

Overview of materials for Thermoset Polyurethane, Liquid

Category : Polymer , Thermoset , Polyurethane, TS , Thermoset Polyurethane, Liquid

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Thermoset Polyurethane, Liquid". 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-Thermoset-Polyurethane-Liquid.php

Physical Properties	Metric	English	Comments
Density	0.400 - 1.24 g/cc	0.0145 - 0.0448 lb/in ³	Average value: 1.07 g/cc Grade Count:70
Water Absorption	0.300 - 4.00 %	0.300 - 4.00 %	Average value: 2.24 % Grade Count:7
Water Absorption at Saturation	0.300 - 4.00 %	0.300 - 4.00 %	Average value: 2.24 % Grade Count:7
Viscosity	90.0 - 100000 cP	90.0 - 100000 cP	Average value: 4830 cP Grade Count:41
	100 - 15000 cP @Temperature 45.0 - 82.2 °C	100 - 15000 cP @Temperature 113 - 180 °F	Average value: 2520 cP Grade Count:8
Thickness	102 - 6100 microns	4.00 - 240 mil	Average value: 2320 microns Grade Count:6

Mechanical Properties	Metric	English	Comments
Hardness, Shore A	20.0 - 95.0	20.0 - 95.0	Average value: 70.1 Grade Count:21
Hardness, Shore D	50.0 - 85.0	50.0 - 85.0	Average value: 69.4 Grade Count:9
Tensile Strength, Ultimate	0.586 - 55.2 MPa	85.0 - 8000 psi	Average value: 22.7 MPa Grade Count:36
Tensile Strength, Yield	0.165 - 89.0 MPa	24.0 - 12900 psi	Average value: 24.5 MPa Grade Count:15
Elongation at Break	3.50 - 900 %	3.50 - 900 %	Average value: 335 % Grade Count:37
Elongation at Yield	2.00 - 8.00 %	2.00 - 8.00 %	Average value: 4.33 % Grade Count:3
Modulus of Elasticity	0.440 - 3.20 GPa	63.8 - 464 ksi	Average value: 1.66 GPa Grade Count:10
Flexural Yield Strength	32.0 - 115 MPa	4640 - 16700 psi	Average value: 81.7 MPa Grade Count:5
Flexural Modulus	0.400 - 3.00 GPa	58.0 - 435 ksi	Average value: 2.19 GPa Grade Count:5

Mechanical Properties	Metric	English	Comments
Rebound	5.00 - 65.0 %	5.10 - 65.0 %	Average value: 38.7 % Grade Count:13
Izod Impact, Notched	4.30 - 5.90 J/cm	8.06 - 11.1 ft-lb/in	Average value: 4.95 J/cm Grade Count:4
Charpy Impact Unnotched	0.900 J/cm ² - NB	4.28 ft-lb/in ² - NB	Average value: 3.52 J/cm ² Grade Count:7
	0.772 - 0.772 J/cm ² @Temperature -30.0 - -30.0 °C	3.67 - 3.67 ft-lb/in ² @Temperature -22.0 - -22.0 °F	Average value: 0.772 J/cm ² Grade Count:1
Charpy Impact, Notched	0.230 - 3.48 J/cm ²	1.09 - 16.6 ft-lb/in ²	Average value: 1.74 J/cm ² Grade Count:3
Tear Strength	1.21 - 167 kN/m	6.90 - 950 pli	Average value: 52.9 kN/m Grade Count:26
Taber Abrasion, mg/1000 Cycles	3.00 - 1880	3.00 - 1880	Average value: 149 Grade Count:17

Thermal Properties	Metric	English	Comments
CTE, linear	54.0 - 160 µm/m-°C	30.0 - 88.9 µin/in-°F	Average value: 105 µm/m-°C Grade Count:7
CTE, linear, Transverse to Flow	73.0 - 164 µm/m-°C	40.6 - 91.1 µin/in-°F	Average value: 120 µm/m-°C Grade Count:7
Deflection Temperature at 0.46 MPa (66 psi)	67.0 - 195 °C	153 - 383 °F	Average value: 142 °C Grade Count:5
Deflection Temperature at 1.8 MPa (264 psi)	54.0 - 136 °C	129 - 277 °F	Average value: 89.3 °C Grade Count:8
Vicat Softening Point	94.0 - 245 °C	201 - 473 °F	Average value: 163 °C Grade Count:4
Glass Transition Temp, Tg	83.0 - 145 °C	181 - 293 °F	Average value: 105 °C Grade Count:3
Flammability, UL94	HB - V-0	HB - V-0	Grade Count:3

Electrical Properties	Metric	English	Comments
Electrical Resistivity	7.00e+13 - 1.00e+15 ohm-cm	7.00e+13 - 1.00e+15 ohm-cm	Average value: 4.88e+14 ohm-cm Grade Count:6
Surface Resistance	1.00e+13 - 2.00e+14 ohm	1.00e+13 - 2.00e+14 ohm	Average value: 5.67e+13 ohm Grade Count:6
Dielectric Strength	10.0 - 18.0 kV/mm	254 - 457 kV/in	Average value: 14.7 kV/mm Grade Count:6
Comparative Tracking Index	600 V	600 V	Average value: 600 V Grade Count:5

Processing Properties	Metric	English	Comments
	18.3 - 93.3 °C	65.0 - 200 °F	Average value: 42.8 °C Grade

Processing Temperature Processing Properties	Metric	English	Count:26 Comments
Mold Temperature	21.1 - 100 °C	70.0 - 212 °F	Average value: 59.6 °C Grade Count:26
Cure Time	5.00 - 30200 min	0.0833 - 504 hour	Average value: 2920 min Grade Count:19
	15.0 - 1440 min @Temperature 57.2 - 100 °C	0.250 - 24.0 hour @Temperature 135 - 212 °F	Average value: 434 min Grade Count:17
Pot Life	0.750 - 60.0 min	0.750 - 60.0 min	Average value: 10.1 min Grade Count:28

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