

SOLEF® 6020 / 1001

PVDF Homopolymer

Very high viscosity - Membranes - Lithium batteries
Exclusively available as powder - Solvent process

Physical properties	Standards	Units	
Density	ISO 1183	g/cm ³	1.78
Water absorption (24 h at 23°C)	ISO 62 (method 1)	%	< 0.04
Melt Flow Index	ASTM D 1238 230°C, 21.6 kg	g/10 min	1.3

Mechanical properties

Traction	ASTM D 638		
Tensile stress at yield	23 °C, 50 mm/min	MPa/psi	53 - 57/7685 - 8265
Tensile stress at break		MPa/psi	25 - 50/3625 - 7250
Elongation at yield		%	5 - 10
Elongation at break		%	15 - 50
Modulus	23 °C, 1 mm/min	MPa/psi	1650/239250
Flexion	ASTM D 790		
Maximum load	23 °C 2 mm/min	MPa/psi	66/9570
Modulus		MPa/psi	1800/261000
IZOD impact (notched V 10 mm - at 23 °C - 4 mm thick)	ISO 180/4A	kJ/m ²	58 ⁽¹⁾
Shore D Hardness (2 mm thick)	ASTM D 2240	-	76
Abrasion resistance	TABER CS 10/1 kg	mg/1000 rev	5 - 10
Friction coefficient: static	ASTM D 1894	-	0.2 - 0.4
dynamic		-	0.2 - 0.3

Thermal properties

Crystallinity by DSC	ASTM D 3418		
Melting point		°C/°F	171/340
Heat of fusion (80 °C to end of melting)		J/g	60
Crystallizing point		°C/°F	134/273
Crystallization heat		J/g	49
VICAT point (4 mm thick) load 1 kg	ISO 306	°C/°F	170/338
Deflection temperature (4 mm thick) load 0.46 MPa	ASTM D 648 after annealing	°C/°F	135/275
load 1.82 MPa		°C/°F	70/158
Glass transition (T _g)	DMTA	°C/°F	- 34/- 29
Brittleness temperature (on 2 mm pressed sheet)	ASTM D 746 A	°C/°F	- 28/- 18

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Thermal properties (continuation)	Standards	Units	
Thermal stability	TGA beginning- and at 1% weight loss in air	°C/°F	375 - 400/707 - 752
Linear thermal expansion coefficient	ASTM D 696	10 ⁻⁶ K ⁻¹	120 - 140
Thermal conductance at 23°C	ASTM C 177	W/m.K	0.2
Specific heat	23 °C & 100 °C	J/g.K	1.2 - 1.6

Electrical properties

Surface resistivity Voltage < 1V, after 2 min - 500 V at 23 °C	[ASTM D 257 DIN 53483	ohm/square	1.10 ¹⁴
Volume resistivity Intensity = 10 mA, after 2 min at 23 °C			
	[ASTM D 257 DIN 53483	ohm.cm	1.10 ¹⁴

Fire resistance

UL-94 Flammability test	UL-94	Class	-
Limiting Oxygen Index (sheet 3 mm thick)	ASTM D 2863	%	44

(1) Partial break.

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