EASTMAN

# Technical Data Sheet

## Eastman TREVA™ Engineering Bioplastic GC6011NAT Natural

## Applications

- Color cosmetics packaging
- Personal care & cosmetics packaging
- Personal care packaging

## Key Attributes

- BPA-free
- Dimensional stability
- Excellent chemical resistance
- Excellent flow
- Good clarity
- Low birefringence

## Product Description

Eastman TREVA™ is a cellulose-based engineering bioplastic that offers both high performance and enables exceptional depth of color and high gloss for opaque applications. TREVA is chemically resistant, dimensionally stable and has excellent flow, BPA-free and enables exceptional depth of color and high gloss for opaque applications.

The United States Department of Agriculture's (USDA's) BioPreferred® program has Certified Eastman TREVA™ Engineering Bioplastic GC6011 with a biobased content of 45%.

## Typical Properties

| Property[a] | Test Method[b] | Typical Value, Units[c] |
|---|---|---|
| **General Properties** | | |
| Specific Gravity | D 792 | 1.23 |
| **Mechanical Properties** | | |
| Tensile Stress @ Yield | D 638 | 55 MPa (7919 psi) |
| Tensile Stress @ Break | D 638 | 51 MPa (7353 psi) |
| Elongation @ Break | D 638 | 21 % |
| Flexural Modulus | D 790 | 2160 MPa (3.13 x $10^5$ psi) |
| Rockwell Hardness, R Scale | D 785 | 108 |
| Izod Impact Strength, Notched | | |
| @ 23°C (73°F) | D 256 | 82 J/m (1.54 ft·lbf/in.) |
| @ -40°C (-40°F) | D 256 | 66 J/m (1.22 ft·lbf/in.) |
| **Miscellaneous Properties** | | |
| Mold Shrinkage | D 955 | 0.7 % |
| **Permanence Properties** | | |
| Water Absorption, 24 h immersion | D 570 | 2.3 % |
| **Target Processing Conditions** | | |
| Drying Temperature in a Desiccant Dryer | | 75 °C (170 °F) |
| Drying Time in a Desiccant Dryer | | 4 hours |
| Barrel Set Temperature[e] | | 235 °C (455 °F) |
| Mold Temperature | | 85 °C (185 °F) |
| Injection Speed | | 30 mm/sec (1.2 in./sec) |
| Maximum Barrel Residence Time | | 4 minutes |
| **Thermal Properties** | | |
| Deflection Temperature[d] | | |
| @ 0.455 MPa (66 psi) | D 648 | 116 °C (240 °F) |

| | | |
|---|---|---|
| @ 1.82 MPa (264 psi) | D 648 | 102 °C (215 °F) |
| Vicat Softening Temperature[d] | D 1525 | 131 °C (268 °F) |

[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 at 70°C (158°F).*
[e]*With actual measured melt temperature not to exceed 260°C (500°F).*

## 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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