

## Overview of materials for Linear Low Density Polyethylene (LLDPE), Injection Molded

Category : Polymer , Thermoplastic , Polyethylene (PE) , LLDPE , Linear Low Density Polyethylene (LLDPE), Injection Molded

### Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Linear Low Density Polyethylene (LLDPE), Injection 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-Linear-Low-Density-Polyethylene-LLDPE-Injection-Molded.php](http://www.lookpolymers.com/polymer_Overview-of-materials-for-Linear-Low-Density-Polyethylene-LLDPE-Injection-Molded.php)

Physical Properties	Metric	English	Comments
Density	0.870 - 1.86 g/cc	0.0314 - 0.0672 lb/in <sup>3</sup>	Average value: 0.933 g/cc Grade Count:98
Viscosity	42.0 - 300000 cP	42.0 - 300000 cP	Average value: 40700 cP Grade Count:13
	@Temperature 190 - 230 °C	@Temperature 374 - 446 °F	
	42.0 - 300000 cP	42.0 - 300000 cP	Average value: 40700 cP Grade Count:13
	@Shear Rate 300 - 5000 1/s	@Shear Rate 300 - 5000 1/s	
Environmental Stress Crack Resistance	1.00 - 1000 hour	1.00 - 1000 hour	Average value: 258 hour Grade Count:27
	>= 1000 hour	>= 1000 hour	Average value: 668 hour Grade Count:2
	@Temperature 50.0 - 50.0 °C	@Temperature 122 - 122 °F	
	4.00 - 4.00 hour	4.00 - 4.00 hour	Average value: 668 hour Grade Count:1
	@Temperature 50.0 - 50.0 °C	@Temperature 122 - 122 °F	
	4.00 - 4.00 hour	4.00 - 4.00 hour	Average value: 668 hour Grade Count:1
	@Thickness 3.80 - 3.80 mm	@Thickness 0.150 - 0.150 in	
Thickness	25.4 - 38.1 microns	1.00 - 1.50 mil	Average value: 32.9 microns Grade Count:11
Melt Flow	0.800 - 150 g/10 min	0.800 - 150 g/10 min	Average value: 29.6 g/10 min Grade Count:95
Spiral Flow	32.0 - 67.8 cm	12.6 - 26.7 in	Average value: 47.6 cm Grade Count:10

Mechanical Properties	Metric	English	Comments
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Hardness: Shore D Mechanical Properties	44.0 - 70.0 Metric	44.0 - 70.0 English	Average value: 54.7 Grade Count:44 Comments
Tensile Strength, Ultimate	7.93 - 45.5 MPa	1150 - 6600 psi	Average value: 12.6 MPa Grade Count:38
Film Tensile Strength at Yield, MD	1.31 - 12.5 MPa	190 - 1810 psi	Average value: 9.65 MPa Grade Count:9
Film Tensile Strength at Yield, TD	10.3 - 13.0 MPa	1500 - 1890 psi	Average value: 12.0 MPa Grade Count:7
Tensile Strength, Yield	7.30 - 42.0 MPa	1060 - 6090 psi	Average value: 15.4 MPa Grade Count:68
Film Elongation at Break, MD	460 - 1000 %	460 - 1000 %	Average value: 677 % Grade Count:25
Film Elongation at Break, TD	540 - 1100 %	540 - 1100 %	Average value: 769 % Grade Count:23
Elongation at Break	25.0 - 1100 %	25.0 - 1100 %	Average value: 461 % Grade Count:60
Elongation at Yield	8.20 - 30.0 %	8.20 - 30.0 %	Average value: 13.1 % Grade Count:9
Modulus of Elasticity	0.140 - 1.57 GPa	20.3 - 227 ksi	Average value: 0.441 GPa Grade Count:25
Flexural Modulus	0.0165 - 0.758 GPa	2.40 - 110 ksi	Average value: 0.383 GPa Grade Count:55
Secant Modulus	0.230 - 0.689 GPa	33.4 - 100 ksi	Average value: 0.431 GPa Grade Count:10
Secant Modulus, MD	0.179 - 0.207 GPa	26.0 - 30.0 ksi	Average value: 0.201 GPa Grade Count:5
Secant Modulus, TD	0.221 - 0.238 GPa	32.0 - 34.5 ksi	Average value: 0.234 GPa Grade Count:5
Izod Impact, Notched	5.00 - 8.01 J/cm	9.37 - 15.0 ft-lb/in	Average value: 6.00 J/cm Grade Count:3
Izod Impact, Notched (ISO)	23.0 - 97.0 kJ/m <sup>2</sup> @Temperature -50.0 - - 50.0 °C	10.9 - 46.2 ft-lb/in <sup>2</sup> @Temperature -58.0 - - 58.0 °F	Average value: 44.5 kJ/m <sup>2</sup> Grade Count:8
Tensile Impact Strength	220.5 - 365.4 kJ/m <sup>2</sup> @Temperature -40.0 - - 40.0 °C	104.9 - 173.9 ft-lb/in <sup>2</sup> @Temperature -40.0 - - 40.0 °F	Average value: 268 kJ/m <sup>2</sup> Grade Count:6
Dart Drop, Total Energy	2.44 J	1.80 ft-lb	Average value: 2.44 J Grade Count:4
Falling Dart Impact	27.1164 - 28.4722 J @Temperature -40.0 - - 40.0 °C	20.0000 - 21.0000 ft-lb @Temperature -40.0 - - 40.0 °F	Average value: 27.8 J Grade Count:2
Coefficient of Friction	0.120 - 0.500	0.120 - 0.500	Average value: 0.235 Grade Count:4
Coefficient of Friction, Static	0.200 - 0.580	0.200 - 0.580	Average value: 0.310 Grade Count:4

Elmendorf Tear Strength MD Mechanical Properties	260 - 600 g Metric	260 - 600 g English	Average value: 514 g Grade Count:12 Comments
Elmendorf Tear Strength TD	490 - 900 g	490 - 900 g	Average value: 729 g Grade Count:12
Elmendorf Tear Strength, MD	2.00 - 15.0 g/micron	50.8 - 381 g/mil	Average value: 7.72 g/micron Grade Count:11
Elmendorf Tear Strength, TD	7.30 - 27.6 g/micron	185 - 701 g/mil	Average value: 16.8 g/micron Grade Count:11
Dart Drop	3.00 - 19.7 g/micron	76.2 - 500 g/mil	Average value: 6.47 g/micron Grade Count:12
Dart Drop Test	290 - 1000 g	0.639 - 2.20 lb	Average value: 570 g Grade Count:12
Film Tensile Strength at Break, MD	21.0 - 56.5 MPa	3050 - 8200 psi	Average value: 38.7 MPa Grade Count:23
Film Tensile Strength at Break, TD	16.0 - 47.0 MPa	2320 - 6820 psi	Average value: 31.7 MPa Grade Count:23

Thermal Properties	Metric	English	Comments
Melting Point	75.0 - 128 °C	167 - 262 °F	Average value: 113 °C Grade Count:36
Crystallization Temperature	106 - 111 °C	223 - 232 °F	Average value: 107 °C Grade Count:6
Deflection Temperature at 0.46 MPa (66 psi)	42.0 - 57.2 °C	108 - 135 °F	Average value: 48.9 °C Grade Count:11
Deflection Temperature at 1.8 MPa (264 psi)	35.0 - 35.6 °C	95.0 - 96.0 °F	Average value: 35.2 °C Grade Count:3
Vicat Softening Point	41.1 - 130 °C	106 - 266 °F	Average value: 96.1 °C Grade Count:62
Brittleness Temperature	-76.1 - -27.0 °C	-105 - -16.6 °F	Average value: -68.0 °C Grade Count:32

Optical Properties	Metric	English	Comments
Haze	1.50 - 55.0 %	1.50 - 55.0 %	Average value: 19.2 % Grade Count:17
Gloss	45.0 - 94.0 %	45.0 - 94.0 %	Average value: 67.2 % Grade Count:11

Processing Properties	Metric	English	Comments
Nozzle Temperature	149 - 205 °C	300 - 401 °F	Average value: 198 °C Grade Count:8
Melt Temperature	95.0 - 302 °C	203 - 575 °F	Average value: 186 °C Grade Count:31
Mold Temperature	10.0 - 60.0 °C	50.0 - 140 °F	Average value: 36.6 °C Grade Count:7
Die Opening	0.0810 - 0.254 cm	0.0319 - 0.100 in	Average value: 0.169 cm Grade Count:6
Injection Pressure	2.76 - 100 MPa	400 - 14500 psi	Average value: 38.0 MPa Grade Count:5

Processing Properties

Metric

English

Comments

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