

Overview of materials for Thermoplastic Olefinic Elastomer (TPO)

Category : Polymer , Thermoplastic , Elastomer, TPE , Thermoplastic Olefinic Elastomer (TPO)

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Thermoplastic Olefinic Elastomer (TPO)".

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-Thermoplastic-Olefinic-Elastomer-TPO.php

Physical Properties	Metric	English	Comments
Density	0.850 - 1.82 g/cc	0.0307 - 0.0658 lb/in³	Average value: 1.00 g/cc Grade Count:381
Filler Content	10.0 - 30.0 %	10.0 - 30.0 %	Average value: 18.3 % Grade Count:9
Water Absorption	0.0100 - 0.0500 %	0.0100 - 0.0500 %	Average value: 0.0320 % Grade Count:15
Viscosity	102000 - 458000 cP @Temperature 190 - 200 °C	102000 - 458000 cP @Temperature 374 - 392 °F	Average value: 277000 cP Grade Count:29
	102000 - 458000 cP @Shear Rate 206 - 300 1/s	102000 - 458000 cP @Shear Rate 206 - 300 1/s	Average value: 277000 cP Grade Count:29
Mooney Viscosity	6.50 - 19.0	6.50 - 19.0	Average value: 11.8 Grade Count:3
Environmental Stress Crack Resistance	1000 hour	1000 hour	Average value: 1000 hour Grade Count:4
Thickness	20.3 - 31.8 microns	0.800 - 1.25 mil	Average value: 24.1 microns Grade Count:3
Linear Mold Shrinkage	0.00100 - 0.0350 cm/cm	0.00100 - 0.0350 in/in	Average value: 0.0125 cm/cm Grade Count:219
	0.00600 - 0.00900 cm/cm @Temperature 80.0 - 121 °C	0.00600 - 0.00900 in/in @Temperature 176 - 250 °F	Average value: 0.00750 cm/cm Grade Count:3
	0.00600 - 0.00900 cm/cm @Time 3600 - 3600 sec	0.00600 - 0.00900 in/in @Time 1.00 - 1.00 hour	Average value: 0.00750 cm/cm Grade Count:3
Linear Mold Shrinkage, Transverse	0.000 - 0.0160 cm/cm	0.000 - 0.0160 in/in	Average value: 0.00900 cm/cm Grade Count:16
	0.500 - 42.0 g/10 min	0.500 - 42.0 g/10 min	Average value: 10.7 g/10 min Grade

Melt Flow Physical Properties	Metric	English	Count:249 Comments
Ash	0.000 - 34.0 %	0.000 - 34.0 %	Average value: 10.7 % Grade Count:14
	19.0 - 19.0 %	19.0 - 19.0 %	Average value: 19.0 % Grade Count:3
	@Temperature 600 - 950 °C	@Temperature 1110 - 1740 °F	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	49.0 - 95.0	49.0 - 95.0	Average value: 79.1 Grade Count:16
Hardness, Shore A	33.0 - 95.0	33.0 - 95.0	Average value: 68.1 Grade Count:130
Hardness, Shore D	11.0 - 95.0	11.0 - 95.0	Average value: 53.5 Grade Count:184
Ball Indentation Hardness	33.0 - 43.0 MPa	4790 - 6240 psi	Average value: 35.6 MPa Grade Count:7
Tensile Strength, Ultimate	0.689 - 57.0 MPa	100 - 8270 psi	Average value: 11.3 MPa Grade Count:258
Film Tensile Strength at Yield, MD	2.95 - 5.40 MPa	428 - 783 psi	Average value: 4.50 MPa Grade Count:4
Film Tensile Strength at Yield, TD	3.24 - 5.20 MPa	470 - 754 psi	Average value: 4.34 MPa Grade Count:4
Tensile Strength, Yield	1.00 - 33.0 MPa	145 - 4790 psi	Average value: 12.5 MPa Grade Count:220
Film Elongation at Break, MD	410 - 460 %	410 - 460 %	Average value: 438 % Grade Count:4
Film Elongation at Break, TD	480 - 820 %	480 - 820 %	Average value: 645 % Grade Count:4
Elongation at Break	8.00 - 2000 %	8.00 - 2000 %	Average value: 443 % Grade Count:297
Elongation at Yield	4.00 - 525 %	4.00 - 525 %	Average value: 40.0 % Grade Count:67
Modulus of Elasticity	0.000986 - 2.10 GPa	0.143 - 305 ksi	Average value: 0.583 GPa Grade Count:31
Flexural Yield Strength	3.45 - 68.9 MPa	500 - 10000 psi	Average value: 22.2 MPa Grade Count:32
Flexural Modulus	0.00540 - 4.60 GPa	0.783 - 667 ksi	Average value: 0.967 GPa Grade Count:233
Secant Modulus	0.0310 - 0.239 GPa	4.50 - 34.7 ksi	Average value: 0.101 GPa Grade Count:10
Secant Modulus, MD	0.0343 - 0.0719 GPa	4.97 - 10.4 ksi	Average value: 0.0522 GPa Grade Count:4
Secant Modulus, TD	0.0359 - 0.0744 GPa	5.20 - 10.8 ksi	Average value: 0.0552 GPa Grade Count:4
Izod Impact, Notched	0.395 J/cm - NB	0.740 ft-lb/in - NB	Average value: 4.34 J/cm Grade Count:89

Mechanical Properties	Metric	English	Comments
	0.43112 - 7.68816 J/cm	0.0017 - 14.4031 ft-lb/in	Average value: 1.66 J/cm Grade Count:31
	@Temperature -40.0 - - 18.0 °C	@Temperature -40.0 - - 0.400 °F	
Izod Impact, Unnotched	6.94 - 5340 J/cm	13.0 - 10000 ft-lb/in	Average value: 6.94 J/cm Grade Count:14
Izod Impact, Notched (ISO)	3.80 kJ/m² - NB	1.81 ft-lb/in² - NB	Average value: 34.5 kJ/m² Grade Count:41
	1.10 kJ/m² - NB	0.523 ft-lb/in² - NB	Average value: 8.84 kJ/m² Grade Count:32
	@Temperature -40.0 - 10.0 °C	@Temperature -40.0 - 50.0 °F	
Izod Impact, Unnotched (ISO)	46.0 - 48.0 kJ/m²	21.9 - 22.8 ft-lb/in²	Average value: 46.7 kJ/m² Grade Count:3
Charpy Impact Unnotched	4.50 J/cm² - NB	21.4 ft-lb/in² - NB	Average value: 20.8 J/cm² Grade Count:18
	4.50 J/cm² - NB	21.4 ft-lb/in² - NB	Average value: 18.0 J/cm² Grade Count:15
	@Temperature -40.0 - - 20.0 °C	@Temperature -40.0 - - 4.00 °F	
Charpy Impact, Notched	1.30 - 6.50 J/cm²	6.19 - 30.9 ft-lb/in²	Average value: 4.07 J/cm² Grade Count:15
	0.200 - 1.00 J/cm²	0.952 - 4.76 ft-lb/in²	Average value: 0.508 J/cm² Grade Count:15
	@Temperature -30.0 - - 20.0 °C	@Temperature -22.0 - - 4.00 °F	
Gardner Impact	4.90 J - NB	3.61 ft-lb - NB	Average value: 56.5 J Grade Count:67
	1.00 - 48.0 J	0.738 - 35.4 ft-lb	Average value: 27.9 J Grade Count:73
	@Temperature -30.0 - - 30.0 °C	@Temperature -22.0 - - 22.0 °F	
Dart Drop, Total Energy	16.0 - 18.0 J	11.8 - 13.3 ft-lb	Average value: 16.7 J Grade Count:3
	17.0 - 25.0 J	12.5 - 18.4 ft-lb	Average value: 22.6 J Grade Count:20
	@Temperature -30.0 - 0.000 °C	@Temperature -22.0 - 32.0 °F	
Tear Strength	7.01 - 550 kN/m	40.0 - 3140 pli	Average value: 65.3 kN/m Grade Count:158
Graves Tear Strength	14.2 - 52.6 kN/m	81.0 - 300 pli	Average value: 28.7 kN/m Grade Count:12
Elmendorf Tear Strength, MD	2.56 - 12.2 g/micron	65.0 - 310 g/mil	Average value: 8.46 g/micron Grade Count:3
Elmendorf Tear Strength, TD	4.92 - 25.2 g/micron	125 - 640 g/mil	Average value: 16.6 g/micron Grade Count:3

Dart Drop Mechanical Properties	22.4 - 57.1 g/micron Metric	570 - 1450 g/mil English	Average value: 42.4 g/micron Grade Count:9
Taber Abrasion, mg/1000 Cycles	10.0 - 189	10.0 - 189	Average value: 89.2 Grade Count:9
Compression Set	10.0 - 79.0 %	10.0 - 79.0 %	Average value: 30.2 % Grade Count:59
	33.0 - 95.0 %	33.0 - 95.0 %	Average value: 53.4 % Grade Count:52
	@Temperature 70.0 - 100 °C	@Temperature 158 - 212 °F	
	27.0 - 57.0 %	27.0 - 57.0 %	Average value: 53.4 % Grade Count:8
	@Temperature 70.0 - 100 °C	@Temperature 158 - 212 °F	
	27.0 - 57.0 %	27.0 - 57.0 %	Average value: 53.4 % Grade Count:8
	@Time 79200 - 79200 sec	@Time 22.0 - 22.0 hour	
Tensile Set	3.40 - 16.0 %	3.40 - 16.0 %	Average value: 8.54 % Grade Count:12

Contact Songhan Plastic Technology Co.,Ltd.

Website : www.lookpolymers.com

Email : sales@lookpolymers.com

Tel : +86 021-51131842

Mobile : +86 13061808058

Skype : lookpolymers

Address : United North Road 215,Fengxian District, Shanghai City,China