

## Product Data Sheet

### Tenite™ Acetate 105E2R30025, Natural, Trsp

#### Application/Uses

- Ophthalmics
- Tool handles
- Toys/Sporting goods

#### 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, amber, and black. Color concentrates are available in let-down ratios from 10:1 to 40:1. Tenite™ Cellulose Acetate 105-25 is heat stabilized and has a plasticizer level of 25%.

#### Typical Properties

Property <sup>a</sup>	Test <sup>b</sup> Method	Typical Value, Units <sup>c</sup>
Plasticizer		25%
Specific Gravity	D 792	1.28
<b>Mechanical Properties</b>		
Tensile Stress @ Yield	D 638	37.2 MPa (5400 psi)
Tensile Stress @ Break	D 638	40.7 MPa (5900 psi)
Elongation @ Break	D 638	25%
Flexural Modulus	D 790	2344 MPa (3.4 x 10 <sup>5</sup> psi )
Flexural Yield Strength	D 790	62.7 MPa (9100 psi)
Rockwell Hardness, R Scale	D 785	90
Izod Impact Strength, Notched		
@ 23°C (73°F)	D 256	160 J/m (3.0 ft·lbf/in.)
@ -40°C (-40°F)	D 256	48 J/m (0.9 ft·lbf/in.)
<b>Thermal Properties</b>		
Deflection Temperature <sup>d</sup>		
@ 1.82 MPa (264 psi)	D 648	77°C (171°F)
@ 0.455 MPa (66 psi)	D 648	86°C (187°F)

Vicat Softening Temperature <sup>d</sup>

D 1525

113°C (235°F)

**Permanence Properties**

Water Absorption, 24 h immersion	D 570	2.3%
Soluble Matter Loss	D 570	0.2%
Weight Loss on Heating [72 hours @ 80°C (176°F)]	D 706	1.2%

**Miscellaneous Acetate 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.) specimen thickness**Characteristics**

Formula 105 - heat stabilized.

**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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