PVDF 1000

Polyvinylidene Fluoride (PVDF)

Main Characteristics:

- High max. allowable service temperature in air (150˚C continuously)
- Good mechanical strength, stiffness and creep resistance (better than other fluoropolymers)
- Excellent chemical and hydrolysis resistance
- High toughness, also at low temperatures
- Good sliding properties and wear resistance
- Good dimensional stability
- Physiologically inert (suitable for food contact)
- Good electrical insulating properties
- Outstanding UV and weather resistance
- Inherent low flammability
- Fairly good resistance against high energy radiation (much better than other fluoropolymers)

PVDF 1000

(PVDF)
Colour: Natural (white)
PVDF 1000 is a highly crystalline un-reinforced fluoropolymer combining good mechanical, thermal and electrical properties with excellent chemical resistance. Its property profile makes PVDF 1000 a versatile engineering material, especially suitable for the manufacture of components for the petrochemical, chemical, metallurgical, pharmaceutical, food, paper, textile and nuclear industries.

PVDF 1000

Polyvinylidene Fluoride (PVDF)

PVDF 1000 is a highly crystalline fluoropolymer combining good mechanical, thermal and electrical properties with excellent chemical resistance.

- Excellent chemical and hydrolysis resistance
- High strength / stiffness
- Outstanding UV resistance
- Good electrical insulating properties
- High toughness (even at low temperatures)
- Good sliding properties and wear resistance
- Good resistance against high energy radiation
- Continuous temperature 150°C (max 160°C)

Common Applications:
Valve and pump components; Pipe linings; Wire covering; Seals; Components for the petrochemical, pharmaceutical, food and nuclear industries.

Delivery Programme

	min	max
Rod 1m long		
diameter (mm)	10	250
Rod 3m long		
diameter (mm)	10	60
Plate 1m long		
width (mm)	610	
thickness (mm)	8.0	100
Plate 3m long		
width (mm)	610	
thickness (mm)	8.0	25

Colour: White

Technical Specification

Property	ISO Method	Units	Values
Specific Gravity	1183	g/cm^3	1.79
Water absorption			
· Saturation in air (23°C/50% RH)	~	%	0.05
· Saturation in water (23°C)	~	%	0.05
Tensile strength*1	527	N/mm^2	50
Tensile modulus of elasticity*1	527	N/mm^2	2300
Elongation at break*1	527	%	>20
Impact - Charpy*1	179/1eU	kJ/m^2	no break
Impact - Charpy notched*1	180/2A	kJ/m^2	10
Hardness	Rockwell	~	M75
	Shore D	~	~
Melt point	~	°C	175
Max allowable service temperature in air			
· for short periods	~	°C	160
· continuously for 20,000 hrs	~	°C	150
Linear thermal expansion coefficient	~	$K^{-1} \times 10^{-5}$	13.0
Thermal conductivity	~	W/(K.m)	0.19
Flammability*2 (6mm thickness)	~	~	V-0
Volume resistivity*1	IEC93	Ω.cm	10^{15}
Dielectric strength*1	IEC243	kV/mm	18
Outside applications			
· UV resistance	~	~	A
Acids - strong (pH<3)	~	~	A
Alkalis - strong (pH>11)	~	~	A
Chlorinated hydrocarbons	~	~	A
Hot water	~	~	A

'A' - Acceptable service
'B' - Limited service
'C' - Unacceptable
*1 - Measured on dry test specimens (where applicable)
*2 - Tests completed by DSM EPP using UL test methods

PRODUCT DATA SHEET

PVDF 1000