

Solvay Specialty Polymers Solef® 61010 PVDF Copolymer (discontinued **)

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

Material Notes:

Key features of this grade: Permanent Plasticizing, Fuel Line, Piping, Formulated. Recommended processing is extrusion. Available as granules. General information about SOLEF® PVDF: SOLEF® PVDF is a fluorinated semi-crystalline thermoplastic which is obtained by polymerizing vinylidene fluoride. Important properties include excellent chemical resistance to most aggressive substances and solvents, excellent mechanical strength and toughness, high abrasion resistance, high temperature capabilities, excellent aging resistance, high purity, resistance to UV and nuclear radiation, excellent intrinsic fire resistance, resistance to weathering, low permeability to most gases and liquids, and easily melt-processed by standard methods of molding and extrusion. Tensile properties are achieved with varying methods of sample fabrication. Information provided by Solvay Solexis, Inc.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Solvay-Specialty-Polymers-Solef-61010-PVDF-Copolymer-nbspdiscontinued-.php

Physical Properties	Metric	English	Comments
Density	1.76 g/cc	0.0636 lb/in³	ISO 1183
Water Absorption	<= 0.040 %	<= 0.040 %	ISO 62 (method 1)
Melt Flow	1.2 g/10 min	1.2 g/10 min	ASTM D1238
	@Load 5.00 kg, Temperature 230 °C	@Load 11.0 lb, Temperature 446 °F	
	4.0 g/10 min	4.0 g/10 min	ASTM D1238
	@Load 10.0 kg, Temperature 230 °C	@Load 22.0 lb, Temperature 446 °F	

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	61	61	ASTM D2240
	@Thickness 2.00 mm	@Thickness 0.0787 in	
Tensile Strength, Ultimate	21.0 - 30.0 MPa	3050 - 4350 psi	50 mm/min; ASTM D638
Tensile Strength, Yield	20.0 - 30.0 MPa	2900 - 4350 psi	50 mm/min; ASTM D638
Elongation at Break	250 - 500 %	250 - 500 %	50 mm/min; ASTM D638
Elongation at Yield	10 - 15 %	10 - 15 %	50 mm/min; ASTM D638
Modulus of Elasticity	0.700 GPa	102 ksi	1 mm/min; ASTM D638
Izod Impact, Notched	12.0 J/cm	22.5 ft-lb/in	Notched V 10 mm; ASTM D256
	@Thickness 4.00 mm, Temperature 23.0 °C	@Thickness 0.157 in, Temperature 73.4 °F	
Coefficient of Friction	0.20 - 0.30	0.20 - 0.30	ASTM D1894

Mechanical Properties	Metric	English	Comments
Coefficient of Friction, Static	0.20 - 0.40	0.20 - 0.40	ASTM D1894
Taber Abrasion, mg/1000 Cycles	5.0 - 15	5.0 - 15	CS10 / 1 kg

Thermal Properties	Metric	English	Comments
Heat of Fusion	34.0 J/g	14.6 BTU/lb	Crystallization Heat
	37.0 J/g	15.9 BTU/lb	80°C to end of melting
CTE, linear	130 - 160 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$ @Temperature 20.0 $^{\circ}\text{C}$	72.2 - 88.9 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$ @Temperature 68.0 $^{\circ}\text{F}$	ASTM D696
Specific Heat Capacity	1.20 J/g- $^{\circ}\text{C}$	0.287 BTU/lb- $^{\circ}\text{F}$	
	1.60 J/g- $^{\circ}\text{C}$ @Temperature 100 $^{\circ}\text{C}$	0.382 BTU/lb- $^{\circ}\text{F}$ @Temperature 212 $^{\circ}\text{F}$	
Thermal Conductivity	0.200 W/m-K	1.39 BTU-in/hr-ft 2 - $^{\circ}\text{F}$	ASTM C177
Melting Point	171 $^{\circ}\text{C}$	340 $^{\circ}\text{F}$	Crystallinity by DSC; ASTM D 3418
Crystallization Temperature	138 $^{\circ}\text{C}$	280 $^{\circ}\text{F}$	
Deflection Temperature at 0.46 MPa (66 psi)	81.0 $^{\circ}\text{C}$ @Thickness 4.00 mm	178 $^{\circ}\text{F}$ @Thickness 0.157 in	after annealing 150 $^{\circ}\text{C}$ 16 hr; ASTM D648
Deflection Temperature at 1.8 MPa (264 psi)	49.0 $^{\circ}\text{C}$ @Thickness 4.00 mm	120 $^{\circ}\text{F}$ @Thickness 0.157 in	after annealing 150 $^{\circ}\text{C}$ 16 hr; ASTM D648
Vicat Softening Point	154 $^{\circ}\text{C}$ @Load 1.00 kg, Thickness 4.00 mm	309 $^{\circ}\text{F}$ @Load 2.20 lb, Thickness 0.157 in	ISO 306
Brittleness Temperature	-35.0 $^{\circ}\text{C}$	-31.0 $^{\circ}\text{F}$	ASTM D746A
Glass Transition Temp, Tg	-28.0 $^{\circ}\text{C}$	-18.4 $^{\circ}\text{F}$	DMTA
Decomposition Temperature	320 - 340 $^{\circ}\text{C}$	608 - 644 $^{\circ}\text{F}$	Thermal Stability via TGA : beginning - and at 1% weight loss in air
Oxygen Index	46 % @Thickness 3.00 mm	46 % @Thickness 0.118 in	sheet; ASTM D2863

Electrical Properties	Metric	English	Comments
Electrical Resistivity	$\geq 1.00\text{e}+14$ ohm-cm	$\geq 1.00\text{e}+14$ ohm-cm	Intensity = 10 mA after 2 min @ 23 $^{\circ}\text{C}$; ASTM D 257; DIN 53483
Surface Resistance	$\geq 1.00\text{e}+14$ ohm	$\geq 1.00\text{e}+14$ ohm	Voltage < 1 V after 2 min - 500 V; ASTM D 257/DIN 53483

Electrical Properties	Metric	English	Comments
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