



**Product Data Sheet &  
General Processing Conditions**

**RTP 3499-3 X 93110  
Liquid Crystal Polymer (LCP)  
Encapsulation Grade**

**PROPERTIES & AVERAGE VALUES OF INJECTION MOLDED SPECIMENS**

<b>PERMANENCE</b>	<b>English</b>	<b>SI Metric</b>	<b>ASTM TEST</b>
Specific Gravity	1.84	1.84	D 792
Molding Shrinkage 1/8 in (3.2 mm) section	0.0020 in/in	0.20 %	D 955

**MECHANICAL**

Impact Strength, Izod notched 1/8 in (3.2 mm) section	1.5 ft-lbs/in	80 J/m	D 256
unnotched 1/8 in (3.2 mm) section	4.5 ft-lbs/in	240 J/m	D 4812
Tensile Strength	14500 psi	100 MPa	D 638
Tensile Elongation	1.0 - 1.5 %	1.0 - 1.5 %	D 638
Tensile Modulus	2.50 x 10 <sup>6</sup> psi	17238 MPa	D 638
Flexural Strength	24000 psi	165 MPa	D 790
Flexural Modulus	2.40 x 10 <sup>6</sup> psi	16548 MPa	D 790

**THERMAL**

Deflection Temperature @ 264 psi (1820 kPa)	515 °F	268 °C	D 648
@ 66 psi (455 kPa)	535 °F	279 °C	D 648
Coefficient of Linear Thermal Expansion Flow Direction	1.4 x 10 <sup>-5</sup> /°F	2.5 x 10 <sup>-5</sup> /°C	E 831
Transverse Direction	5.0 x 10 <sup>-5</sup> /°F	9.0 x 10 <sup>-5</sup> /°C	E 831

**PROPERTY NOTES**

Data herein is typical and not to be construed as specifications.  
Unless otherwise specified, all data listed is for natural or black colored materials. Pigments can affect properties.

**GENERAL PROCESSING FOR INJECTION MOLDING**

	<b>English</b>	<b>SI Metric</b>
Injection Pressure	12000 - 18000 psi	83 - 124 MPa
Melt Temperature	630 - 690 °F	332 - 366 °C
Mold Temperature	150 - 250 °F	66 - 121 °C
Drying	8 hrs @ 300 °F	8 hrs @ 149 °C
Dew Point	-20 °F	-29 °C

**PROCESSING NOTES**

The key to successfully molding this material is to start mold open cycles as soon as the screw reaches its retracted position.

14 Jun 2016 BXW

This information is intended to be used only as a guideline for designers and processors of modified thermoplastics. Because design and processing is complex, a set solution will not solve all problems. Observation on a "trial and error" basis may be required to achieve desired results.

Data are obtained from specimens molded under carefully controlled conditions from representative samples of the compound described herein. Properties may be materially affected by molding techniques applied and by the size and shape of the item molded. No assurance can be implied that all molded articles will have the same properties as those listed.

No information supplied by RTP Company constitutes a warranty regarding product performance or use. Any information regarding performance or use is only offered as suggestion for investigation for use, based upon RTP Company or other customer experience. RTP Company makes no warranties,

expressed or implied, concerning the suitability or fitness of any of its products for any particular purpose. It is the responsibility of the customer to determine that the product is safe, lawful and technically suitable for the intended use. The disclosure of information herein is not a license to operate under, or a recommendation to infringe any patents.

RTP COMPANY • 580 EAST FRONT STREET • WINONA, MN 55987 • 507-454-6900