SOLEF®

SOLEF® 6020 / 1001

PVDF Homopolymer from Solvay

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	**53 - 57**
Tensile stress at break	23 °C, 50 mm/min	MPa	**25 - 50**
Elongation at yield	23 °C, 50 mm/min	%	**5 - 10**
Elongation at break	23 °C, 50 mm/min	%	**15 - 50**
Modulus	23 °C, 1 mm/min	MPa	**1650**
Flexion	ASTM D 790		
Maximum load	23 °C	MPa	**66**
Modulus	2 mm/min	MPa	**1800**
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	**171**
Heat of fusion (80 °C to end of melting)		J/g	**60**
Crystallizing point		°C	**134**
Crystallization heat		J/g	**49**
VICAT point (4 mm thick)	ISO 306		
load 1 kg		°C	**170**
Deflection temperature (4 mm thick)	ASTM D 648		
load 0.46 MPa	after annealing	°C	**135**
load 1.82 MPa		°C	**70**
Glass transition (Tg)	DMTA	°C	**- 34**
Brittleness temperature (on 2 mm pressed sheet)	ASTM D 746 A	°C	**-28**

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Thermal properties (continuation)	Standards	Units	
Thermal stability	TGA beginning- and at 1% weight loss in air	°C	**375 - 400**
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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