

# Makrolon® 6487

Polycarbonate

Covestro - Polycarbonates

## Message:

MVR (300 °C/1.2 kg) 9.0 cm<sup>3</sup>/10 min; flame retardant; UL 94V-0/1.5 mm and 5VA/3.0 mm; medium viscosity; UV stabilized; easy release; injection molding  
- melt temperature 280 - 320 °C; available in opaque colors only

| General Information                        |                   |                        |              |
|--------------------------------------------|-------------------|------------------------|--------------|
| UL YellowCard                              | E41613-304366     |                        |              |
| Additive                                   | Flame Retardant   |                        |              |
|                                            | UV Stabilizer     |                        |              |
| Features                                   | Flame Retardant   |                        |              |
|                                            | Good Mold Release |                        |              |
|                                            | Medium Viscosity  |                        |              |
| RoHS Compliance                            | RoHS Compliant    |                        |              |
| Appearance                                 | Colors Available  |                        |              |
|                                            | Opaque            |                        |              |
| Processing Method                          | Injection Molding |                        |              |
| Physical                                   | Nominal Value     | Unit                   | Test Method  |
| Density (23°C)                             | 1.20              | g/cm <sup>3</sup>      | ISO 1183     |
| Apparent Density <sup>1</sup>              | 0.64              | g/cm <sup>3</sup>      | ISO 60       |
| Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)   | 10                | g/10 min               | ISO 1133     |
| Melt Volume-Flow Rate (MVR) (300°C/1.2 kg) | 9.00              | cm <sup>3</sup> /10min | ISO 1133     |
| Molding Shrinkage                          |                   |                        |              |
| Across Flow                                | 0.60 to 0.80      | %                      | ISO 2577     |
| Flow                                       | 0.60 to 0.80      | %                      | ISO 2577     |
| Across Flow : 2.00 mm <sup>2</sup>         | 0.75              | %                      | ISO 294-4    |
| Flow : 2.00 mm <sup>3</sup>                | 0.70              | %                      | ISO 294-4    |
| Water Absorption                           |                   |                        |              |
| Saturation, 23°C                           | 0.30              | %                      | ISO 62       |
| Equilibrium, 23°C, 50% RH                  | 0.12              | %                      |              |
| Hardness                                   | Nominal Value     | Unit                   | Test Method  |
| Ball Indentation Hardness                  | 117               | MPa                    | ISO 2039-1   |
| Mechanical                                 | Nominal Value     | Unit                   | Test Method  |
| Tensile Modulus (23°C)                     | 2450              | MPa                    | ISO 527-2/1  |
| Tensile Stress                             |                   |                        | ISO 527-2/50 |
| Yield, 23°C                                | 66.0              | MPa                    |              |

| Break, 23°C                                                       | 65.0                       | MPa               |                 |
|-------------------------------------------------------------------|----------------------------|-------------------|-----------------|
| Tensile Strain                                                    |                            |                   | ISO 527-2/50    |
| Yield, 23°C                                                       | 6.0                        | %                 |                 |
| Break, 23°C                                                       | 120                        | %                 |                 |
| Nominal Tensile Strain at Break (23°C)                            | > 50                       | %                 | ISO 527-2/50    |
| Flexural Modulus <sup>4</sup> (23°C)                              | 2450                       | MPa               | ISO 178         |
| Flexural Stress <sup>5</sup>                                      |                            |                   | ISO 178         |
| 3.5% Strain, 23°C                                                 | 75.0                       | MPa               |                 |
| 23°C                                                              | 99.0                       | MPa               |                 |
| Flexural Strain at Flexural Strength <sup>6</sup> (23°C)          | 7.0                        | %                 | ISO 178         |
| Application of Flame from Small Burner - Method K and F (2.00 mm) | K1, F1                     |                   | DIN 53438-1, -3 |
| Burning Rate - US-FMVSS (> 1.00 mm)                               | passed                     |                   | ISO 3795        |
| Flash Ignition Temperature                                        | 470                        | °C                | ASTM D1929      |
| Self Ignition Temperature                                         | 550                        | °C                | ASTM D1929      |
| Electrolytical Corrosion (23°C)                                   | A1                         |                   | IEC 60426       |
| ISO Shortname                                                     | ISO 7391-PC,MFLR,(,,)-09-9 |                   |                 |
| Impact                                                            | Nominal Value              | Unit              | Test Method     |
| Charpy Notched Impact Strength <sup>7</sup>                       |                            |                   | ISO 7391        |
| -30°C, Complete Break                                             | 12                         | kJ/m <sup>2</sup> |                 |
| 23°C, Partial Break                                               | 70                         | kJ/m <sup>2</sup> |                 |
| Charpy Unnotched Impact Strength                                  |                            |                   | ISO 179/1eU     |
| -30°C                                                             | No Break                   |                   |                 |
| 23°C                                                              | No Break                   |                   |                 |
| Notched Izod Impact Strength <sup>8</sup>                         |                            |                   | ISO 7391        |
| -30°C, Complete Break                                             | 12                         | kJ/m <sup>2</sup> |                 |
| 23°C, Partial Break                                               | 65                         | kJ/m <sup>2</sup> |                 |
| Multi-Axial Instrumented Impact Energy                            |                            |                   | ISO 6603-2      |
| -30°C                                                             | 55.0                       | J                 |                 |
| 23°C                                                              | 50.0                       | J                 |                 |
| Multi-Axial Instrumented Impact Peak Force                        |                            |                   | ISO 6603-2      |
| -30°C                                                             | 6000                       | N                 |                 |
| 23°C                                                              | 5200                       | N                 |                 |
| Thermal                                                           | Nominal Value              | Unit              | Test Method     |
| Heat Deflection Temperature                                       |                            |                   |                 |
| 0.45 MPa, Unannealed                                              | 134                        | °C                | ISO 75-2/B      |
| 1.8 MPa, Unannealed                                               | 122                        | °C                | ISO 75-2/A      |
| Glass Transition Temperature <sup>9</sup>                         | 141                        | °C                | ISO 11357-2     |
| Vicat Softening Temperature                                       |                            |                   |                 |
| --                                                                | 143                        | °C                | ISO 306/B50     |
| --                                                                | 141                        | °C                | ISO 306/B120    |
| Ball Pressure Test (135°C)                                        | Pass                       |                   | IEC 60695-10-2  |

|                                           |                            |          |                |
|-------------------------------------------|----------------------------|----------|----------------|
| CLTE                                      |                            |          | ISO 11359-2    |
| Flow : 23 to 55°C                         | 6.5E-5                     | cm/cm/°C |                |
| Transverse : 23 to 55°C                   | 6.5E-5                     | cm/cm/°C |                |
| Thermal Conductivity <sup>10</sup> (23°C) | 0.20                       | W/m/K    | ISO 8302       |
| RTI Elec (1.50 mm)                        | 125                        | °C       | UL 746         |
| RTI Imp (1.50 mm)                         | 115                        | °C       | UL 746         |
| RTI Str (1.50 mm)                         | 125                        | °C       | UL 746         |
| Electrical                                | Nominal Value              | Unit     | Test Method    |
| Surface Resistivity                       | 1.0E+16                    | ohms     | IEC 60093      |
| Volume Resistivity (23°C)                 | 1.0E+16                    | ohms·cm  | IEC 60093      |
| Electric Strength (23°C, 1.00 mm)         | 34                         | kV/mm    | IEC 60243-1    |
| Relative Permittivity                     |                            |          | IEC 60250      |
| 23°C, 100 Hz                              | 3.10                       |          |                |
| 23°C, 1 MHz                               | 3.00                       |          |                |
| Dissipation Factor                        |                            |          | IEC 60250      |
| 23°C, 100 Hz                              | 8.0E-4                     |          |                |
| 23°C, 1 MHz                               | 9.0E-3                     |          |                |
| Comparative Tracking Index                |                            |          | IEC 60112      |
| Solution A                                | 225                        | V        |                |
| Solution B                                | 125                        | V        |                |
| Flammability                              | Nominal Value              | Unit     | Test Method    |
| Flame Rating                              |                            |          | UL 94          |
| 1.50 mm                                   | V-0                        |          |                |
| 3.00 mm                                   | 5VA                        |          |                |
| Glow Wire Flammability Index              |                            |          | IEC 60695-2-12 |
| 1.50 mm                                   | 960                        | °C       |                |
| 3.00 mm                                   | 960                        | °C       |                |
| Glow Wire Ignition Temperature            |                            |          | IEC 60695-2-13 |
| 1.50 mm                                   | 900                        | °C       |                |
| 3.00 mm                                   | 930                        | °C       |                |
| Oxygen Index <sup>11</sup>                | 36                         | %        | ISO 4589-2     |
| NOTE                                      |                            |          |                |
| 1.                                        | Pellets                    |          |                |
| 2.                                        | 60x60x2 mm, 500 bar        |          |                |
| 3.                                        | 60x60x2 mm, 500 bar        |          |                |
| 4.                                        | 2.0 mm/min                 |          |                |
| 5.                                        | 2.0 mm/min                 |          |                |
| 6.                                        | 2 mm/min                   |          |                |
| 7.                                        | Based on ISO 179-1eA, 3 mm |          |                |
| 8.                                        | Based on ISO 180-A, 3 mm   |          |                |
| 9.                                        | 10°C/min                   |          |                |
| 10.                                       | Cross-flow                 |          |                |

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