Solef® 6012
polyvinylidene fluoride

Solef® 6012 PVDF homopolymer is a high-viscosity PVDF resin and is typically processed by extrusion or compression molding.

General		
Material Status	• Commercial: Active	
Availability	• Africa & Middle East • Asia Pacific • Europe	• Latin America • North America
Features	• High Viscosity	• Homopolymer
Processing Method	• Compression Molding	• Extrusion

Physical	Typical Value	Unit	Test method
Density / Specific Gravity	1.75 to 1.80		ASTM D792
Melt Mass-Flow Rate (MFR) (230°C/10.0 kg)	4.0 to 7.0	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 [1] (23°C, 2.00 mm)	1700 to 2500	MPa	ASTM D638
Tensile Strength [2]			ASTM D638
Yield, 23°C, 2.00 mm	50.0 to 60.0	MPa	
Break, 23°C, 2.00 mm	30.0 to 50.0	MPa	
Tensile Elongation [2]			ASTM D638
Yield, 23°C, 2.00 mm	5.0 to 10	%	
Break, 23°C, 2.00 mm	20 to 300	%	
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 10.0	mg	

Impact	Typical Value	Unit	Test method
Charpy Notched Impact Strength [3]			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)	72 to 78		ASTM D2240

Thermal	Typical Value	Unit	Test method
Glass Transition Temperature	-40.0	°C	ASTM D4065
Vicat Softening Temperature	135 to 145	°C	ASTM D1525 [4]

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Thermal	Typical Value	Unit	Test method
Melting Temperature	170 to 174	°C	ASTM D3418
Peak Crystallization Temperature (DSC)	137 to 145	°C	ASTM D3418
CLTE - Flow (0 to 40°C)	1.4E-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)	0.20	W/m/K	ASTM C177
Crystallization Heat	50.0 to 60.0	J/g	ASTM D3417
Heat of Fusion	55.0 to 65.0	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 kHz)	7.00 to 10.0		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.

[1] Type IV, 1.0 mm/min

[2] Type IV, 50 mm/min

[3] 2 m/s

[4] Rate A (50°C/h), Loading 2 (50 N)

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