

Overview of materials for Polyvinylidene fluoride (PVDF), Molded/Extruded

Category : Polymer , Thermoplastic , Fluoropolymer , PVDF , Polyvinylidene fluoride (PVDF), Molded/Extruded

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Polyvinylidene fluoride (PVDF), Molded/Extruded". 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-Polyvinylidene fluoride-PVDF-MoldedExtruded.php

Physical Properties	Metric	English	Comments
Density	1.69 - 1.88 g/cc	0.0611 - 0.0679 lb/in ³	Average value: 1.78 g/cc Grade Count:105
Water Absorption	0.000 - 0.200 %	0.000 - 0.200 %	Average value: 0.0415 % Grade Count:85
Moisture Absorption at Equilibrium	0.000 - 0.0500 %	0.000 - 0.0500 %	Average value: 0.0233 % Grade Count:9
Water Absorption at Saturation	0.000 - 0.0500 %	0.000 - 0.0500 %	Average value: 0.0362 % Grade Count:8
Particle Size	5.00 µm	5.00 µm	Average value: 5.00 µm Grade Count:14
Viscosity	1200 - 2.00e+7 cP	1200 - 2.00e+7 cP	Average value: 2.16e+6 cP Grade Count:53
	@Temperature 232 - 260 °C	@Temperature 450 - 500 °F	
	1200 - 2.00e+7 cP	1200 - 2.00e+7 cP	Average value: 2.16e+6 cP Grade Count:53
	@Shear Rate 50.0 - 100 1/s	@Shear Rate 50.0 - 100 1/s	
Viscosity Test	0.850 - 170 cm ³ /g	0.850 - 170 cm ³ /g	Average value: 46.5 cm ³ /g Grade Count:7
	@Temperature 30.0 - 30.0 °C	@Temperature 86.0 - 86.0 °F	
Linear Mold Shrinkage	0.0100 - 0.0350 cm/cm	0.0100 - 0.0350 in/in	Average value: 0.0255 cm/cm Grade Count:29
Linear Mold Shrinkage, Transverse	0.00800 - 0.0300 cm/cm	0.00800 - 0.0300 in/in	Average value: 0.0226 cm/cm Grade Count:6
Melt Flow	0.500 - 40.0 g/10 min	0.500 - 40.0 g/10 min	Average value: 8.85 g/10 min Grade Count:96
Ash	0.000 - 5.00 %	0.000 - 5.00 %	Average value: 2.50 % Grade Count:4

Mechanical Properties	Metric	English	Comments
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Hardness, Rockwell R Mechanical Properties	62.0 - 115 Metric	62.0 - 115 English	Average value: 92.3 Grade Count:3 Comments
Hardness, Shore D	47.0 - 82.0	47.0 - 82.0	Average value: 72.0 Grade Count:62
Ball Indentation Hardness	62.0 - 105 MPa	8990 - 15200 psi	Average value: 92.5 MPa Grade Count:4
Tensile Strength, Ultimate	12.0 - 714 MPa	1740 - 104000 psi	Average value: 124 MPa Grade Count:86
	1.00 - 39.0 MPa @Temperature 50.0 - 100 °C	145 - 5660 psi @Temperature 122 - 212 °F	Average value: 14.6 MPa Grade Count:6
	1.00 - 39.0 MPa @Strain 20.0 - 20.0 %	145 - 5660 psi @Strain 20.0 - 20.0 %	Average value: 14.6 MPa Grade Count:6
Tensile Strength, Yield	11.7 - 141 MPa	1700 - 20500 psi	Average value: 42.0 MPa Grade Count:90
Elongation at Break	4.50 - 800 %	4.50 - 800 %	Average value: 175 % Grade Count:108
Elongation at Yield	2.00 - 25.0 %	2.00 - 25.0 %	Average value: 10.5 % Grade Count:76
Creep Strength	3.70 - 3.70 MPa @Temperature 60.0 - 90.0 °C	537 - 537 psi @Temperature 140 - 194 °F	Average value: 3.70 MPa Grade Count:4
	3.70 - 3.70 MPa @Time 360000 - 3.60e+6 sec	537 - 537 psi @Time 100 - 1000 hour	Average value: 3.70 MPa Grade Count:4
Modulus of Elasticity	0.100 - 7.00 GPa	14.5 - 1020 ksi	Average value: 1.54 GPa Grade Count:94
	0.0500 - 1.40 GPa @Temperature 50.0 - 100 °C	7.25 - 203 ksi @Temperature 122 - 212 °F	Average value: 0.422 GPa Grade Count:5
Tenacity	0.371 - 0.416 N/tex	4.20 - 4.71 g/denier	Average value: 0.380 N/tex Grade Count:5
Flexural Yield Strength	10.0 - 207 MPa	1450 - 30000 psi	Average value: 52.0 MPa Grade Count:48
Flexural Modulus	0.192 - 8.55 GPa	27.8 - 1240 ksi	Average value: 1.63 GPa Grade Count:56
Compressive Yield Strength	3.00 - 172 MPa	435 - 24900 psi	Average value: 51.2 MPa Grade Count:33
Izod Impact, Notched	0.400 - 5340 J/cm	0.749 - 10000 ft-lb/in	Average value: 3.00 J/cm Grade Count:60
Izod Impact, Unnotched	2.67 J/cm - NB	5.00 ft-lb/in - NB	Average value: 19.0 J/cm Grade Count:34

Mechanical Properties	Metric	English	Comments
	21.0 - 26.0 J/cm ²	99.9 - 124 ft-lb/in ²	Average value: 26.5 J/cm ² Grade Count:4
	@Temperature -30.0 - -30.0 °C	@Temperature -22.0 - -22.0 °F	
Charpy Impact, Notched	0.600 - 1000 J/cm ²	2.86 - 4760 ft-lb/in ²	Average value: 2.75 J/cm ² Grade Count:13
	0.500 - 1.10 J/cm ²	2.38 - 5.24 ft-lb/in ²	Average value: 0.700 J/cm ² Grade Count:6
	@Temperature -30.0 - -30.0 °C	@Temperature -22.0 - -22.0 °F	
Tensile Impact Strength	140 - 210 kJ/m ²	66.6 - 99.9 ft-lb/in ²	Average value: 170 kJ/m ² Grade Count:3
Coefficient of Friction	0.100 - 0.540	0.100 - 0.540	Average value: 0.262 Grade Count:63
Coefficient of Friction, Static	0.0500 - 0.550	0.0500 - 0.550	Average value: 0.291 Grade Count:55
Taber Abrasion, mg/1000 Cycles	5.00 - 33.0	5.00 - 33.0	Average value: 11.0 Grade Count:54

Thermal Properties	Metric	English	Comments
CTE, linear	36.0 - 216 µm/m-°C	20.0 - 120 µin/in-°F	Average value: 139 µm/m-°C Grade Count:76
	86.0 - 370 µm/m-°C	47.8 - 206 µin/in-°F	Average value: 185 µm/m-°C Grade Count:5
	@Temperature -40.0 - 85.0 °C	@Temperature -40.0 - 185 °F	
CTE, linear, Transverse to Flow	100 µm/m-°C	55.6 µin/in-°F	Average value: 100 µm/m-°C Grade Count:3
Specific Heat Capacity	1.17 - 1.90 J/g-°C	0.280 - 0.454 BTU/lb-°F	Average value: 1.30 J/g-°C Grade Count:53
	1.60 - 1.60 J/g-°C	0.382 - 0.382 BTU/lb-°F	Average value: 1.60 J/g-°C Grade Count:21
	@Temperature 100 - 100 °C	@Temperature 212 - 212 °F	
Thermal Conductivity	0.110 - 0.300 W/m-K	0.763 - 2.08 BTU-in/hr-ft ² -°F	Average value: 0.182 W/m-K Grade Count:62
	0.190 - 0.190 W/m-K	1.32 - 1.32 BTU-in/hr-ft ² -°F	Average value: 0.190 W/m-K Grade Count:1
	@Temperature 40.0 - 40.0 °C	@Temperature 104 - 104 °F	
Melting Point	116 - 180 °C	240 - 356 °F	Average value: 161 °C Grade Count:117

Electrical Properties	Metric	English	Comments
Electrical Resistivity	100 - 5.00e+16 ohm-cm	100 - 5.00e+16 ohm-cm	Average value: 1.25e+15 ohm-cm Grade Count:86
Surface Resistance	100 - 1.00e+16 ohm	100 - 1.00e+16 ohm	Average value: 3.89e+14 ohm Grade Count:42
Dielectric Constant	3.20 - 33.5	3.20 - 33.5	Average value: 7.93 Grade Count:67
Dielectric Strength	10.0 - 150 kV/mm	254 - 3810 kV/in	Average value: 42.4 kV/mm Grade Count:58
Dissipation Factor	0.00500 - 0.370	0.00500 - 0.370	Average value: 0.124 Grade Count:48
Dielectric Loss Index	0.0250 - 0.165	0.0250 - 0.165	Average value: 0.100 Grade Count:3
Arc Resistance	50.0 sec	50.0 sec	Average value: 50.0 sec Grade Count:3
Comparative Tracking Index	250 - 600 V	250 - 600 V	Average value: 344 V Grade Count:4

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