



## CALIBRE™ 301-10

Trinseo - Polycarbonate Resin

Tuesday, November 5, 2019

### General Information

#### Product Description

CALIBRE™ 300-10 Polycarbonate resins offer exceptional impact resistance, heat distortion resistance, and optical clarity. The CALIBRE 300-10 series products are available in 4 additive packages: CALIBRE 300: No mold release or UV Stabilizer. CALIBRE 301: Mold release. CALIBRE 302: UV stabilizer. CALIBRE 303: Mold release and UV stabilizer

Govt. and Industry Standards:

- CSA (Canadian Standards Association)
- Underwriters Laboratory, Inc. (UL)

Applications:

- Appliances
- Storage media housings
- Business equipment
- Electrical components
- Lighting
- Transportation
- Houseware
- Recreation
- Packaging applications

#### General

|                   |                                      |                          |                   |
|-------------------|--------------------------------------|--------------------------|-------------------|
| Material Status   | • Commercial: Active                 |                          |                   |
| Availability      | • Europe                             | • Latin America          | • North America   |
| Additive          | • Mold Release                       |                          |                   |
| Features          | • High Clarity                       | • High Impact Resistance |                   |
| Uses              | • Appliances                         | • Household Goods        | • Packaging       |
|                   | • Business Equipment                 | • Housings               |                   |
|                   | • Electrical/Electronic Applications | • Lighting Applications  |                   |
| Agency Ratings    | • CSA Unspecified Rating             |                          |                   |
| Forms             | • Pellets                            |                          |                   |
| Processing Method | • Film Extrusion                     | • Injection Molding      | • Sheet Extrusion |

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

| Physical                                     | Nominal Value | Unit                   | Test Method           |
|----------------------------------------------|---------------|------------------------|-----------------------|
| Density                                      | 1.20          | g/cm <sup>3</sup>      | ISO 1183/B            |
| Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)     | 10            | g/10 min               | ISO 1133              |
| Melt volume-flow rate (300°C/1.2 kg)         | 9.00          | cm <sup>3</sup> /10min | ISO 1133 <sup>2</sup> |
| Molding Shrinkage - Flow                     | 0.50 to 0.70  | %                      | ISO 294-4             |
| Water Absorption (24 hr, 73°F)               | 0.15          | %                      | ISO 62                |
| Water Absorption (Equilibrium, 73°F, 50% RH) | 0.32          | %                      | ISO 62                |
| Mechanical                                   | Nominal Value | Unit                   | Test Method           |
| Tensile Modulus                              | 334000        | psi                    | ISO 527-2/50          |
| Tensile Stress (Yield)                       | 8700          | psi                    | ISO 527-2/50          |
| Tensile Stress (Break)                       | 10300         | psi                    | ISO 527-2/50          |
| Tensile Strain (Yield)                       | 6.0           | %                      | ISO 527-2/50          |

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| Mechanical                                         | Nominal Value | Unit                  | Test Method    |
|----------------------------------------------------|---------------|-----------------------|----------------|
| Tensile Strain (Break)                             | 150           | %                     | ISO 527-2/50   |
| Flexural Modulus <sup>3</sup>                      | 348000        | psi                   | ISO 178        |
| Flexural Stress <sup>3</sup>                       | 14100         | psi                   | ISO 178        |
| Taber Abrasion Resistance                          | 45            | %                     | ISO 9352       |
| Impact                                             | Nominal Value | Unit                  | Test Method    |
| Charpy Notched Impact Strength                     |               |                       | ISO 179/1eA    |
| -22°F                                              | 6.2           | ft·lb/in <sup>2</sup> |                |
| 73°F                                               | 17            | ft·lb/in <sup>2</sup> |                |
| Notched Izod Impact Strength (73°F)                | 43            | ft·lb/in <sup>2</sup> | ISO 180/A      |
| Hardness                                           | Nominal Value | Unit                  | Test Method    |
| Rockwell Hardness                                  |               |                       | ISO 2039-2     |
| M-Scale                                            | 73            |                       |                |
| R-Scale                                            | 118           |                       |                |
| Thermal                                            | Nominal Value | Unit                  | Test Method    |
| Heat Deflection Temperature (66 psi, Annealed)     | 291           | °F                    | ISO 75-2/B     |
| Heat Deflection Temperature (264 psi, Unannealed)  | 257           | °F                    | ISO 75-2/A     |
| Heat Deflection Temperature (264 psi, Annealed)    | 286           | °F                    | ISO 75-2/A     |
| Vicat Softening Temperature                        | 300           | °F                    | ISO 306/B50    |
| Ball Indentation Temperature                       | > 257         | °F                    | IEC 60335-1    |
| CLTE - Flow                                        | 3.9E-5        | in/in/°F              | ISO 11359-2    |
| Electrical                                         | Nominal Value | Unit                  | Test Method    |
| Volume Resistivity                                 | > 1.0E+15     | ohms·cm               | IEC 60093      |
| Electric Strength                                  | 430           | V/mil                 | IEC 60243-1    |
| Dielectric Constant                                |               |                       | IEC 60250      |
| 60 Hz                                              | 3.00          |                       |                |
| 1 MHz                                              | 3.00          |                       |                |
| Relative Permittivity                              |               |                       | IEC 60250      |
| 100 Hz                                             | 3.00          |                       |                |
| 1 MHz                                              | 3.00          |                       |                |
| Dissipation Factor                                 |               |                       | IEC 60250      |
| 50 Hz                                              | 1.0E-3        |                       |                |
| 1 MHz                                              | 2.0E-3        |                       |                |
| Comparative Tracking Index (0.0787 in, Solution A) | 250           | V                     | IEC 60112      |
| Flammability                                       | Nominal Value | Unit                  | Test Method    |
| Flame Rating <sup>4</sup>                          |               |                       | UL 94          |
| 0.12 in                                            | HB            |                       |                |
| 0.030 in                                           | V-2           |                       |                |
| 0.06 in                                            | V-2           |                       |                |
| Glow Wire Flammability Index <sup>4</sup>          |               |                       | IEC 60695-2-12 |
| 0.04 in                                            | 1650          | °F                    |                |
| 0.08 in                                            | 1610          | °F                    |                |
| 0.12 in                                            | 1610          | °F                    |                |
| Glow Wire Ignition Temperature <sup>4</sup>        |               |                       | IEC 60695-2-13 |
| 0.04 in                                            | 1470          | °F                    |                |
| 0.08 in                                            | 1430          | °F                    |                |
| 0.12 in                                            | 1430          | °F                    |                |
| Oxygen Index <sup>4</sup>                          | 26            | %                     | ISO 4589-2     |

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| Optical          | Nominal Value | Unit | Test Method |
|------------------|---------------|------|-------------|
| Refractive Index | 1.586         |      | ISO 489     |
| Transmittance    | 89.0          | %    | ASTM D1003  |
| Haze             | 1.00          | %    | ASTM D1003  |

### Notes

- <sup>1</sup> Typical properties: these are not to be construed as specifications.
- <sup>2</sup> Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
- <sup>3</sup> 0.079 in/min
- <sup>4</sup> This rating not intended to reflect hazards presented by this or any other material under actual fire conditions.