

EVALCA EVAL® LC-E105A Ethylene Vinyl Alcohol Copolymer Resin (discontinued **)

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

Material Notes:

44 mol % Ethylene. Data provided by EVALCA. Applications: Cast film, melt phase forming, solid phase pressure forming, tubes, coex coating. 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-LC-E105A-Ethylene-Vinyl-Alcohol-Copolymer-Resin-nbspdiscontinued-.php

| Physical Properties | Metric | English | Comments |
|------------------------------------|---------------------------------------|---|--|
| Density | 1.14 g/cc | 0.0412 lb/in ³ | ASTM D1505 |
| Moisture Absorption at Equilibrium | 1.5 % | 1.5 % | Equilibrium at 50% RH |
| | 1.5 % | 1.5 % | 50% RH |
| Water Absorption at Saturation | 5.0 % | 5.0 % | 100% RH |
| Moisture Vapor Transmission | 0.540 cc-mm/m ² -24hr-atm | 1.37 cc-mil/100 in ² -24hr-atm | 40°C, 90% RH |
| Oxygen Transmission | 0.0300 cc-mm/m ² -24hr-atm | 0.0762 cc-mil/100 in ² -24hr-atm | 20°C; 65% RH; Permeability increases significantly at higher moisture content. |
| Melt Flow | 5.5 g/10 min | 5.5 g/10 min | ASTM D1238 |
| | @Load 2.16 kg, Temperature 190 °C | @Load 4.76 lb, Temperature 374 °F | |
| | 13 g/10 min | 13 g/10 min | ASTM D1238 |
| | @Load 2.16 kg, Temperature 210 °C | @Load 4.76 lb, Temperature 410 °F | |

| Mechanical Properties | Metric | English | Comments |
|------------------------------|------------|----------------|--------------------------------------|
| Hardness, Rockwell M | 88 | 88 | ASTM D785 |
| Tensile Strength, Yield | 59.0 MPa | 8560 psi | 10%/min. ASTM D638 |
| Film Elongation at Break, MD | 280 % | 280 % | Orientation not specified; ASTM D882 |
| Elongation at Yield | 7.0 % | 7.0 % | 10%/min. ASTM D638 |
| Modulus of Elasticity | 2.10 GPa | 305 ksi | Youngs Modulus, ASTM D638, 10%/min. |
| Izod Impact, Notched | 0.500 J/cm | 0.937 ft-lb/in | ASTM D256 |

| Taber Abrasion, mg/1000 Cycles Mechanical Properties | 2.2 Metric | 2.2 English | ASTM D1175 Comments |
|---|---------------|----------------|--------------------------------------|
| Film Tensile Strength at Break, MD | 51.0 MPa | 7400 psi | Orientation not specified; ASTM D882 |

| Thermal Properties | Metric | English | Comments |
|--|--|--|-------------------------|
| CTE, linear | 80.0 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$ | 44.4 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$ | Below Tg |
| | 130 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$ | 72.2 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$ | Above Tg |
| Specific Heat Capacity | 2.40 J/g $\cdot^{\circ}\text{C}$ | 0.574 BTU/lb $\cdot^{\circ}\text{F}$ | |
| Thermal Conductivity | 0.360 W/m-K | 2.50 BTU-in/hr-ft $^2\cdot^{\circ}\text{F}$ | |
| Melting Point | 165 $^{\circ}\text{C}$ | 329 $^{\circ}\text{F}$ | DSC |
| Deflection Temperature at 0.46 MPa (66 psi) | 80.0 $^{\circ}\text{C}$ | 176 $^{\circ}\text{F}$ | |
| Vicat Softening Point | 155 $^{\circ}\text{C}$ | 311 $^{\circ}\text{F}$ | |
| Glass Transition Temp, Tg | 55.0 $^{\circ}\text{C}$ | 131 $^{\circ}\text{F}$ | Dynamic Viscoelasticity |

| Optical Properties | Metric | English | Comments |
|--------------------|--------|---------|----------------------------------|
| Haze | 1.7 % | 1.7 % | Film; ASTM D1003 |
| Gloss | 85 % | 85 % | 45 $^{\circ}$; Film; ASTM D2457 |

| Electrical Properties | Metric | English | Comments |
|------------------------|-----------------|-----------------|-------------------------|
| Electrical Resistivity | 1.20e+13 ohm-cm | 1.20e+13 ohm-cm | |
| Surface Resistance | 2.10e+15 ohm | 2.10e+15 ohm | |
| Dielectric Constant | 5.0 | 5.0 | Frequency Not Specified |
| Dissipation Factor | 0.22 | 0.22 | Frequency Not Specified |

| Processing Properties | Metric | English | Comments |
|-----------------------|-------------------------------|-------------------------------|----------|
| Melt Temperature | ≤ 250 $^{\circ}\text{C}$ | ≤ 482 $^{\circ}\text{F}$ | |

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