

# CYCOLOY\* C1100HF Resin

## General Information

### Product Description

CYCOLOY C1100HF is the improved flow version of CYCOLOY C1100 and has been developed to better fill long and complex parts while maintaining still excellent mechanical properties. Its superior flow will enhance productivity and appearance of the finished parts.

### General

|                   |                      |
|-------------------|----------------------|
| Material Status   | • Commercial: Active |
| Availability      | • Europe             |
| Features          | • Good Flow          |
| RoHS Compliance   | • RoHS Compliant     |
| Processing Method | • Injection Molding  |

## ASTM & ISO Properties <sup>1</sup>

| Physical                                     | Nominal Value | Unit                   | Test Method     |
|----------------------------------------------|---------------|------------------------|-----------------|
| Density                                      | 1.12          | g/cm <sup>3</sup>      | ISO 1183        |
| Melt Volume-Flow Rate (MVR)                  |               |                        | ISO 1133        |
| 260°C/2.16 kg                                | 6.00          | cm <sup>3</sup> /10min |                 |
| 260°C/5.0 kg                                 | 20.0          | cm <sup>3</sup> /10min |                 |
| Molding Shrinkage - Flow <sup>2</sup>        | 0.50 to 0.70  | %                      | Internal Method |
| Water Absorption (Saturation, 23°C)          | 0.60          | %                      | ISO 62          |
| Water Absorption (Equilibrium, 23°C, 50% RH) | 0.20          | %                      | ISO 62          |
| Mechanical                                   | Nominal Value | Unit                   | Test Method     |
| Tensile Modulus                              | 2400          | MPa                    | ISO 527-2/1     |
| Tensile Stress                               |               |                        |                 |
| Yield                                        | 55.0          | MPa                    | ISO 527-2/5     |
| Yield                                        | 55.0          | MPa                    | ISO 527-2/50    |
| Tensile Stress                               |               |                        |                 |
| Break                                        | 45.0          | MPa                    | ISO 527-2/5     |
| Break                                        | 45.0          | MPa                    | ISO 527-2/50    |
| Tensile Strain                               |               |                        |                 |
| Yield                                        | 5.0           | %                      | ISO 527-2/5     |
| Yield                                        | 4.0           | %                      | ISO 527-2/50    |
| Tensile Strain                               |               |                        |                 |
| Break                                        | 120           | %                      | ISO 527-2/5     |
| Break                                        | > 50          | %                      | ISO 527-2/50    |
| Flexural Modulus <sup>3</sup>                | 2300          | MPa                    | ISO 178         |
| Flexural Strength <sup>3, 4</sup>            | 75.0          | MPa                    | ISO 178         |
| Taber Abrasion Resistance                    |               |                        | Internal Method |
| 1000 Cycles, 1000 g, CS-17 Wheel             | 81.0          | mg                     |                 |

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| Impact                                      | Nominal Value | Unit              | Test Method    |
|---------------------------------------------|---------------|-------------------|----------------|
| Charpy Notched Impact Strength              |               |                   | ISO 179/1eA    |
| -30°C <sup>5</sup>                          | 30            | kJ/m <sup>2</sup> |                |
| -30°C <sup>6</sup>                          | 25            | kJ/m <sup>2</sup> |                |
| 23°C <sup>6</sup>                           | 50            | kJ/m <sup>2</sup> |                |
| 23°C <sup>5</sup>                           | 55            | kJ/m <sup>2</sup> |                |
| Notched Izod Impact Strength                |               |                   | ISO 180/1A     |
| -30°C <sup>7</sup>                          | 28            | kJ/m <sup>2</sup> |                |
| -30°C <sup>8</sup>                          | 25            | kJ/m <sup>2</sup> |                |
| 23°C <sup>7</sup>                           | 50            | kJ/m <sup>2</sup> |                |
| 23°C <sup>8</sup>                           | 50            | kJ/m <sup>2</sup> |                |
| Unnotched Izod Impact Strength <sup>7</sup> |               |                   | ISO 180/1U     |
| -30°C                                       | No Break      |                   |                |
| 23°C                                        | No Break      |                   |                |
| Hardness                                    | Nominal Value | Unit              | Test Method    |
| Rockwell Hardness (R-Scale)                 | 117           |                   | ISO 2039-2     |
| Ball Indentation Hardness (H 358/30)        | 99.0          | MPa               | ISO 2039-1     |
| Thermal                                     | Nominal Value | Unit              | Test Method    |
| Heat Deflection Temperature <sup>9</sup>    |               |                   | ISO 75-2/Be    |
| 0.45 MPa, Unannealed, 100 mm Span           | 120           | °C                |                |
| Heat Deflection Temperature <sup>9</sup>    |               |                   | ISO 75-2/Ae    |
| 1.8 MPa, Unannealed, 100 mm Span            | 100           | °C                |                |
| Vicat Softening Temperature                 |               |                   |                |
| --                                          | 126           | °C                | ISO 306/B50    |
| --                                          | 128           | °C                | ISO 306/B120   |
| Ball Pressure Test                          |               |                   | IEC 60695-10-2 |
| 75°C                                        | Pass          |                   |                |
| 115°C <sup>10</sup>                         | Pass          |                   |                |
| CLTE - Flow (23 to 60°C)                    | 0.000080      | cm/cm/°C          | ISO 11359-2    |
| CLTE - Transverse (23 to 60°C)              | 0.000080      | cm/cm/°C          | ISO 11359-2    |
| Thermal Conductivity                        | 0.20          | W/m/K             | ISO 8302       |
| Electrical                                  | Nominal Value | Unit              | Test Method    |
| Surface Resistivity                         | > 1.0E+15     | ohms              | IEC 60093      |
| Volume Resistivity                          | > 1.0E+15     | ohm·cm            | IEC 60093      |

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| Electrical                             | Nominal Value | Unit  | Test Method    |
|----------------------------------------|---------------|-------|----------------|
| Relative Permittivity                  |               |       | IEC 60250      |
| 50 Hz                                  | 2.80          |       |                |
| 60 Hz                                  | 2.80          |       |                |
| 1 MHz                                  | 2.70          |       |                |
| Dissipation Factor                     |               |       | IEC 60250      |
| 50 Hz                                  | 0.0020        |       |                |
| 60 Hz                                  | 0.0020        |       |                |
| 1 MHz                                  | 0.0070        |       |                |
| Electric Strength                      |               |       | IEC 60243-1    |
| 0.800 mm, in Oil                       | 35            | kV/mm |                |
| 1.60 mm, in Oil                        | 25            | kV/mm |                |
| 3.20 mm, in Oil                        | 17            | kV/mm |                |
| Flammability                           | Nominal Value | Unit  | Test Method    |
| Flame Rating - UL                      |               |       | UL 94          |
| 1.50 mm                                | HB            |       |                |
| 3.00 mm                                | HB            |       |                |
| Glow Wire Flammability Index (3.20 mm) | 650           | °C    | IEC 60695-2-12 |
| UL                                     | Nominal Value | Unit  | Test Method    |
| RTI Str                                | 60.0          | °C    | UL 746         |
| RTI Imp                                | 60.0          | °C    | UL 746         |
| RTI Elec                               | 60.0          | °C    | UL 746         |

| Processing Information |               |      |  |
|------------------------|---------------|------|--|
| Injection              | Nominal Value | Unit |  |
| Drying Temperature     | 95.0 to 105   | °C   |  |
| Drying Time            | 2.0 to 4.0    | hr   |  |
| Suggested Max Moisture | 0.020         | %    |  |
| Hopper Temperature     | 60.0 to 80.0  | °C   |  |
| Rear Temperature       | 220 to 250    | °C   |  |
| Middle Temperature     | 240 to 280    | °C   |  |
| Front Temperature      | 240 to 280    | °C   |  |
| Nozzle Temperature     | 230 to 270    | °C   |  |
| Processing (Melt) Temp | 250 to 280    | °C   |  |
| Mold Temperature       | 60.0 to 90.0  | °C   |  |

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Notes

|                                                                                   |
|-----------------------------------------------------------------------------------|
| <sup>1</sup> Typical properties: these are not to be construed as specifications. |
| <sup>2</sup> Tensile Bar                                                          |
| <sup>3</sup> 2.0 mm/min                                                           |
| <sup>4</sup> Yield                                                                |
| <sup>5</sup> 80*10*4 sp=62mm                                                      |
| <sup>6</sup> 80*10*3 sp=62mm                                                      |
| <sup>7</sup> 80*10*4                                                              |
| <sup>8</sup> 80*10*3                                                              |
| <sup>9</sup> 120*10*4 mm                                                          |
| <sup>10</sup> Approximate maximum                                                 |