Product Data Sheet

Tenite™ Acetate 105E1R26029 Clear, 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 105-29 is heat stabilized and has a plasticizer level of 29%.

Typical Properties

Property[a]	Test[b] Method	Typical Value, Units[c]
Plasticizer		29%
Specific Gravity	D 792	1.27
Mechanical Properties		
Tensile Stress @ Yield	D 638	29.6 MPa (4300 psi)
Tensile Stress @ Break	D 638	33.1 MPa (4800 psi)
Elongation @ Break	D 638	30%
Flexural Modulus	D 790	1931 MPa (2.8 x 10^5 psi)
Flexural Yield Strength	D 790	46.9 MPa (6800 psi)
Rockwell Hardness, R Scale	D 785	71
Izod Impact Strength, Notched		
@ 23°C (73°F)	D 256	203 J/m (3.8 ft·lbf/in.)
@ -40°C (-40°F)	D 256	53 J/m (1.0 ft·lbf/in.)
Thermal Properties		
Deflection Temperature [d]		
@ 1.82 MPa (264 psi)	D 648	68°C (154°F)
@ 0.455 MPa (66 psi)	D 648	79°C (174°F)

Vicat Softening Temperature [d]	D 1525	105°C (221°F)

Permanence Properties		
Water Absorption, 24 h immersion	D 570	2.3%
Soluble Matter Loss	D 570	0.4%
Weight Loss on Heating [72 hours @ 80°C (176°F)]	D 706	2.6%

Miscellaneous Acetate Properties		
Refractive Index, n_D	D 542	1.46-1.49
Light Transmission [e]	E 308	>90%
Haze [e]	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^2·°F)
Coefficient of Linear Thermal Expansion	D 696	11-17 x 10^{-5} /°C (mm/mm·°C) (6-9 x 10^{-5} /°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^{13}-10^{15} ohm·cm

[a] *Unless noted otherwise, all tests are run at 23°C (73°F) and 50% relative humidity.*

[b] *Unless noted otherwise, the test method is ASTM.*

[c] *Units are in SI or US customary units.*

[d] *Conditioned 4 hours @ 70°C (158°F)*

[e] *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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