

# CALIBRE™ 2061-10

## Polycarbonate Resin

### Overview

CALIBRE™ 2061-10 resin provides exceptional clarity, heat resistance, impact strength, processability, and has low contamination levels. CALIBRE 2061-10 resin has been tested according to ISO 10993 (Biological Evaluation of Medical Devices) and is suitable for use in approved medical applications. It is compatible with most medical sterilization methods.

Main Characteristics:

- Tested under ISO 10993
- Contains Mold Release

Applications:

- Medical Applications
- Surgical Device Handles
- Drug Delivery Devices
- Fluid Delivery Applications

| Physical                                 | Nominal Value (English) | Nominal Value (SI)     | Test Method            |
|--|-------------------------|------------------------|------------------------|
| Density                                  | 1.20 g/cm <sup>3</sup>  | 1.20 g/cm <sup>3</sup> | ASTM D792<br>ISO 1183  |
| Melt Mass-Flow Rate (MFR) (300°C/1.2 kg) | 10 g/10 min             | 10 g/10 min            | ASTM D1238<br>ISO 1133 |
| Molding Shrinkage - Flow                 | 5.0E-3 to 7.0E-3 in/in  | 0.50 to 0.70 %         | ASTM D955<br>ISO 294-4 |
| Water Absorption                         |                         |                        | ISO 62                 |
| Saturation, 73°F (23°C)                  | 0.32 %                  | 0.32 %                 |                        |
| Equilibrium, 73°F (23°C), 50% RH         | 0.12 %                  | 0.12 %                 |                        |
| Mechanical                               | Nominal Value (English) | Nominal Value (SI)     | Test Method            |
| Tensile Modulus                          | 334000 psi              | 2300 MPa               | ISO 527-1/1            |
| Tensile Strength                         |                         |                        |                        |
| Yield <sup>1</sup>                       | 8700 psi                | 60.0 MPa               | ASTM D638              |
| Yield                                    | 8700 psi                | 60.0 MPa               | ISO 527-2/50           |
| Break <sup>1</sup>                       | 10300 psi               | 71.0 MPa               | ASTM D638              |
| Break                                    | 10300 psi               | 71.0 MPa               | ISO 527-2/50           |
| Tensile Elongation                       |                         |                        |                        |
| Yield <sup>1</sup>                       | 6.0 %                   | 6.0 %                  | ASTM D638              |
| Yield                                    | 6.0 %                   | 6.0 %                  | ISO 527-2/50           |
| Break <sup>1</sup>                       | 130 %                   | 130 %                  | ASTM D638              |
| Break                                    | 140 %                   | 140 %                  | ISO 527-2/50           |
| Flexural Modulus                         |                         |                        |                        |
| --                                       | 350000 psi              | 2410 MPa               | ASTM D790              |
| -- 2, 3                                  | 348000 psi              | 2400 MPa               | ISO 178                |
| Flexural Strength                        |                         |                        |                        |
| --                                       | 14000 psi               | 96.5 MPa               | ASTM D790              |
| -- 2, 3                                  | 14100 psi               | 97.0 MPa               | ISO 178                |

| <b>Impact</b>                         | <b>Nominal Value (English)</b> | <b>Nominal Value (SI)</b> | <b>Test Method</b>      |
|---------------------------------------|--------------------------------|---------------------------|-------------------------|
| Charpy Notched Impact Strength        |                                |                           | ISO 179/1eA             |
| -22°F (-30°C)                         | 6.2 ft-lb/in <sup>2</sup>      | 13 kJ/m <sup>2</sup>      |                         |
| 73°F (23°C)                           | 17 ft-lb/in <sup>2</sup>       | 35 kJ/m <sup>2</sup>      |                         |
| Notched Izod Impact                   |                                |                           |                         |
| 73°F (23°C)                           | 16 ft-lb/in                    | 880 J/m                   | ASTM D256               |
| 73°F (23°C)                           | 43 ft-lb/in <sup>2</sup>       | 90 kJ/m <sup>2</sup>      | ISO 180/1A              |
| Instrumented Dart Impact <sup>4</sup> |                                |                           | ASTM D3763              |
| 73°F (23°C), Total Energy             | 783 in-lb                      | 88.5 J                    |                         |
| Tensile Impact Strength               | 248 ft-lb/in <sup>2</sup>      | 522 kJ/m <sup>2</sup>     | ASTM D1822              |
| <b>Hardness</b>                       | <b>Nominal Value (English)</b> | <b>Nominal Value (SI)</b> | <b>Test Method</b>      |
| Rockwell Hardness                     |                                |                           | ASTM D785               |
| M-Scale                               | 73                             | 73                        |                         |
| R-Scale                               | 118                            | 118                       |                         |
| <b>Thermal</b>                        | <b>Nominal Value (English)</b> | <b>Nominal Value (SI)</b> | <b>Test Method</b>      |
| Deflection Temperature Under Load     |                                |                           |                         |
| 66 psi (0.45 MPa), Unannealed         | 289 °F                         | 143 °C                    | ASTM D648               |
| 66 psi (0.45 MPa), Annealed           | 291 °F                         | 144 °C                    | ASTM D648<br>ISO 75-2/B |
| 264 psi (1.8 MPa), Unannealed         | 262 °F                         | 128 °C                    | ASTM D648               |
| 264 psi (1.8 MPa), Unannealed         | 257 °F                         | 125 °C                    | ISO 75-2/A              |
| 264 psi (1.8 MPa), Annealed           | 286 °F                         | 141 °C                    | ASTM D648<br>ISO 75-2/A |
| Vicat Softening Temperature           | 295 °F                         | 146 °C                    | ISO 306/B50             |
| CLTE - Flow                           |                                |                           |                         |
| -40 to 176°F (-40 to 80°C)            | 3.8E-5 in/in/°F                | 6.8E-5 cm/cm/°C           | ASTM D696               |
| --                                    | 3.9E-5 in/in/°F                | 7.0E-5 cm/cm/°C           | ISO 11359-2             |
| <b>Electrical</b>                     | <b>Nominal Value (English)</b> | <b>Nominal Value (SI)</b> | <b>Test Method</b>      |
| Volume Resistivity                    | > 1.0E+15 ohms-cm              | > 1.0E+15 ohms-cm         | IEC 60093               |
| Electric Strength                     | 430 V/mil                      | 17 kV/mm                  | IEC 60243-1             |
| Relative Permittivity                 |                                |                           | IEC 60250               |
| 100 Hz                                | 3.00                           | 3.00                      |                         |
| 1 MHz                                 | 3.00                           | 3.00                      |                         |
| Dissipation Factor                    |                                |                           | IEC 60250               |
| 100 Hz                                | 1.0E-3                         | 1.0E-3                    |                         |
| 1 MHz                                 | 2.0E-3                         | 2.0E-3                    |                         |
| <b>Flammability</b>                   | <b>Nominal Value (English)</b> | <b>Nominal Value (SI)</b> | <b>Test Method</b>      |
| Flame Rating <sup>5</sup>             |                                |                           | UL 94                   |
| 0.12 in (3.0 mm)                      | HB                             | HB                        |                         |
| 0.030 in (0.75 mm)                    | V-2                            | V-2                       |                         |
| 0.11 in (2.8 mm)                      | V-2                            | V-2                       |                         |
| <b>Optical</b>                        | <b>Nominal Value (English)</b> | <b>Nominal Value (SI)</b> | <b>Test Method</b>      |
| Refractive Index                      | 1.586                          | 1.586                     | ASTM D542<br>ISO 489    |
| Light Transmittance                   | 87.0 to 91.0 %                 | 87.0 to 91.0 %            | ASTM D1003              |
| Haze                                  | < 1.00 %                       | < 1.00 %                  | ASTM D1003              |
| <b>Injection</b>                      | <b>Nominal Value (English)</b> | <b>Nominal Value (SI)</b> |                         |
| Drying Temperature                    | 248 °F                         | 120 °C                    |                         |
| Drying Time                           | 4.0 hr                         | 4.0 hr                    |                         |
| Processing (Melt) Temp                | 554 to 590 °F                  | 290 to 310 °C             |                         |
| Mold Temperature                      | 158 to 212 °F                  | 70 to 100 °C              |                         |