

Overview of materials for High Density Polyethylene (HDPE), Impact Grade

Category : Polymer , Thermoplastic , Polyethylene (PE) , HDPE , High Density Polyethylene (HDPE), Impact Grade

Material Notes:

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

Physical Properties	Metric	English	Comments
Density	0.945 - 0.962 g/cc	0.0341 - 0.0348 lb/in ³	Average value: 0.951 g/cc Grade Count:15
Viscosity	39000 - 480000 cP	39000 - 480000 cP	Average value: 164000 cP Grade Count:7
	@Temperature 190 - 190 °C	@Temperature 374 - 374 °F	
	39000 - 480000 cP	39000 - 480000 cP	Average value: 164000 cP Grade Count:7
	@Shear Rate 300 - 5000 1/s	@Shear Rate 300 - 5000 1/s	
Environmental Stress Crack Resistance	1.00 - 500 hour	1.00 - 500 hour	Average value: 128 hour Grade Count:4
Melt Flow	0.300 - 42.0 g/10 min	0.300 - 42.0 g/10 min	Average value: 15.1 g/10 min Grade Count:15

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	59.0 - 64.0	59.0 - 64.0	Average value: 60.7 Grade Count:3
Tensile Strength, Ultimate	10.0 - 19.0 MPa	1450 - 2760 psi	Average value: 13.7 MPa Grade Count:8
Tensile Strength, Yield	17.2 - 25.0 MPa	2490 - 3630 psi	Average value: 21.5 MPa Grade Count:15
Elongation at Break	50.0 - 1000 %	50.0 - 1000 %	Average value: 415 % Grade Count:15
Modulus of Elasticity	0.510 - 1.10 GPa	74.0 - 160 ksi	Average value: 0.702 GPa Grade Count:10
Flexural Modulus	0.772 - 1.17 GPa	112 - 170 ksi	Average value: 0.903 GPa Grade Count:12
Izod Impact, Notched	0.534 - 3.74 J/cm	1.00 - 7.00 ft-lb/in	Average value: 1.60 J/cm Grade Count:3
Izod Impact, Notched (ISO)	27.0 - 176 kJ/m ²	12.8 - 83.7 ft-lb/in ²	Average value: 75.7 kJ/m ² Grade Count:8

Mechanical Properties	Metric	English	Comments
Falling Dart Impact	32.5397 - 176.257 J	24.0000 - 130.000 ft-lb	Average value: 104 J Grade Count: 2
	@Temperature -40.0 - -40.0 °C	@Temperature -40.0 - -40.0 °F	

Thermal Properties	Metric	English	Comments
Deflection Temperature at 0.46 MPa (66 psi)	70.0 - 73.0 °C	158 - 163 °F	Average value: 72.0 °C Grade Count:3
Vicat Softening Point	75.0 - 129 °C	167 - 264 °F	Average value: 114 °C Grade Count:11
Brittleness Temperature	-118 - -75.0 °C	-180 - -103 °F	Average value: -94.3 °C Grade Count:4

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