

Styron CALIBRE® 300EP 22 Polycarbonate, General Purpose

Category : Polymer , Thermoplastic , Polycarbonate (PC) , Polycarbonate, Unreinforced, Flame Retardant

Material Notes:

CALIBRE® 300EP series resins are general purpose polycarbonate resins and can be supplied with a mold release package, a UV stabilizer package or both. CALIBRE 300EP resins exhibit an excellent physical property balance of heat resistance, transparency and impact strength. The CALIBRE 300EP resins have a UL-94 rating of V-2(1). In addition the high melt flow rate allows complex parts to be easily molded. The CALIBRE 300EP series resins are typically used for appliances, storage media housings, electrical components and lighting. Available Melt Flow Rate: 22. Associated products: CALIBRE 300EP: without a mold release and UV stabilization package CALIBRE 301EP: including a mold release package CALIBRE 302EP: including a UV stabilizer package CALIBRE 303EP: including a mold release and UV stabilizer package. (1) These numerical flame spread ratings are small scale test values and are not intended to reflect hazards presented by these or any other materials under actual fire conditions. Ignition resistant chemical additives increase resistance to burning from minor flame sources and permit properly manufactured end products to meet the requirements of certain flammability tests, but resins will burn rapidly under the right conditions of heat and oxygen feed. Data provided by Dow Chemical. This product line was spun off from Dow Chemical to Styron in 2010.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Styron-CALIBRE-300EP-22-Polycarbonate-General-Purpose.php

| Physical Properties | Metric | English | Comments |
|------------------------------------|---|---|---------------------|
| Density | 1.20 g/cc | 0.0434 lb/in ³ | ASTM Data |
| Melt Density | 1.01 g/cc | 0.0365 lb/in ³ | Melt density |
| Water Absorption | 0.15 % | 0.15 % | |
| Moisture Absorption at Equilibrium | 0.32 % | 0.32 % | Humidity Absorption |
| Linear Mold Shrinkage | 0.0060 cm/cm | 0.0060 in/in | |
| Melt Flow | 22 g/10 min @Load 1.20 kg, Temperature 300 °C | 22 g/10 min @Load 2.65 lb, Temperature 572 °F | ASTM Data |

| Mechanical Properties | Metric | English | Comments |
|----------------------------|----------|----------|-----------|
| Hardness, Rockwell R | 118 | 118 | |
| Tensile Strength, Ultimate | 65.5 MPa | 9500 psi | ASTM Data |
| Tensile Strength, Yield | 62.1 MPa | 9010 psi | ASTM Data |
| Elongation at Break | 120 % | 120 % | ASTM Data |
| Elongation at Yield | 6.0 % | 6.0 % | ISO Data |
| Tensile Modulus | 2.34 GPa | 339 ksi | ASTM Data |

| Mechanical Properties | Metric | English | Comments |
|-------------------------|-----------------------------------|------------------------------------|--------------------------------|
| Izod Impact, Unnotched | NB | NB | ASTM Data |
| Charpy Impact Unnotched | NB | NB | ISO Data |
| | NB | NB | ISO Data, Low Temp |
| Charpy Impact, Notched | 1.10 J/cm ² | 5.24 ft-lb/in ² | ISO Data, Low Temp |
| | 7.00 J/cm ² | 33.3 ft-lb/in ² | ISO Data |
| Tensile Impact Strength | 378 kJ/m ² | 180 ft-lb/in ² | ASTM Data |
| Impact Test | 72.3 J @Temperature 23.0 °C | 53.3 ft-lb @Temperature 73.4 °F | Instrumented Dart Total Energy |

| Thermal Properties | Metric | English | Comments |
|--|---|--|-----------------------|
| CTE, linear, Parallel to Flow | 68.4 μm/m-°C @Temperature 20.0 °C | 38.0 μin/in-°F @Temperature 68.0 °F | ASTM data |
| Specific Heat Capacity | 1.96 J/g-°C | 0.468 BTU/lb-°F | |
| Thermal Conductivity | 0.207 W/m-K | 1.44 BTU-in/hr-ft ² - °F | |
| Deflection Temperature at 1.8 MPa (264 psi) | 126 °C | 259 °F | Unannealed; ASTM Data |
| Vicat Softening Point | 152 °C | 306 °F | |
| Flammability, UL94 | V-2 @Thickness 3.20 mm | V-2 @Thickness 0.126 in | |
| Oxygen Index | 26 % | 26 % | |

| Optical Properties | Metric | English | Comments |
|-----------------------|--------|---------|----------|
| Haze | 1.1 % | 1.1 % | |
| Transmission, Visible | 89 % | 89 % | |

| Electrical Properties | Metric | English | Comments |
|------------------------|--------------------------|--------------------------|-----------|
| Electrical Resistivity | 2.00e+17 ohm-cm | 2.00e+17 ohm-cm | ASTM Data |
| Dielectric Constant | 2.93 @Frequency 60 Hz | 2.93 @Frequency 60 Hz | ASTM Data |

| Electrical Properties | Metric | English | Comments |
|-----------------------|--------------------|--------------------|-----------|
| | @Frequency 1e+6 Hz | @Frequency 1e+6 Hz | ASTM Data |
| Dielectric Strength | 16.5 kV/mm | 419 kV/in | |
| Dissipation Factor | 0.00050 | 0.00050 | |
| | @Frequency 60 Hz | @Frequency 60 Hz | |
| | 0.0017 | 0.0017 | ASTM Data |
| | @Frequency 1e+6 Hz | @Frequency 1e+6 Hz | |

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