

# Technical Data Sheet

## Tenite™ Propionate 384A4000016 Clear, Trsp

### Application/Uses

- Ophthalmics

### Product Description

Tenite™ cellulosic plastics are noted for their excellent balance of properties - toughness, hardness, strength, surface gloss, clarity, and a warm feel. The mechanical properties of Tenite™ cellulosic plastics differ with plasticizer levels. Lower plasticizer content yields a harder surface, higher heat resistance, greater rigidity, higher tensile strength, and better dimensional stability. Higher plasticizer content increases impact strength. Tenite™ cellulosic plastics are available in natural, clear, selected ambers or smoke transparents and black translucent. Color concentrates are available in let-down ratios from 10:1 to 40:1. Tenite™ Cellulose Acetate Propionate 384-16 contains an ultra-violet inhibitor(UVI) and has a plasticizer level of 16%. It is resistant to high temperatures.

### Typical Properties

Property <sup>a</sup>	Test <sup>b</sup> Method	Typical Value, Units <sup>c</sup>
Plasticizer		16%
Specific Gravity	D 792	1.19
<b>Mechanical Properties</b>		
Tensile Stress @ Yield	D 638	26.9 MPa (3900 psi)
Tensile Stress @ Break	D 638	30.3 MPa (4400 psi)
Elongation @ Break	D 638	45%
Flexural Modulus	D 790	1241 MPa (1.80 x 10 <sup>5</sup> psi )
Flexural Yield Strength	D 790	35.2 MPa (5100 psi)
Rockwell Hardness, R Scale	D 785	68
Izod Impact Strength, Notched		
@ 23°C (73°F)	D 256	>533 J/m (>10 ft·lbf/in.)
@ -40°C (-40°F)	D 256	123 J/m (2.3 ft·lbf/in.)
<b>Thermal Properties</b>		
Deflection Temperature <sup>d</sup>		
@ 1.82 MPa (264 psi)	D 648	72°C (162°F)
@ 0.455 MPa (66 psi)	D 648	80°C (176°F)
Vicat Softening Temperature <sup>d</sup>	D 1525	92°C (198°F)

### Permanence Properties

Water Absorption, 24 h immersion	D 570	1.4%
Soluble Matter Loss	D 570	0.1%
Weight Loss on Heating [72 hours @ 80°C (176°F)]	D 1562	1.3%

### Miscellaneous Propionate Properties

Refractive Index, $n_D$	D 542	1.46-1.49
Light Transmission <sup>e</sup>	E 308	>90%
Haze <sup>e</sup>	D 1003	<8.5%
Specific Heat @ 23°C (73°F)	DSC	1.26-1.67 kJ/kg·K (0.301-0.399 Btu/lb·°F)
Thermal Conductivity	C 177	0.17-0.33 W/m·K (1.2-2.3 Btu·in./h·ft <sup>2</sup> ·°F )
Coefficient of Linear Thermal Expansion	D 696	11-17 x 10 <sup>-5</sup> /°C (mm/mm·°C) (6-9 x 10 <sup>-5</sup> /°F (in./in.·°F))
Mold Shrinkage	D 955	0.2-0.6%
Dielectric Strength	D 149	11.8-18.7 kV/mm (300-475 V/mil)
Dielectric Constant 1 MHz	D 150	3.3-3.8
Dissipation Factor 1 MHz	D 150	0.01-0.15
Volume Resistivity	D 257	10 <sup>13</sup> -10 <sup>15</sup> ohm·cm

<sup>a</sup> Unless noted otherwise, all tests are run at 23°C (73°F) and 50% relative humidity.

<sup>b</sup> Unless noted otherwise, the test method is ASTM.

<sup>c</sup> Units are in SI or US customary units.

<sup>d</sup> Conditioned 4 hours @ 70°C (158°F)

<sup>e</sup> 1.52-mm (0.06-in.) thickness

### Characteristics

Formula 384 - UVI

### Comments

Properties reported here are typical of average lots. Eastman makes no representation that the material in any particular shipment will conform exactly to the values given.

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