

**H T****L T****HIGH TEMPERATURE LIGHT TRANSMISSIBLE THERMOPLASTICS & ADDITIVES****HTLT™ 1073 XT Thermoplastic**

HTLT 1073 XT resin is a transparent, organic/inorganic, amorphous thermoplastic. It is a tough, impact resistant, high-temperature thermoplastic that can be injection molded with precision detail. The HTLT 1073 XT has an index of refraction of 1.55, high visible light transmission and a sustained operating temperature up to 150<sup>0</sup> C. Given its high glass transition temperature, optical lens parts are suitable for use in solder reflow processes including lead-free solder reflow applications up to 270<sup>0</sup> C oven air temperatures. For lead free solder reflow use, consult with a Suncolor representative. The HTLT 1073 XT has been formulated to optimize thermal, photolytic, and hydrolytic oxidation resistance. **HTLT 1073 XT is differentiated from other HTLT grades by the incorporation of thermally conductive particles that contribute to uniform stress relief and dimensional stability.**

**PROPERTY\*:**

Specific Gravity, g/cc  
 Melt Temperature, °C \*\*  
 Melt Flow @ 330°C (626 F), 2.16 kg, (ASTM D 1238)  
 Glass Transition Temperature (°C):  
     (°C) (DMTA)(2<sup>0</sup>/min. ramp)  
     (°C) (DMTA)(4<sup>0</sup>/min. ramp/est.)  
 Mold Shrinkage (%)  
 Coefficient of Linear Thermal Expansion  
 flow/cross flow, ASTM D 696 in/in/°F  
 Ball Indentation Hardness (ISO 2039-1)  
 Unnotched Izod Impact (23<sup>0</sup> C, 3.18 mm, ASTM D256)  
 Tensile Elongation @ break, %  
 Tensile Elongation @ yield, %  
 Tensile Modulus (1 mm/min; ASTM 638 lb/in<sup>2</sup>)  
 UL94 Flame Class (UL 94, Class, 1.5 mm thickness)  
 Water Absorption, 24 hour immersion  
 85/85 (85 % r.h & 85<sup>0</sup> C, 1000 hrs.)

**HTLT 1073 XT**

1.12  
 > 300 (572 F)  
 4.0-6.0 (g/10 min.)  
 230<sup>0</sup>  
 265<sup>0</sup>  
 270<sup>0</sup>  
 0.9 – 1.0  
 3.9 E-05  
 115 Mpa  
 No Break (J/m)  
 50.0  
 7.0  
 330,000  
 HB  
 < 0.10 %  
 Pass

**Electrical Properties (23<sup>0</sup> C/50 % r.h.):**

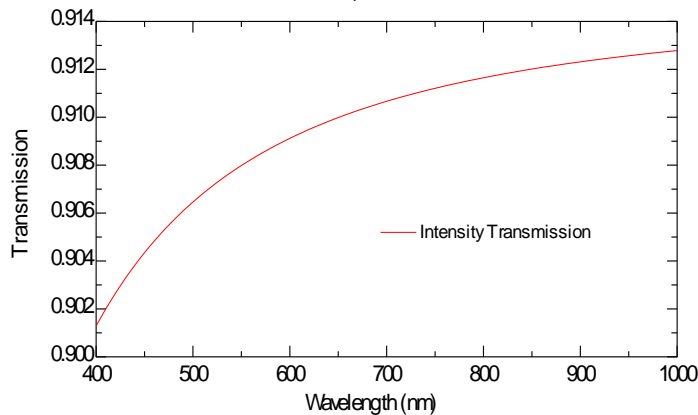
Dissipation Factor, 60 Hz (ASTM D 150) 0.001  
 Tinfoil Electrodes,  
 Volume Resistivity ((ASTM D 257, Ohm\*m) 1.0 E+16  
 Tinfoil Electrodes,  
 Surface Resistivity (ASTM D 257, Ohm) 1.0 E+16  
 Tinfoil Electrodes,  
 Dielectric Constant (ASTM D 150, 60 Hz) 2.9  
 Dielectric Constant (ASTM D 150, 1 MHz) 2.9

\* HTLT 1073 XT thermoplastics property values are approximate/extrapolated in some cases.

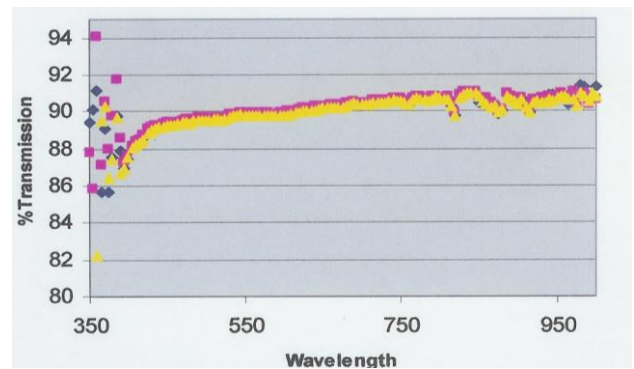
### Typical Optical Properties:

Index of Refraction	1.55
Transmittance (1.0 mm), 585 nm, %	90.3
Luminous Transmittance, Max.Theoretical Value, %	
400 nm	90.1
700 nm	91.0
1000 nm	91.2
Abbe Number	33.5
UV Transmission Cut-Off	360 nm
Haze, 1000 microns thickness	0.6
Yellowness Index/1000 microns (Clear Transparent Material)	0.6

**HTLT THEORETICAL TRANSMISSION**  
(Thin Film/Parallel Sides/Perfect Optical Finish)



**PROJECTED TRANSMISSION (1.0 mm Thick)\***  
(Transmission vs. Wavelength)



### REFRACTIVE INDEX vs. WAVELENGTH (Extrapolated from Actual/589.93 nm/1.5550)

<b>Wavelength (nm)</b>	410.47	435.8	480.39	589.93	643.85
<b>Refractive Index</b>	1.5844	1.5776	1.5685	1.5550	1.5509

### REFRACTIVE INDEX @ 589.3 nm vs. TEMPERATURE (Extrapolated from Actual/20<sup>0</sup>C/1.5550)

<b>Temperature (°C)</b>	-40	-25	0	20	40	60	85	100
<b>Refractive Index</b>	1.5590	1.5579	1.5565	1.5550	1.5530	1.5510	1.5470	1.5454

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