

# CALIBRE™ 302-7

Polycarbonate Resin

Trinseo

## Message:

CALIBRE™ 302-7 is a standard linear polycarbonate resin designed for solid sheet extrusion. CALIBRE™ 302-7 contains a UV absorber additive, but note that sheets for outdoor applications also require a protective UV cap layer. It is recommended to coextrude a 50 µm thick UV cap layer, using CALIBRE™ 320UV.

- Main Characteristics:
- Exceptional impact resistance
  - Excellent optical properties
  - High heat resistance
- Applications:
- Solid sheet applications

| General Information |                        |                |                |
|---------------------|------------------------|----------------|----------------|
| UL YellowCard       | E54680-469961          | E157291-238220 | E206114-228276 |
| Additive            | UV Stabilizer          |                |                |
| Features            | High Heat Resistance   |                |                |
|                     | High Impact Resistance |                |                |
|                     | Opticals               |                |                |
| Uses                | Sheet                  |                |                |
| Forms               | Pellets                |                |                |
| Processing Method   | Injection Molding      |                |                |
|                     | Sheet Extrusion        |                |                |

| Physical                                 | Nominal Value | Unit              | Test Method           |
|------------------------------------------|---------------|-------------------|-----------------------|
| Specific Gravity                         | 1.20          | g/cm <sup>3</sup> | ASTM D792, ISO 1183/B |
| Melt Mass-Flow Rate (MFR) (300°C/1.2 kg) | 7.0           | g/10 min          | ASTM D1238, ISO 1133  |
| Molding Shrinkage - Flow                 | 0.50 to 0.70  | %                 | ASTM D955, ISO 294-4  |
| Water Absorption                         |               |                   | ASTM D570, ISO 62     |
| 23°C, 24 hr                              | 0.15          | %                 |                       |
| Equilibrium, 23°C, 50% RH                | 0.32          | %                 |                       |

| Mechanical         | Nominal Value | Unit | Test Method  |
|--------------------|---------------|------|--------------|
| Tensile Modulus    |               |      |              |
| -- <sup>1</sup>    | 2280          | MPa  | ASTM D638    |
| --                 | 2300          | MPa  | ISO 527-2/50 |
| Tensile Strength   |               |      |              |
| Yield <sup>2</sup> | 60.7          | MPa  | ASTM D638    |
| Yield              | 61.0          | MPa  | ISO 527-2/50 |
| Break <sup>3</sup> | 71.7          | MPa  | ASTM D638    |
| Break              | 72.0          | MPa  | ISO 527-2/50 |
| Tensile Elongation |               |      |              |

|                                         |                                     |                   |                                          |
|-----------------------------------------|-------------------------------------|-------------------|------------------------------------------|
| Yield <sup>4</sup>                      | 6.0                                 | %                 | ASTM D638                                |
| Yield                                   | 6.0                                 | %                 | ISO 527-2/50                             |
| Break <sup>5</sup>                      | 170                                 | %                 | ASTM D638                                |
| Break                                   | 170                                 | %                 | ISO 527-2/50                             |
| Flexural Modulus                        |                                     |                   |                                          |
| -- <sup>6</sup>                         | 2280                                | MPa               | ASTM D790                                |
| -- <sup>7</sup>                         | 2300                                | MPa               | ISO 178                                  |
| Flexural Strength                       |                                     |                   |                                          |
| -- <sup>8</sup>                         | 93.8                                | MPa               | ASTM D790                                |
| -- <sup>9</sup>                         | 92.0                                | MPa               | ISO 178                                  |
| Taber Abrasion Resistance <sup>10</sup> | 20                                  | %                 | ASTM D1044                               |
| Impact                                  | Nominal Value                       | Unit              | Test Method                              |
| Charpy Notched Impact Strength          |                                     |                   | ISO 179/1eA                              |
| -30°C                                   | 32                                  | kJ/m <sup>2</sup> |                                          |
| 23°C                                    | 80                                  | kJ/m <sup>2</sup> |                                          |
| Notched Izod Impact                     |                                     |                   | ASTM D256                                |
| -30°C                                   | 370                                 | J/m               |                                          |
| 23°C                                    | 910                                 | J/m               |                                          |
| Thermal                                 | Nominal Value                       | Unit              | Test Method                              |
| Glass Transition Temperature            | 149                                 | °C                | ISO 11357-2, ASTM D3418                  |
| Vicat Softening Temperature             |                                     |                   |                                          |
| --                                      | 147                                 | °C                | ASTM D1525, ISO 306/B50 7 <sup>11</sup>  |
| --                                      | 153                                 | °C                | ASTM D1525, ISO 306/A120 8 <sup>12</sup> |
| CLTE - Flow (-40 to 82°C)               | 6.8E-5                              | cm/cm/°C          | ASTM D696                                |
| Flammability                            | Nominal Value                       |                   | Test Method                              |
| Flame Rating <sup>13</sup>              |                                     |                   | UL 94                                    |
| 1.50 mm                                 | HB                                  |                   |                                          |
| 3.00 mm                                 | HB                                  |                   |                                          |
| Optical                                 | Nominal Value                       | Unit              | Test Method                              |
| Refractive Index                        | 1.586                               |                   | ASTM D542, ISO 489                       |
| Transmittance                           | 86.0 to 90.0                        | %                 | ASTM D1003                               |
| Haze                                    | 1.0                                 | %                 | ASTM D1003                               |
| NOTE                                    |                                     |                   |                                          |
| 1.                                      | 50 mm/min                           |                   |                                          |
| 2.                                      | 50 mm/min                           |                   |                                          |
| 3.                                      | 50 mm/min                           |                   |                                          |
| 4.                                      | 50 mm/min                           |                   |                                          |
| 5.                                      | 50 mm/min                           |                   |                                          |
| 6.                                      | Method I (3 point load), 2.0 mm/min |                   |                                          |
| 7.                                      | 2.0 mm/min                          |                   |                                          |

|     |                                                                                                                   |
|-----|-------------------------------------------------------------------------------------------------------------------|
| 8.  | Method I (3 point load), 2.0 mm/min                                                                               |
| 9.  | 2.0 mm/min                                                                                                        |
| 10. | CS10F Wheel, 250 g, 300 cycles                                                                                    |
| 11. | Rate A (50°C/h), Loading 2 (50 N)                                                                                 |
| 12. | Rate B (120°C/h), Loading 1 (10 N)                                                                                |
| 13. | This rating not intended to reflect hazards presented by this or any other material under actual fire conditions. |

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