

## Topas Advanced Polymers TOPAS® 9903D-10 Cyclic Olefin Copolymer (COC)

Category : Polymer , Thermoplastic , Cyclo Olefin Polymer

### Material Notes:

TOPAS® 9903D-10 is a very low glass transition temperature (Tg=33°C) film extrusion grade. It is designed to deliver high shrinkage at low temperatures in shrink packaging applications. It is a moderate clarity amorphous resin with high stiffness, moisture barrier, chemical resistance, thermoformability and purity for food and general purpose applications. It is used in blends in monolayer products, and alone or in blends in multilayer films. It can be used in both cast and blown film processes. The leading film applications are shrink films and labels.

**Key applications and attributes:** Shrink films and labels: High shrink at low temperatures, low stress, toughness Food packaging: Not manufactured with BPA, phthalates, or halogens Food contact: Broad regulatory approval Storage: This grade tends to stick due to its low glass transition temperature. This is also true for parts made thereof. Chilled warehousing is recommended. Information provided by TOPAS Advanced Polymers

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Topas-Advanced-Polymers-TOPAS-9903D-10-Cyclic-Olefin-Copolymer-COC.php](http://www.lookpolymers.com/polymer_Topas-Advanced-Polymers-TOPAS-9903D-10-Cyclic-Olefin-Copolymer-COC.php)

| Physical Properties      | Metric  | English  | Comments            |
|--------------------------|---|--|---------------------|
| Oxygen Permeability      | 1600 cm <sup>3</sup> mil/(m <sup>2</sup> day atm)             | 103 cm <sup>3</sup> mil/(100 in <sup>2</sup> day atm)              |                     |
| Water Vapor Permeability | 7.60 g mil/ (m <sup>2</sup> day)                              | 0.490 g mil/ (100 in <sup>2</sup> day)                             |                     |
| Density                  | 1.02 g/cc   | 0.0368 lb/in <sup>3</sup>  | ISO 1183            |
| Water Vapor Transmission | 0.000190 g/m <sup>2</sup> /day<br>@Temperature 23.0 °C        | 0.0000122 g/100 in <sup>2</sup> /day<br>@Temperature 73.4 °F       | 85% RH; ISO 15106-3 |
| Oxygen Transmission      | 0.0400 cc-mm/m <sup>2</sup> -24hr-atm<br>@Temperature 23.0 °C | 0.102 cc-mil/100 in <sup>2</sup> -24hr-atm<br>@Temperature 73.4 °F | 50% RH              |
| Thickness                | 100 microns   | 3.94 mil   |                     |
| Melt Flow                | 0.92 g/10 min<br>@Load 2.16 kg, Temperature 190 °C            | 0.92 g/10 min<br>@Load 4.76 lb, Temperature 374 °F                 | ISO 1133            |
|                          | 3.7 g/10 min<br>@Load 2.16 kg, Temperature 230 °C             | 3.7 g/10 min<br>@Load 4.76 lb, Temperature 446 °F                  | ISO 1133            |
|                          | 7.4 g/10 min<br>@Load 2.16 kg, Temperature 260 °C             | 7.4 g/10 min<br>@Load 4.76 lb, Temperature 500 °F                  | ISO 1133            |

| Mechanical Properties              | Metric   | English  | Comments       |
|------------------------------------|----------|----------|----------------|
| Film Elongation at Break, MD       | >= 150 % | >= 150 % | ISO 527-3      |
| Film Elongation at Break, TD       | >= 100 % | >= 100 % | ISO 527-3      |
| Tensile Modulus                    | 1.26 GPa | 183 ksi  | Bar; ISO 527-3 |
| Film Tensile Strength at Break, MD | 25.0 MPa | 3630 psi | ISO 527-3      |
| Film Tensile Strength at Break, TD | 22.0 MPa | 3190 psi | ISO 527-3      |

| Thermal Properties        | Metric  | English | Comments            |
|---------------------------|---------|---------|---------------------|
| Glass Transition Temp, Tg | 33.0 °C | 91.4 °F | 10°C/min; ISO 11357 |

| Optical Properties | Metric   | English  | Comments  |
|--------------------|----------|----------|-----------|
| Haze               | <= 1.0 % | <= 1.0 % | ISO 14782 |
| Gloss              | >= 100 % | >= 100 % | 60°       |

| Descriptive Properties | Value | Comments      |
|------------------------|-------|---------------|
| Type of extrusion      | Cast  | Test Specimen |

## Contact Songhan Plastic Technology Co.,Ltd.

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