

# Solef® 11010

## polyvinylidene fluoride

Solef® 11010 PVDF is a medium-viscosity flexible PVDF copolymer resin and is typically processed by extrusion.

### General

Material Status	• Commercial: Active
Availability	• Africa & Middle East • Asia Pacific • Europe • Latin America • North America
Features	• Copolymer • Good Flexibility • Medium Viscosity
Processing Method	• Extrusion

Physical	Typical Value	Unit	Test method
Density / Specific Gravity	1.75 to 1.80		ASTM D792
Melt Mass-Flow Rate (MFR) (230°C/5.0 kg)	4.0 to 8.0	g/10 min	ASTM D1238
Molding Shrinkage - Flow	2.0 to 3.0	%	
Water Absorption (24 hr, 23°C)	< 0.040	%	ASTM D570

Mechanical	Typical Value	Unit	Test method
Tensile Modulus <sup>1</sup> (23°C, 2.00 mm)	800 to 1200	MPa	ASTM D638
Tensile Strength <sup>2</sup>			ASTM D638
Yield, 23°C, 2.00 mm	20.0 to 35.0	MPa	
Break, 23°C, 2.00 mm	20.0 to 40.0	MPa	
Tensile Elongation <sup>2</sup>			ASTM D638
Yield, 23°C, 2.00 mm	10 to 12	%	
Break, 23°C, 2.00 mm	200 to 600	%	
Coefficient of Friction			ASTM D1894
vs. Itself - Dynamic	0.15 to 0.35		
vs. Itself - Static	0.20 to 0.40		
Taber Abrasion Resistance			ASTM D4060
1000 Cycles, 1000 g, CS-10 Wheel	5.00 to 15.0	mg	

Impact	Typical Value	Unit	Test method
Charpy Notched Impact Strength <sup>3</sup>			ASTM D6110
23°C, 4.00 mm	150 to 250	J/m	

Hardness	Typical Value	Unit	Test method
Durometer Hardness (Shore D, 1 sec, 2.00 mm)	70 to 75		ASTM D2240

Thermal	Typical Value	Unit	Test method
Glass Transition Temperature	-35.0	°C	ASTM D4065

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Thermal	Typical Value Unit	Test method
Vicat Softening Temperature	90.0 to 105 °C	ASTM D1525 <sup>4</sup>
Melting Temperature	158 to 162 °C	ASTM D3418
Peak Crystallization Temperature (DSC)	115 to 130 °C	ASTM D3418
CLTE – Flow (0 to 40°C)	1.8E-4 cm/cm/°C	ASTM D696
Specific Heat		ASTM E968
23°C	1200 J/kg/°C	
100°C	1600 J/kg/°C	
Thermal Conductivity (23°C)	0.19 W/m/K	ASTM C177
Crystallization Heat	30.0 to 40.0 J/g	ASTM D3417
Heat of Fusion	35.0 to 40.0 J/g	ASTM D3417
Electrical	Typical Value Unit	Test method
Surface Resistivity	> 1.0E+14 ohms	ASTM D257
Volume Resistivity	> 1.0E+14 ohms·cm	ASTM D257
Dielectric Strength (23°C, 1.00 mm)	20 to 25 kV/mm	ASTM D149
Dielectric Constant (23°C, 1 MHz)	7.00 to 10.0	ASTM D150
Dissipation Factor (23°C, 1 MHz)	0.20	ASTM D150
Flammability	Typical Value Unit	Test method
Flame Rating (0.100 mm)	V-0	UL 94
Oxygen Index (3.00 mm)	44 %	ASTM D2863

## Notes

Typical properties: these are not to be construed as specifications.

<sup>1</sup> Type IV, 1.0 mm/min

<sup>2</sup> Type IV, 50 mm/min

<sup>3</sup> 2 m/s

<sup>4</sup> Rate A (50°C/h), Loading 2 (50 N)

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