

Overview of materials for Ethylene Vinyl Acetate Copolymer (EVA), Film Grade

Category : Polymer , Film , Thermoplastic , Ethylene Vinyl Acetate , Ethylene Vinyl Acetate Copolymer (EVA), Film Grade

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Ethylene Vinyl Acetate Copolymer (EVA), Film Grade". Each property range of values reported is minimum and maximum values of appropriate MatWeb entries. The comments report the average value, and number of data points used to calculate the average. The values are not necessarily typical of any specific grade, especially less common values and those that can be most affected by additives or processing methods.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Overview-of-materials-for-Ethylene-Vinyl-Acetate-Copolymer-EVA-Film-Grade.php

Physical Properties	Metric	English	Comments
Density	0.921 - 0.970 g/cc	0.0333 - 0.0350 lb/in ³	Average value: 0.931 g/cc Grade Count:191
Water Absorption	0.100 %	0.100 %	Average value: 0.100 % Grade Count:3
Moisture Vapor Transmission	0.590 - 0.940 cc-mm/m ² -24hr-atm	1.50 - 2.39 cc-mil/100 in ² -24hr-atm	Average value: 0.789 cc-mm/m ² -24hr-atm Grade Count:8
Water Vapor Transmission	85.3 g/m ² /day	5.49 g/100 in ² /day	Average value: 85.3 g/m ² /day Grade Count:3
Oxygen Transmission	158 - 229 cc-mm/m ² -24hr-atm	401 - 582 cc-mil/100 in ² -24hr-atm	Average value: 199 cc-mm/m ² -24hr-atm Grade Count:8
Oxygen Transmission Rate	8900 cc/m ² /day	573 cc/100 in ² /day	Average value: 8900 cc/m ² /day Grade Count:3
Viscosity	2.00e+6 - 2.00e+6 cP	2.00e+6 - 2.00e+6 cP	Average value: 2.00e+6 cP Grade Count:2
	@Temperature 190 - 190 °C	@Temperature 374 - 374 °F	
	2.00e+6 - 2.00e+6 cP	2.00e+6 - 2.00e+6 cP	Average value: 2.00e+6 cP Grade Count:2
	@Shear Rate 50.0 - 50.0 1/s	@Shear Rate 50.0 - 50.0 1/s	
Environmental Stress Crack Resistance	500 hour	500 hour	Average value: 500 hour Grade Count:16
Vinyl Acetate Content	2.00 - 29.5 %	2.00 - 29.5 %	Average value: 10.4 % Grade Count:82
Thickness	15.0 - 300 microns	0.591 - 11.8 mil	Average value: 52.7 microns Grade Count:109
Melt Flow	0.190 - 135 g/10 min	0.190 - 135 g/10 min	Average value: 2.76 g/10 min Grade Count:196

Mechanical Properties	Metric	English	Comments
Hardness, Shore A	72.0 - 96.0	72.0 - 96.0	Average value: 86.3 Grade Count:28

Hardness, Shore D Mechanical Properties	23.0 - 94.0 Metric	23.0 - 94.0 English	Average value: 41.9 Grade Count:54 Comments
Tensile Strength, Ultimate	3.40 - 33.0 MPa	493 - 4790 psi	Average value: 15.2 MPa Grade Count:52
Film Tensile Strength at Yield, MD	3.00 - 15.0 MPa	435 - 2180 psi	Average value: 7.43 MPa Grade Count:86
Film Tensile Strength at Yield, TD	2.00 - 11.0 MPa	290 - 1600 psi	Average value: 6.71 MPa Grade Count:86
Tensile Strength, Yield	3.40 - 10.0 MPa	493 - 1450 psi	Average value: 8.00 MPa Grade Count:45
Film Elongation at Break, MD	100 - 620 %	100 - 620 %	Average value: 331 % Grade Count:144
Film Elongation at Break, TD	260 - 950 %	260 - 950 %	Average value: 587 % Grade Count:144
Film Elongation at Yield, MD	6.40 - 19.4 %	6.40 - 19.4 %	Average value: 9.03 % Grade Count:24
Film Elongation at Yield, TD	5.40 - 16.0 %	5.40 - 16.0 %	Average value: 7.38 % Grade Count:24
Elongation at Break	50.0 - 1200 %	50.0 - 1200 %	Average value: 564 % Grade Count:69
Modulus of Elasticity	0.00500 - 0.338 GPa	0.725 - 49.0 ksi	Average value: 0.159 GPa Grade Count:54
Flexural Modulus	0.0190 - 0.0960 GPa	2.76 - 13.9 ksi	Average value: 0.0561 GPa Grade Count:15
Secant Modulus	0.0531 - 1.05 GPa	7.70 - 152 ksi	Average value: 0.601 GPa Grade Count:6
Secant Modulus, MD	0.0241 - 0.600 GPa	3.50 - 87.0 ksi	Average value: 0.126 GPa Grade Count:122
Secant Modulus, TD	0.0248 - 0.700 GPa	3.60 - 102 ksi	Average value: 0.146 GPa Grade Count:122
Tensile Impact Strength	146 - 815 kJ/m ²	69.5 - 388 ft-lb/in ²	Average value: 596 kJ/m ² Grade Count:16
Coefficient of Friction	0.100 - 3.40	0.100 - 3.40	Average value: 0.547 Grade Count:24
Elmendorf Tear Strength MD	40.0 - 600 g	40.0 - 600 g	Average value: 217 g Grade Count:56
Elmendorf Tear Strength TD	30.0 - 345 g	30.0 - 345 g	Average value: 131 g Grade Count:56
Elmendorf Tear Strength, MD	0.197 - 18.9 g/micron	5.00 - 480 g/mil	Average value: 5.00 g/micron Grade Count:75
Elmendorf Tear Strength, TD	0.945 - 9.06 g/micron	24.0 - 230 g/mil	Average value: 3.59 g/micron Grade Count:68
Dart Drop	1.97 - 30.0 g/micron	50.0 - 762 g/mil	Average value: 6.87 g/micron Grade Count:116
Dart Drop Test	70.0 - 700 g	0.154 - 1.54 lb	Average value: 270 g Grade Count:96
			Average value: 27.1 MPa Grade

Film Tensile Strength at Break, MD Mechanical Properties	15.0 - 40.0 MPa Metric	2180 - 5800 psi English	Count:145 Comments
Film Tensile Strength at Break, TD	13.0 - 40.0 MPa	1890 - 5800 psi	Average value: 24.4 MPa Grade Count:138

Thermal Properties	Metric	English	Comments
Melting Point	-7.78 - 110 °C	18.0 - 230 °F	Average value: 94.2 °C Grade Count:147
Crystallization Temperature	85.0 - 96.0 °C	185 - 205 °F	Average value: 90.9 °C Grade Count:16
Vicat Softening Point	44.0 - 96.0 °C	111 - 205 °F	Average value: 78.3 °C Grade Count:143
Brittleness Temperature	-90.0 - -76.0 °C	-130 - -105 °F	Average value: -79.6 °C Grade Count:18

Optical Properties	Metric	English	Comments
Refractive Index	1.49	1.49	Average value: 1.49 Grade Count:3
Haze	1.00 - 28.0 %	1.00 - 28.0 %	Average value: 6.76 % Grade Count:153
Gloss	17.0 - 123 %	17.0 - 123 %	Average value: 71.1 % Grade Count:144
Yellow Index	2.90 - 8.20 %	2.90 - 8.20 %	Average value: 5.71 % Grade Count:3
Transmission, Visible	10.0 - 90.0 %	10.0 - 90.0 %	Average value: 85.4 % Grade Count:56

Electrical Properties	Metric	English	Comments
Electrical Resistivity	1.00e+14 - 1.00e+15 ohm-cm	1.00e+14 - 1.00e+15 ohm-cm	Average value: 3.25e+14 ohm-cm Grade Count:4

Processing Properties	Metric	English	Comments
Processing Temperature	140 - 210 °C	284 - 410 °F	Average value: 170 °C Grade Count:11
Melt Temperature	150 - 221 °C	302 - 430 °F	Average value: 194 °C Grade Count:52
Die Opening	0.0635 - 0.150 cm	0.0250 - 0.0591 in	Average value: 0.0812 cm Grade Count:9

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