

Overview of materials for Medium Density Polyethylene (MDPE), Film Grade

Category : Polymer , Film , Thermoplastic , Polyethylene (PE) , MDPE , Medium Density Polyethylene (MDPE), Film Grade

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Medium Density Polyethylene (MDPE), 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-Medium-Density-Polyethylene-MDPE-Film-Grade.php

Physical Properties	Metric	English	Comments
Density	0.925 - 0.958 g/cc	0.0334 - 0.0346 lb/in ³	Average value: 0.936 g/cc Grade Count:22
Water Vapor Transmission	7.76 - 14.0 g/m ² /day	0.500 - 0.900 g/100 in ² /day	Average value: 11.6 g/m ² /day Grade Count:5
Thickness	20.0 - 38.1 microns	0.787 - 1.50 mil	Average value: 27.6 microns Grade Count:12
Melt Flow	0.0570 - 30.0 g/10 min	0.0570 - 30.0 g/10 min	Average value: 7.64 g/10 min Grade Count:22

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	33.0 - 39.0 MPa	4790 - 5660 psi	Average value: 37.0 MPa Grade Count:3
Film Tensile Strength at Yield, MD	12.4 - 35.2 MPa	1800 - 5100 psi	Average value: 20.2 MPa Grade Count:13
Film Tensile Strength at Yield, TD	14.7 - 29.6 MPa	2130 - 4300 psi	Average value: 20.1 MPa Grade Count:13
Tensile Strength, Yield	17.0 - 27.6 MPa	2470 - 4000 psi	Average value: 20.6 MPa Grade Count:4
Film Elongation at Break, MD	150 - 700 %	150 - 700 %	Average value: 469 % Grade Count:18
Film Elongation at Break, TD	10.0 - 900 %	10.0 - 900 %	Average value: 601 % Grade Count:18
Elongation at Break	600 - 910 %	600 - 910 %	Average value: 813 % Grade Count:4
Elongation at Yield	12.0 - 14.0 %	12.0 - 14.0 %	Average value: 12.7 % Grade Count:3
Flexural Modulus	0.590 - 0.810 GPa	85.6 - 117 ksi	Average value: 0.673 GPa Grade Count:8
Secant Modulus, MD	0.179 - 1.05 GPa	26.0 - 152 ksi	Average value: 0.427 GPa Grade Count:13
Secant Modulus, TD	0.172 - 1.37 GPa	25.0 - 199 ksi	Average value: 0.504 GPa Grade Count:13

Mechanical Properties	Metric	English	Comments
Impact, Notched	4.00 J/cm	5.0 ft-lb/in	Value: 4.92 J/cm Grade Count:3
Elmendorf Tear Strength MD	10.0 - 250 g	10.0 - 250 g	Average value: 86.8 g Grade Count:10
Elmendorf Tear Strength TD	35.0 - 1450 g	35.0 - 1450 g	Average value: 624 g Grade Count:10
Elmendorf Tear Strength, MD	0.800 - 3.94 g/micron	20.3 - 100 g/mil	Average value: 1.83 g/micron Grade Count:9
Elmendorf Tear Strength, TD	3.94 - 21.0 g/micron	100 - 533 g/mil	Average value: 13.8 g/micron Grade Count:9
Dart Drop	1.57 - 11.8 g/micron	40.0 - 300 g/mil	Average value: 3.86 g/micron Grade Count:9
Dart Drop Test	30.0 - 300 g	0.0662 - 0.662 lb	Average value: 124 g Grade Count:16
Film Tensile Strength at Break, MD	24.8 - 76.5 MPa	3600 - 11100 psi	Average value: 47.5 MPa Grade Count:18
Film Tensile Strength at Break, TD	17.0 - 66.2 MPa	2470 - 9600 psi	Average value: 36.8 MPa Grade Count:18

Thermal Properties	Metric	English	Comments
Melting Point	116 - 131 °C	241 - 268 °F	Average value: 123 °C Grade Count:13
Vicat Softening Point	116 - 124 °C	241 - 255 °F	Average value: 121 °C Grade Count:6

Optical Properties	Metric	English	Comments
Haze	4.80 - 10.0 %	4.80 - 10.0 %	Average value: 7.28 % Grade Count:9
Gloss	40.0 - 90.0 %	40.0 - 90.0 %	Average value: 68.2 % Grade Count:10

Processing Properties	Metric	English	Comments
Processing Temperature	20.0 - 220 °C	68.0 - 428 °F	Average value: 174 °C Grade Count:5
Melt Temperature	182 - 280 °C	360 - 536 °F	Average value: 210 °C Grade Count:7

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