

Technical Data Sheet

Tenite™ Propionate 358A4000018 Clear Trsp

Applications

- 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 358-18 has a plasticizer level of 18%.

Typical Properties

Property ^a	Test Method ^b	Typical Value, Units ^c
General		
Plasticizer		18 %
Specific Gravity	D 792	1.19
Mechanical Properties		
Tensile Stress @ Yield	D 638	22.1 MPa (3200 psi)
Tensile Stress @ Break	D 638	27.6 MPa (4000 psi)
Elongation @ Break	D 638	35 %
Flexural Modulus	D 790	1172 MPa (1.70 x 10 ⁵ psi)
Flexural Yield Strength	D 790	29.0 MPa (4200 psi)
Rockwell Hardness, R Scale	D 785	55
Izod Impact Strength, Notched		
@ 23°C (73°F)	D 256	523 J/m (9.8 ft·lbf/in.)
@ -40°C (-40°F)	D 256	107 J/m (2.0 ft·lbf/in.)
Miscellaneous Propionate 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
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	1.0 %
Thermal Properties		
Deflection Temperature ^d		
@ 0.455 MPa (66 psi)	D 648	77 °C (171 °F)
@ 1.82 MPa (264 psi)	D 648	67 °C (153 °F)
Vicat Softening Temperature ^d	D 1525	87 °C (189 °F)

^aUnless noted otherwise, all tests are run at 23°C (73°F) and 50% relative humidity.

^bUnless noted otherwise, the test method is ASTM.

^cUnits are in SI or US customary units.

^dConditioned 4 hours @ 70°C (158°F)

^e1.52-mm (0.06-in.) thickness

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.

Characteristics

Formula 358 - base

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