



Technical Data Sheet

Tenite™ Propionate 377E4861312 Clear, Trsp

Application/Uses

- Packaging
- POP (Point of Purchase)
- Profiles
- Tubing

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 377-12 has a plasticizer level of 12%. It meets FDA requirements for certain food-contact applications when supplied in specific FDA color numbers.

Typical Properties

| Property ^a | Test ^b Method | Typical Value, Units ^c |
|-----------------------|--------------------------|-----------------------------------|
| Plasticizer | | 12% |
| Specific Gravity | D 792 | 1.20 |

Mechanical Properties

| | | |
|-------------------------------|-------|--|
| Tensile Stress @ Yield | D 638 | 31.7 MPa (4600 psi) |
| Tensile Stress @ Break | D 638 | 33.1 MPa (4800 psi) |
| Elongation @ Break | D 638 | 45% |
| Flexural Modulus | D 790 | 1448 MPa (2.10 x 10 ⁵ psi) |
| Flexural Yield Strength | D 790 | 41.4 MPa (6000 psi) |
| Rockwell Hardness, R Scale | D 785 | 78 |
| Izod Impact Strength, Notched | | |
| @ 23°C (73°F) | D 256 | 416 J/m (7.8 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 | 75°C (167°F) |
| @ 0.455 MPa (66 psi) | D 648 | 83°C (181°F) |
| Vicat Softening Temperature ^d | D 1525 | 96°C (205°F) |

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 0.4%

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 377 - standard inventory. Complies with FDA food contact regulations when supplied in FDA color numbers. Available in 12% plasticizer only.

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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