# EVALCA EVAL® F100 Ethylene Vinyl Alcohol Copolymer Resin (discontinued **)

**Category :** Polymer , Thermoplastic , Ethylene Vinyl Alcohol (EVOH)

**Material Notes:**

32 mol % Ethylene.Data provided by EVALCA. Applications: Melt phase forming. EVOH is used in packaging applications because of its outstanding gas barrier properties.EVAL™ is now produced as a part of the Kuraray product line.

Order this product through the following link:
http://www.lookpolymers.com/polymer_EVALCA-EVAL-F100-Ethylene-Vinyl-Alcohol-Copolymer-Resin-nbspdiscontinued-.php

| Physical Properties | Metric | English | Comments |
|---|---|---|---|
| Density | 1.19 g/cc | 0.0430 lb/in³ | ASTM D1505 |
| Moisture Absorption at Equilibrium | 2.2 % | 2.2 % | Equilibrium at 50% RH |
| | 2.2 % | 2.2 % | 50% RH |
| Water Absorption at Saturation | 8.5 % | 8.5 % | 100% RH |
| Moisture Vapor Transmission | 1.50 cc-mm/m²-24hr-atm | 3.81 cc-mil/100 in²-24hr-atm | 40°C, 90% RH |
| Oxygen Transmission | 0.00800 cc-mm/m²-24hr-atm | 0.0203 cc-mil/100 in²-24hr-atm | 20°C; 65% RH; Permeability increases significantly at higher moisture content. |
| Melt Flow | 0.80 g/10 min<br>@Load 2.16 kg, Temperature 190 °C | 0.80 g/10 min<br>@Load 4.76 lb, Temperature 374 °F | ASTM D1238 |
| | 1.9 g/10 min<br>@Load 2.16 kg, Temperature 210 °C | 1.9 g/10 min<br>@Load 4.76 lb, Temperature 410 °F | ASTM D1238 |

| Mechanical Properties | Metric | English | Comments |
|---|---|---|---|
| Hardness, Rockwell M | 101 | 101 | ASTM D785 |
| Tensile Strength, Ultimate | 74.0 MPa | 10700 psi | 10%/min; ASTM D638 |
| Tensile Strength, Yield | 80.0 MPa | 11600 psi | 10%/min. ASTM D638 |
| Elongation at Break | 130 % | 130 % | 10%/min. ASTM D638 |
| Elongation at Yield | 1.0 % | 1.0 % | 10%/min. ASTM D638 |
| Modulus of Elasticity | 2.60 GPa | 377 ksi | Youngs Modulus, ASTM D638, 10%/min. |
| Flexural Yield Strength | 128 MPa | 18600 psi | Bending Strength; ASTM D790 |
| Flexural Modulus | 4.20 GPa | 609 ksi | Bending Elasticity; ASTM D790 |

| Mechanical Properties | Metric | English | Comments |
|---|---|---|---|
| Izod Impact, Notched | 53.4 J/cm | 1.00 ft-lb/in | ASTM D256 |
| Taber Abrasion, mg/1000 Cycles | 1.2 | 1.2 | ASTM D1175 |

| Thermal Properties | Metric | English | Comments |
|---|---|---|---|
| CTE, linear | 50.0 µm/m-°C | 27.8 µin/in-°F | Below Tg |
| | 110 µm/m-°C | 61.1 µin/in-°F | Above Tg |
| Specific Heat Capacity | 2.40 J/g-°C | 0.574 BTU/lb-°F | |
| Thermal Conductivity | 0.340 W/m-K | 2.36 BTU-in/hr-ft²-°F | For EVAL F101 |
| Melting Point | 183 °C | 361 °F | DSC |
| Deflection Temperature at 0.46 MPa (66 psi) | 100 °C | 212 °F | For EP-F101 |
| Vicat Softening Point | 173 °C | 343 °F | For EP-F101 |
| Glass Transition Temp, Tg | 69.0 °C | 156 °F | Dynamic Viscoelasticity |

| Optical Properties | Metric | English | Comments |
|---|---|---|---|
| Haze | 1.5 % | 1.5 % | Estimated by MatWeb from similar grades |
| Gloss | 90 % | 90 % | Estimated by MatWeb from similar grades |

| Electrical Properties | Metric | English | Comments |
|---|---|---|---|
| Dielectric Constant | 5.5 | 5.5 | Frequency Not Specified |
| Dissipation Factor | 0.21 | 0.21 | Frequency Not Specified |

| Processing Properties | Metric | English | Comments |
|---|---|---|---|
| Melt Temperature | <= 240 °C | <= 464 °F | |

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