1.2           | g/cm <sup>3</sup>       | ISO 1183       |
| Water Absorption, (23°C/sat)            | 0.6           | %                       | ISO 62         |
| Moisture Absorption (23°C / 50% RH)     | 0.2           | %                       | ISO 62         |
| Melt Volume Rate, MVR at 260°C/5.0 kg   | 16            | cm <sup>3</sup> /10 min | ISO 1133       |
| <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    |
| Relative Permittivity, 50/60 Hz         | 3             | -                       | IEC 60250      |
| Relative Permittivity, 1 MHz            | 2.6           | -                       | IEC 60250      |
| Dissipation Factor, 50/60 Hz            | 0.005         | -                       | IEC 60250      |



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| <b>ELECTRICAL</b>                             |               |      |                |
| Dissipation Factor, 1 MHz                     | 0.008         | -    | IEC 60250      |
| Comparative Tracking Index                    | 225           | V    | IEC 60112      |
| <b>FLAME CHARACTERISTICS</b>                  |               |      |                |
| UL Recognized, 94V-0 Flame Class Rating (3)   | 1.5           | mm   | UL 94          |
| UL Recognized, 94-5VB Rating (3)              | 2             | mm   | UL 94          |
| Glow Wire Flammability Index 960°C, passes at | 1             | mm   | IEC 60695-2-12 |
| Oxygen Index (LOI)                            | 32            | %    | ISO 4589       |



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| PROCESSING PARAMETERS       | TYPICAL VALUE | UNIT |
|-----------------------------|---------------|------|
| <b>Injection Molding</b>    |               |      |
| Drying Temperature          | 90 - 100      | °C   |
| Drying Time                 | 2 - 4         | hrs  |
| Maximum Moisture Content    | 0.02          | %    |
| Melt Temperature            | 250 - 280     | °C   |
| Nozzle Temperature          | 230 - 270     | °C   |
| Front - Zone 3 Temperature  | 240 - 280     | °C   |
| Middle - Zone 2 Temperature | 230 - 270     | °C   |
| Rear - Zone 1 Temperature   | 210 - 240     | °C   |
| Hopper Temperature          | 60 - 80       | °C   |
| Mold Temperature            | 60 - 90       | °C   |

