

CYCOLAC™ MG47 resin

Acrylonitrile Butadiene Styrene

SABIC Innovative Plastics

Message:

Multi-purpose, injection molding ABS providing a favorable balance of engineering properties.

| General Information | | | |
|---|-------------------|-------------------|---------------------|
| UL YellowCard | E207780-228360 | E207780-228361 | |
| Processing Method | Injection molding | | |
| Physical | Nominal Value | Unit | Test Method |
| Specific Gravity | 1.04 | g/cm ³ | ASTM D792, ISO 1183 |
| Melt Mass-Flow Rate (MFR) | | | |
| 230°C/3.8 kg | 5.6 | g/10 min | ASTM D1238 |
| 220°C/10.0 kg | 18 | g/10 min | ISO 1133 |
| Molding Shrinkage - Flow (3.20 mm) | 0.50 - 0.80 | % | Internal method |
| Hardness | Nominal Value | Unit | Test Method |
| Rockwell Hardness (R-Scale) | 112 | | ASTM D785 |
| Mechanical | Nominal Value | Unit | Test Method |
| Tensile Modulus | | | |
| -- ¹ | 2270 | MPa | ASTM D638 |
| -- | 2370 | MPa | ISO 527-2/1 |
| Tensile Strength | | | |
| Yield ² | 44.0 | MPa | ASTM D638 |
| Yield | 47.0 | MPa | ISO 527-2/50 |
| Fracture ³ | 33.0 | MPa | ASTM D638 |
| Fracture | 35.0 | MPa | ISO 527-2/50 |
| Tensile Elongation | | | |
| Yield ⁴ | 2.0 | % | ASTM D638 |
| Yield | 2.6 | % | ISO 527-2/50 |
| Fracture ⁵ | 24 | % | ASTM D638 |
| Fracture | 25 | % | ISO 527-2/50 |
| Flexural Modulus | | | |
| 50.0mm span ⁶ | 2300 | MPa | ASTM D790 |
| -- ⁷ | 2200 | MPa | ISO 178 |
| Flexural Stress | | | |
| -- | 70.0 | MPa | ISO 178 |
| Yield, 50.0mm span ⁸ | 70.0 | MPa | ASTM D790 |
| Impact | Nominal Value | Unit | Test Method |
| Charpy Notched Impact Strength ⁹ | | | |
| -30°C | 9.0 | kJ/m ² | ISO 179/1eA |

| | | | |
|---|----------------------|-------------------|--------------------------|
| 23°C | 26 | kJ/m ² | ISO 179/1eA |
| Notched Izod Impact | | | |
| 23°C | 320 | J/m | ASTM D256 |
| -30°C ¹⁰ | 8.0 | kJ/m ² | ISO 180/1A |
| 23°C ¹¹ | 22 | kJ/m ² | ISO 180/1A |
| Instrumented Dart Impact (23°C, Total Energy) | 30.0 | J | ASTM D3763 |
| Thermal | Nominal Value | Unit | Test Method |
| Deflection Temperature Under Load | | | |
| 0.45 MPa, unannealed, 3.20mm | 94.0 | °C | ASTM D648 |
| 1.8 MPa, unannealed, 3.20mm | 80.0 | °C | ASTM D648 |
| 1.8 MPa, unannealed, 64.0mm span ¹² | 81.0 | °C | ISO 75-2/Af |
| Vicat Softening Temperature | | | |
| -- | 99.0 | °C | ASTM D1525 ¹³ |
| -- | 98.0 | °C | ISO 306/B50 |
| -- | 100 | °C | ISO 306/B120 |
| Linear thermal expansion coefficient | | | |
| Flow: -40 to 40°C | 8.8E-5 | cm/cm/°C | ASTM E831 |
| Lateral: -40 to 40°C | 8.8E-5 | cm/cm/°C | ASTM E831 |
| RTI Elec | 60.0 | °C | UL 746 |
| RTI Imp | 60.0 | °C | UL 746 |
| RTI | 60.0 | °C | UL 746 |
| Electrical | Nominal Value | | Test Method |
| Arc Resistance ¹⁴ | PLC 6 | | ASTM D495 |
| Comparative Tracking Index (CTI) | PLC 0 | | UL 746 |
| High Amp Arc Ignition (HAI) | PLC 0 | | UL 746 |
| High Voltage Arc Tracking Rate (HVTR) | PLC 3 | | UL 746 |
| Hot-wire Ignition (HWI) | PLC 3 | | UL 746 |
| Flammability | Nominal Value | | Test Method |
| Flame Rating (1.50 mm) | HB | | UL 94 |
| Fill Analysis | Nominal Value | Unit | Test Method |
| Melt Viscosity (240°C, 1000 sec ⁻¹) | 225 | Pa · s | ASTM D3835 |
| Injection | Nominal Value | Unit | |
| Drying Temperature | 82.2 - 93.3 | °C | |
| Drying Time | 2.0 - 4.0 | hr | |
| Drying Time, Maximum | 8.0 | hr | |
| Suggested Max Moisture | 0.10 | % | |
| Suggested Shot Size | 50 - 70 | % | |
| Rear Temperature | 188 - 210 | °C | |
| Middle Temperature | 204 - 227 | °C | |
| Front Temperature | 216 - 238 | °C | |
| Nozzle Temperature | 218 - 260 | °C | |

| | | |
|------------------------|---------------|-----|
| Processing (Melt) Temp | 218 - 260 | °C |
| Mold Temperature | 48.9 - 71.1 | °C |
| Back Pressure | 0.345 - 0.689 | MPa |
| Screw Speed | 30 - 60 | rpm |
| Vent Depth | 0.038 - 0.051 | mm |

| NOTE | | |
|------|---------------------------|--|
| 1. | 5.0 mm/min | |
| 2. | Type 1, 5.0 mm/min | |
| 3. | Type 1, 5.0 mm/min | |
| 4. | Type 1, 5.0 mm/min | |
| 5. | Type 1, 5.0 mm/min | |
| 6. | 1.3 mm/min | |
| 7. | 2.0 mm/min | |
| 8. | 1.3 mm/min | |
| 9. | 80*10*4 sp=62mm | |
| 10. | 80*10*4 | |
| 11. | 80*10*4 | |
| 12. | 80*10*4 mm | |
| 13. | 标准 B (120°C/h), 载荷2 (50N) | |
| 14. | Tungsten electrode | |

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