

Product Data Sheet

Tenite™ Propionate 307E4000018 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™ Cellulosic Acetate Propionate 307-18 has a plasticizer level of 18%.

Typical Properties

Property ^a	Test ^b Method	Typical Value, Units ^c
-----------------------	-----------------------------	-----------------------------------

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.)
-----------------	-------	--------------------------

Thermal Properties

Deflection Temperature ^d		
-------------------------------------	--	--

@ 1.82 MPa (264 psi)	D 648	67°C (153°F)
----------------------	-------	--------------

@ 0.455 MPa (66 psi)	D 648	77°C (171°F)
----------------------	-------	--------------

Vicat Softening Temperature ^d	D 1525	87°C (189°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	1.0%
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

^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.) thickness

Characteristics

Formula 307 - 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.

Eastman and its marketing affiliates shall not be responsible for the use of this information, or of any product, method, or apparatus mentioned, and you must make your own determination of its suitability and completeness for your own use, for the protection of the environment, and for the health and safety of your employees and purchasers of your products. No warranty is made of the merchantability of fitness of any product, and nothing herein waives any of the Seller's conditions of sale.

20-Sep-2000 10:54:00 AM