

Overview of materials for Thermoset Fluoroelastomer

Category : Polymer , Thermoset , Fluoropolymer, TS , Thermoset Fluoroelastomer , Rubber or Thermoset Elastomer (TSE)

Material Notes:

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

Physical Properties	Metric	English	Comments
Density	0.900 - 3.80 g/cc	0.0325 - 0.137 lb/in ³	Average value: 1.85 g/cc Grade Count:257
Oxygen Transmission	88.0 - 150 cc-mm/m ² -24hr-atm	224 - 381 cc-mil/100 in ² -24hr-atm	Average value: 104 cc-mm/m ² -24hr-atm Grade Count:42
Mooney Viscosity	3.00 - 200	3.00 - 200	Average value: 53.2 Grade Count:312

Mechanical Properties	Metric	English	Comments
Hardness, Shore A	38.0 - 100	38.0 - 100	Average value: 73.5 Grade Count:613
	35.0 - 85.0	35.0 - 85.0	Average value: 86.0 Grade Count:1
	@Temperature 225 - 225 °C	@Temperature 437 - 437 °F	
Hardness, Shore D	58.0 - 98.0	58.0 - 98.0	Average value: 86.0 Grade Count:11
	@Temperature 93.3 - 200 °C	@Temperature 200 - 392 °F	
	58.0 - 98.0	58.0 - 98.0	Average value: 86.0 Grade Count:11
	@Time 252000 - 3.60e+6 sec	@Time 70.0 - 1000 hour	
Hardness, Shore D	47.0 - 80.0	47.0 - 80.0	Average value: 59.8 Grade Count:4
Hardness, Shore M	72.0 - 83.0	72.0 - 83.0	Average value: 78.5 Grade Count:11
Tensile Strength, Ultimate	0.750 - 130 MPa	109 - 18900 psi	Average value: 13.4 MPa Grade Count:541
	17.24 - 20.68 MPa	2500 - 2999 psi	Average value: 17.8 MPa Grade Count:1
	@Temperature 225 - 225 °C	@Temperature 437 - 437 °F	
	8.40471 - 25.7933 MPa	1219.00 - 3741.01 psi	Average value: 17.8 MPa Grade Count:16
	@Temperature 93.3 -	@Temperature 200 -	

Mechanical Properties	275 °C Metric	527 °F English	Comments
	8.40471 - 25.7933 MPa	1219.00 - 3741.01 psi	Average value: 17.8 MPa Grade Count:16
	@Time 86400 - 3.60e+6 sec	@Time 24.0 - 1000 hour	
Tensile Strength, Yield	0.300 - 23.0 MPa	43.5 - 3340 psi	Average value: 6.03 MPa Grade Count:570
Elongation at Break	3.10 - 500 %	3.10 - 500 %	Average value: 217 % Grade Count:640
	150 - 160 %	150 - 160 %	Average value: 196 % Grade Count:1
	@Temperature 225 - 225 °C	@Temperature 437 - 437 °F	
	61.6 - 456.5 %	61.6 - 456.5 %	Average value: 196 % Grade Count:16
	@Temperature 93.3 - 275 °C	@Temperature 200 - 527 °F	
	61.6 - 456.5 %	61.6 - 456.5 %	Average value: 196 % Grade Count:16
	@Time 86400 - 3.60e+6 sec	@Time 24.0 - 1000 hour	
Modulus of Elasticity	0.000600 - 9.20 GPa	0.0870 - 1330 ksi	Average value: 0.234 GPa Grade Count:42
Compressive Modulus	0.000300 - 0.0153 GPa	0.0435 - 2.22 ksi	Average value: 0.00534 GPa Grade Count:4
Shear Modulus	0.00193 - 0.0243 GPa	0.280 - 3.53 ksi	Average value: 0.00760 GPa Grade Count:19
	0.0430 - 0.0430 GPa	6.24 - 6.24 ksi	Average value: 0.0430 GPa Grade Count:2
	@Temperature -12.0 - -12.0 °C	@Temperature 10.4 - 10.4 °F	
Secant Modulus	0.00512 - 0.0685 GPa	0.743 - 9.94 ksi	Average value: 0.0215 GPa Grade Count:19
Coefficient of Friction	0.500 - 1.16	0.500 - 1.16	Average value: 0.791 Grade Count:51
Tear Strength Test	132 - 359	132 - 359	Average value: 232 Grade Count:21
Tear Strength	3.06 - 168 kN/m	17.5 - 959 pli	Average value: 24.5 kN/m Grade Count:89
	5.20 - 10.4 kN/m	29.7 - 59.3 pli	Average value: 8.16 kN/m Grade Count:5
	@Temperature 150 - 150 °C	@Temperature 302 - 302 °F	
Taber Abrasion, mg/1000 Cycles	40.0 - 325	40.0 - 325	Average value: 184 Grade Count:5
Compression Set	3.00 - 69.0 %	3.00 - 69.0 %	Average value: 22.0 % Grade Count:264
	4.00 - 65.0 %	4.00 - 65.0 %	

Mechanical Properties	Metric	English	Comments
	@Temperature 100 - 300 °C	@Temperature 212 - 572 °F	Average value: 24.0 % Grade Count:237
	4.00 - 91.0 %	4.00 - 91.0 %	Average value: 24.0 % Grade Count:237
	@Temperature 0.000 - 325 °C	@Temperature 32.0 - 617 °F	
	4.00 - 91.0 %	4.00 - 91.0 %	Average value: 24.0 % Grade Count:237
	@Time 79200 - 2.42e+6 sec	@Time 22.0 - 672 hour	

Thermal Properties	Metric	English	Comments
CTE, linear	19.0 - 570 µm/m-°C	10.6 - 317 µin/in-°F	Average value: 223 µm/m-°C Grade Count:49
Specific Heat Capacity	1.65 - 1.67 J/g-°C	0.394 - 0.399 BTU/lb-°F	Average value: 1.65 J/g-°C Grade Count:40
	0.945 - 1.053 J/g-°C	0.226 - 0.2517 BTU/lb-°F	Average value: 0.991 J/g-°C Grade Count:4
	@Temperature 50.0 - 150 °C	@Temperature 122 - 302 °F	
Thermal Conductivity	0.200 - 0.300 W/m-K	1.39 - 2.08 BTU-in/hr-ft ² -°F	Average value: 0.235 W/m-K Grade Count:40
	0.170 - 0.190 W/m-K	1.18 - 1.32 BTU-in/hr-ft ² -°F	Average value: 0.180 W/m-K Grade Count:4
	@Temperature 50.0 - 200 °C	@Temperature 122 - 392 °F	
Maximum Service Temperature, Air	93.3 - 350 °C	200 - 662 °F	Average value: 235 °C Grade Count:298
Minimum Service Temperature, Air	-65.0 - 2.22 °C	-85.0 - 36.0 °F	Average value: -20.0 °C Grade Count:299
Brittleness Temperature	-60.0 - -6.00 °C	-76.0 - 21.2 °F	Average value: -24.6 °C Grade Count:100
Glass Transition Temp, Tg	-51.1 - 3.00 °C	-60.0 - 37.4 °F	Average value: -18.6 °C Grade Count:174
Transformation Temperature	-40.0 - -2.00 °C	-40.0 - 28.4 °F	Average value: -8.54 °C Grade Count:13
Flash Point	15.6 - 400 °C	60.1 - 752 °F	Average value: 323 °C Grade Count:93

Optical Properties	Metric	English	Comments
Transmission, Visible	25.0 - 90.0 %	25.0 - 90.0 %	Average value: 35.8 % Grade Count:6

Component Elements Properties	Metric	English	Comments
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Fluorine F Component Elements Properties	Metric 64.0 - 73.0 %	English 64.0 - 73.0 %	Comments Average value: 67.4 % Grade Count:56
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Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.00500 - 5.00e+17 ohm-cm	0.00500 - 5.00e+17 ohm-cm	Average value: 4.06e+16 ohm-cm Grade Count:53
Shielding Effectiveness	70.0 - 113 dB	70.0 - 113 dB	Average value: 98.3 dB Grade Count:3
Dielectric Constant	2.50 - 11.4	2.50 - 11.4	Average value: 9.80 Grade Count:44
Dielectric Strength	2.60 - 25.0 kV/mm	66.0 - 635 kV/in	Average value: 23.1 kV/mm Grade Count:51
Dissipation Factor	0.00500	0.00500	Average value: 0.00500 Grade Count:4

Processing Properties	Metric	English	Comments
Processing Temperature	160 - 260 °C	320 - 500 °F	Average value: 201 °C Grade Count:170
Die Temperature	70.0 - 260 °C	158 - 500 °F	Average value: 138 °C Grade Count:3
Cure Time	1.50 - 4320 min	0.0250 - 72.0 hour	Average value: 324 min Grade Count:27
	10.0 - 10.0 min @Temperature 121 - 121 °C	0.167 - 0.167 hour @Temperature 250 - 250 °F	Average value: 10.0 min Grade Count:2

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