

## PTS Tristar® PC-10R-(22) 22 MFI Polycarbonate With Release

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

### Material Notes:

Information provided by Polymer Technology and Services, LLC (PTS).

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_PTS-Tristar-PC-10R-22-22-MFI-Polycarbonate-With-Release.php](http://www.lookpolymers.com/polymer_PTS-Tristar-PC-10R-22-22-MFI-Polycarbonate-With-Release.php)

| Physical Properties | Metric                                              | English                                             | Comments                    |
|---------------------|-----------------------------------------------------|-----------------------------------------------------|-----------------------------|
| Density             | 1.20 g/cc                                           | 0.0434 lb/in <sup>3</sup>                           | ASTM D792                   |
| Water Absorption    | 0.15 %                                              | 0.15 %                                              | 24 hours at 73°F; ASTM D570 |
| Melt Flow           | 22 g/10 min<br>@Load 1.20 kg,<br>Temperature 300 °C | 22 g/10 min<br>@Load 2.65 lb,<br>Temperature 572 °F | ASTM D1238                  |

| Mechanical Properties   | Metric                          | English                              | Comments  |
|-------------------------|---------------------------------|--------------------------------------|-----------|
| Hardness, Rockwell R    | 120                             | 120                                  | ASTM D785 |
| Tensile Strength, Yield | 60.3 MPa<br>@Thickness 3.17 mm  | 8750 psi<br>@Thickness 0.125 in      | ASTM D638 |
| Elongation at Break     | 100 %<br>@Thickness 3.17 mm     | 100 %<br>@Thickness 0.125 in         | ASTM D638 |
| Flexural Yield Strength | 89.6 MPa<br>@Thickness 3.17 mm  | 13000 psi<br>@Thickness 0.125 in     | ASTM D790 |
| Flexural Modulus        | 2.21 GPa<br>@Thickness 3.17 mm  | 321 ksi<br>@Thickness 0.125 in       | ASTM D790 |
| Izod Impact, Notched    | 6.94 J/cm<br>@Thickness 3.17 mm | 13.0 ft-lb/in<br>@Thickness 0.125 in | ASTM D256 |

| Thermal Properties              | Metric                                          | English                                          | Comments     |
|---------------------------------|-------------------------------------------------|--------------------------------------------------|--------------|
| CTE, linear, Parallel to Flow   | 70.2 µm/m-°C<br>@Temperature -40.0 -<br>95.0 °C | 39.0 µin/in-°F<br>@Temperature -40.0 -<br>203 °F | ASTM E831-06 |
| CTE, linear, Transverse to Flow | 68.4 µm/m-°C<br>@Temperature -40.0 -<br>95.0 °C | 38.0 µin/in-°F<br>@Temperature -40.0 -<br>203 °F | ASTM E831-06 |

| Thermal Properties<br><small>Deflection Temperature at 1.8 MPa<br/>(100 psi)</small> | Metric<br><small>132 °C</small> | English<br><small>270 °F</small> | Comments<br><small>ASTM D648</small> |
|--------------------------------------------------------------------------------------|---------------------------------|----------------------------------|--------------------------------------|
|                                                                                      | 137 °C                          | 279 °F                           | ISO 75                               |
| UL RTI, Electrical                                                                   | 125 °C                          | 257 °F                           |                                      |
| UL RTI, Mechanical with Impact                                                       | 115 °C                          | 239 °F                           |                                      |
| UL RTI, Mechanical without Impact                                                    | 125 °C                          | 257 °F                           |                                      |
| Flammability, UL94                                                                   | V-2<br>@Thickness 1.50 mm       | V-2<br>@Thickness 0.0591 in      |                                      |
| Glow Wire Test                                                                       | 775 °C                          | 1430 °F                          | GWIT                                 |
|                                                                                      | 960 °C                          | 1760 °F                          | GWFI                                 |

| Electrical Properties                | Metric                              | English                              | Comments |
|--------------------------------------|-------------------------------------|--------------------------------------|----------|
| Arc Resistance                       | 60 - 120 sec                        | 60 - 120 sec                         | PLC 6    |
| Comparative Tracking Index           | 250 - 400 V                         | 250 - 400 V                          | PLC 2    |
| Hot Wire Ignition, HWI               | 15 - 30 sec<br>@Thickness 1.50 mm   | 15 - 30 sec<br>@Thickness 0.0591 in  | PLC 3    |
|                                      | 30 - 60 sec<br>@Thickness 3.00 mm   | 30 - 60 sec<br>@Thickness 0.118 in   | PLC 2    |
| High Amp Arc Ignition, HAI           | 60 - 120 arcs<br>@Thickness 3.00 mm | 60 - 120 arcs<br>@Thickness 0.118 in | PLC 1    |
|                                      | >= 120 arcs<br>@Thickness 1.50 mm   | >= 120 arcs<br>@Thickness 0.0591 in  | PLC 0    |
| High Voltage Arc-Tracking Rate, HVTR | 80.0 - 150 mm/min                   | 3.15 - 5.91 in/min                   | PLC 3    |

| Processing Properties     | Metric         | English      | Comments |
|---------------------------|----------------|--------------|----------|
| Rear Barrel Temperature   | 243 - 260 °C   | 470 - 500 °F |          |
| Middle Barrel Temperature | 249 - 260 °C   | 480 - 500 °F |          |
| Front Barrel Temperature  | 260 - 271 °C   | 500 - 520 °F |          |
| Nozzle Temperature        | 254 - 271 °C   | 490 - 520 °F |          |
| Melt Temperature          | 260 - 282 °C   | 500 - 540 °F |          |
| Mold Temperature          | 71.1 - 93.3 °C | 160 - 200 °F |          |

| Processing Properties | Metric           | English          | Comments      |
|-----------------------|------------------|------------------|---------------|
| Drying Temperature    | 121 °C           | 250 °F           |               |
| Dry Time              | 3 - 4 hour       | 3 - 4 hour       | 48 hours max. |
| Injection Pressure    | 51.7 - 124 MPa   | 7500 - 18000 psi |               |
| Back Pressure         | 0.345 - 1.38 MPa | 50.0 - 200 psi   |               |
| Clamp Pressure        | 27.6 - 68.9 MPa  | 4000 - 10000 psi |               |
| Shot Size             | 40 - 60 %        | 40 - 60 %        |               |
| Screw Speed           | 40 - 70 rpm      | 40 - 70 rpm      |               |

| Descriptive Properties       | Value          | Comments |
|------------------------------|----------------|----------|
| Injection Speed- Edge Gate   | Slow to Medium |          |
| Injection Speed- Tab Gate    | Medium to Fast |          |
| Injection Speed- Tunnel Gate | Fast           |          |

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