

## Product Data Sheet

### Tenite™ Propionate 381E4000015 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 381-15 contains an ultra-violet inhibitor(UVI) and has a plasticizer level of 15%. It is resistant to high temperatures.

#### Typical Properties

Property <sup>a</sup>	Test <sup>b</sup> Method	Typical Value, Units <sup>c</sup>
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Plasticizer		15%
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Specific Gravity	D 792	1.19
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#### Mechanical Properties

Tensile Stress @ Yield	D 638	26.9 MPa (3900 psi)
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Tensile Stress @ Break	D 638	31.0 MPa (4500 psi)
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Elongation @ Break	D 638	35%
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Flexural Modulus	D 790	1344 MPa (1.95 x 10 <sup>5</sup> psi )
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Flexural Yield Strength	D 790	35.2 MPa (5100 psi)
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Rockwell Hardness, R Scale	D 785	72
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Izod Impact Strength, Notched		
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@ 23°C (73°F)	D 256	443 J/m (8.3 ft·lbf/in.)
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@ -40°C (-40°F)	D 256	96 J/m (1.8 ft·lbf/in.)
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#### Thermal Properties

Deflection Temperature <sup>d</sup>		
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@ 1.82 MPa (264 psi)	D 648	71°C (160°F)
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@ 0.455 MPa (66 psi)	D 648	80°C (176°F)
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Permanence Properties		
Water Absorption, 24 h immersion	D 570	1.5%
Soluble Matter Loss	D 570	0.1%
Weight Loss on Heating [72 hours @ 80°C (176°F)]	D 1562	0.7%
Miscellaneous Propionate Properties		
Refractive Index, n <sub>D</sub>	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 381 - 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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