

Overview of materials for Medium Density Polyethylene (MDPE), Rotational Molded

Category : Polymer , Thermoplastic , Polyethylene (PE) , MDPE , Medium Density Polyethylene (MDPE), Rotational Molded

Material Notes:

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

Physical Properties	Metric	English	Comments
Density	0.932 - 0.947 g/cc	0.0337 - 0.0342 lb/in ³	Average value: 0.937 g/cc Grade Count:35
Environmental Stress Crack Resistance	4.00 - 1000 hour	4.00 - 1000 hour	Average value: 437 hour Grade Count:29
	>= 1000 hour @Temperature 50.0 - 50.0 °C	>= 1000 hour @Temperature 122 - 122 °F	Average value: 1000 hour Grade Count:2
Melt Flow	1.70 - 135 g/10 min	1.70 - 135 g/10 min	Average value: 8.33 g/10 min Grade Count:34

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	55.0 - 69.0	55.0 - 69.0	Average value: 59.3 Grade Count:10
Tensile Strength, Ultimate	11.0 - 39.0 MPa	1600 - 5660 psi	Average value: 24.5 MPa Grade Count:9
Tensile Strength, Yield	14.4 - 22.1 MPa	2090 - 3200 psi	Average value: 18.8 MPa Grade Count:33
Elongation at Break	580 - 1500 %	580 - 1500 %	Average value: 990 % Grade Count:18
Elongation at Yield	11.0 - 17.4 %	11.0 - 17.4 %	Average value: 13.2 % Grade Count:9
Flexural Modulus	0.490 - 0.892 GPa	71.0 - 129 ksi	Average value: 0.632 GPa Grade Count:33
Izod Impact, Notched	0.530 - 5.30 J/cm	0.993 - 9.93 ft-lb/in	Average value: 2.12 J/cm Grade Count:5
Charpy Impact, Notched	1.80 - 15.0 J/cm ²	8.57 - 71.4 ft-lb/in ²	Average value: 6.27 J/cm ² Grade Count:3
	>= 15.0 J/cm ² @Temperature -30.0 - -30.0 °C	>= 71.4 ft-lb/in ² @Temperature -22.0 - -22.0 °F	Average value: 15.0 J/cm ² Grade Count:1

Mechanical Properties	Metric	English	Comments
Tensile Impact Strength	142 - 163 kJ/m ²	53.1 - 61.7 ft-lb/in ²	Average value: 154 kJ/m ² Grade Count:4
Dart Drop Total Energy	200 - 210 J/cm	0.375 - 0.393 ft-lb/mil	Average value: 208 J/cm Grade Count:13
Dart Drop	142 - 152 g/micron	3610 - 3860 g/mil	Average value: 151 g/micron Grade Count:13

Thermal Properties	Metric	English	Comments
Melting Point	123 - 129 °C	253 - 264 °F	Average value: 127 °C Grade Count:8
Crystallization Temperature	112 - 114 °C	234 - 237 °F	Average value: 113 °C Grade Count:4
Deflection Temperature at 0.46 MPa (66 psi)	47.0 - 76.0 °C	117 - 169 °F	Average value: 64.0 °C Grade Count:21
Deflection Temperature at 1.8 MPa (264 psi)	37.3 - 42.0 °C	99.1 - 108 °F	Average value: 40.4 °C Grade Count:3
Vicat Softening Point	108 - 122 °C	226 - 252 °F	Average value: 116 °C Grade Count:16
Brittleness Temperature	-75.0 - -70.0 °C	-103 - -94.0 °F	Average value: -70.4 °C Grade Count:14

Processing Properties	Metric	English	Comments
Melt Temperature	131 - 315 °C	268 - 599 °F	Average value: 208 °C Grade Count:13

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