

Solvay Specialty Polymers Solef® 20810 PVDF Copolymer (discontinued **)

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

Material Notes:

Key features of this grade: Li Battery, Virgin. Recommended processing is solution. Available as powder & 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-20810-PVDF-Copolymer-nbspdiscontinued-.php

Physical Properties	Metric	English	Comments
Density	1.78 g/cc	0.0643 lb/in ³	ISO 1183
Water Absorption	<= 0.040 %	<= 0.040 %	ISO 62 (method 1)
Linear Mold Shrinkage	0.020 - 0.030 cm/cm	0.020 - 0.030 in/in	
Melt Flow	2.0 g/10 min	2.0 g/10 min	ASTM D1238
	@Load 2.16 kg, Temperature 230 °C	@Load 4.76 lb, Temperature 446 °F	
	6.0 g/10 min	6.0 g/10 min	ASTM D1238
	@Load 5.00 kg, Temperature 230 °C	@Load 11.0 lb, Temperature 446 °F	

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	60	60	ASTM D2240
	@Thickness 2.00 mm	@Thickness 0.0787 in	
Tensile Strength, Ultimate	30.0 - 50.0 MPa	4350 - 7250 psi	50 mm/min; ASTM D638
Tensile Strength, Yield	15.0 - 18.0 MPa	2180 - 2610 psi	50 mm/min; ASTM D638
Elongation at Break	600 - 750 %	600 - 750 %	50 mm/min; ASTM D638
Elongation at Yield	12 - 15 %	12 - 15 %	50 mm/min; ASTM D638
Modulus of Elasticity	0.360 - 0.480 GPa	52.2 - 69.6 ksi	1 mm/min; ASTM D638
Flexural Modulus	0.360 - 0.440 GPa	52.2 - 63.8 ksi	2 mm/min; ASTM D790
	1.80 J/cm	3.37 ft-lb/in	

Impact Notched Mechanical Properties	Metric @ Thickness 4.00 mm, Temperature 23.0 °C	English @ Thickness 0.157 in, Temperature 73.4 °F	Notched V 10 mm; ASTM D256 Comments
Coefficient of Friction	0.20 - 0.30	0.20 - 0.30	ASTM D1894
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	23.0 J/g	9.89 BTU/lb	80°C to end of melting
	24.0 J/g	10.3 BTU/lb	Crystallization Heat
CTE, linear	150 - 180 µm/m-°C @Temperature 20.0 °C	83.3 - 100 µin/in-°F @Temperature 68.0 °F	ASTM D696
Specific Heat Capacity	1.20 J/g-°C	0.287 BTU/lb-°F	
	1.60 J/g-°C @Temperature 100 °C	0.382 BTU/lb-°F @Temperature 212 °F	
Thermal Conductivity	0.180 W/m-K	1.25 BTU-in/hr-ft ² -°F	ASTM C177
Melting Point	135 °C	275 °F	Crystallinity by DSC; ASTM D 3418
Crystallization Temperature	92.0 °C	198 °F	
Deflection Temperature at 0.46 MPa (66 psi)	62.0 °C @Thickness 4.00 mm	144 °F @Thickness 0.157 in	after annealing 150°C 16 hr; ASTM D648
Deflection Temperature at 1.8 MPa (264 psi)	40.0 °C @Thickness 4.00 mm	104 °F @Thickness 0.157 in	after annealing 150°C 16 hr; ASTM D648
Vicat Softening Point	120 °C @Load 1.00 kg, Thickness 4.00 mm	248 °F @Load 2.20 lb, Thickness 0.157 in	ISO 306
Brittleness Temperature	-22.0 °C	-7.60 °F	ASTM D746A
Glass Transition Temp, Tg	-29.0 °C	-20.2 °F	DMTA
Decomposition Temperature	330 - 350 °C	626 - 662 °F	Thermal Stability via TGA : beginning - and at 1% weight loss in air
Oxygen Index	44 % @Thickness 3.00 mm	44 % @Thickness 0.118 in	sheet; ASTM D2863

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

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