



# Technical Data Sheet Tenite™ Butyrate 485A2R30016 Natural

### **Applications**

- · Sporting equipment
- Tools

# **Product Description**

Tenite<sup>™</sup> 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<sup>™</sup> 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<sup>™</sup> cellulosic plastics are available in natural, clear, selected ambers, or smoke transparents and black translucents. Color concentrates are available in let-down ratios from 10:1 to 40:1. Tenite<sup>™</sup> Cellulose Acetate Butyrate 485-16 contains an odor mask and an ultra-violet inhibitor(UVI). It has a plasticizer level of 16%.

# **Typical Properties**

| Property <sup>a</sup>            | Test Method <sup>b</sup> | Typical Value, Units <sup>C</sup>            |
|----------------------------------|--------------------------|--|
| General                          |                          |  |
| Plasticizer                      |                          | 16 %   |
| Specific Gravity                 | D 792                    | 1.17   |
| Mechanical Properties            |                          |  |
| Tensile Stress @ Yield           | D 638                    | 25.5 MPa (3700 psi)                          |
| Tensile Stress @ Break           | D 638                    | 33.8 MPa (4900 psi)                          |
| Elongation @ Break               | D 638                    | 50 %   |
| Flexural Modulus                 | D 790                    | 1103 MPa (1.60 x 10 <sup>5</sup> psi)        |
| Flexural Yield Strength          | D 790                    | 33.1 MPa (4800 psi)                          |
| Rockwell Hardness, R Scale       | D 785                    | 40   |
| Izod Impact Strength, Notched    |                          |  |
| @ 23°C (73°F)                    | D 256                    | 331 J/m (6.2 ft·lbf/in.)                     |
| @ -40°C (-40°F)                  | D 256                    | 107 J/m (2.0 ft·lbf/in.)                     |
| Miscellaneous Butyrate Prope     | rties                    |  |
| 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<br>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    | D 696                    | 11-17 x 10 <sup>-5</sup> /°C (mm/mm⋅°C) (6-9 |
| Expansion                        |                          | 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    |

| Permanence Properties                    |        |                |
|--|--------|----------------|
| Water Absorption, 24 h immersion         | D 570  | 1.3 %          |
| Soluble Matter Loss                      | D 570  | 0.1 %          |
| Weight Loss on Heating                   |        |                |
| [72 hours @ 80°C (176°F)]                | D 707  | 0.8 %          |
| Thermal Properties                       |        |                |
| Deflection Temperature <sup>d</sup>      |        |                |
| @ 0.455 MPa (66 psi)                     | D 648  | 77 °C (171 °F) |
| @ 1.82 MPa (264 psi)                     | D 648  | 64 °C (147 °F) |
| Vicat Softening Temperature <sup>d</sup> | D 1525 | 96 °C (205 °F) |

<sup>&</sup>lt;sup>a</sup>Unless noted otherwise, all tests are run at 23°C (73°F) and 50% relative humidity.

#### **Characteristics**

Formula 485 - odor mask; 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.

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3/27/2018 9:12:00 AM

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<sup>&</sup>lt;sup>b</sup>Unless noted otherwise, the test method is ASTM.

<sup>&</sup>lt;sup>c</sup>Units are in SI or US customary units.

dConditioned 4 hours @ 70°C (158°F)

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