

3M™ Dyneon™ TFM™ Modified PTFE TFM 1700

Polytetrafluoroethylene

3M Advanced Materials Division

Message:

Modified non free-flowing PTFE of the 2nd generation for compression moulding

Features

Meets ASTM D 4894 Type III, Grade 1 classification

Moulding powder with very small particle size

Improved particle coalescence

Dense polymer structure with reduced void content

Low permeability

Substantially lower deformation under load ("cold flow")

Good electrical and mechanical properties

Increased modulus of elasticity

Good weldability

Typical applications

Shaped parts

Cylinders

Skived films of >20 µm

Linings in the chemical processing industry (CPI)

General Information			
Features	Good Electrical Properties		
	Weldable		
Uses	Film		
	Liners		
Forms	Powder		
Processing Method	Compression Molding		
	Sintering		
Physical	Nominal Value	Unit	Test Method
Density	2.16	g/cm ³	ISO 12086
Apparent Density	0.41	g/cm ³	ISO 60
Molding Shrinkage	5.6	%	Internal Method
Average Particle Size	25	µm	ISO 13320
Compression Molding Molding Pressure	15.0	MPa	
Compression Molding Temperature	23 to 26	°C	
Sintering Temperature	375 to 380	°C	
Hardness	Nominal Value	Unit	Test Method
Shore Hardness (Shore D)	59		ISO 868
Mechanical	Nominal Value	Unit	Test Method

Tensile Modulus	650	MPa	ISO 527-2
Deformation Under Load			ASTM D621
15 MPa ¹	4.00	%	
15 MPa ²	9.00	%	
15 MPa ³	8.00	%	
Films	Nominal Value	Unit	Test Method
Tensile Strength (100 μm)	43.0	MPa	ISO 527-3
Tensile Elongation (Break, 100 μm)	630	%	ISO 527-3
Thermal	Nominal Value	Unit	Test Method
CLTE - Flow			DIN 53752
30 to 100°C	1.2E-4	cm/cm/°C	
30 to 200°C	1.4E-4	cm/cm/°C	
30 to 260°C	1.7E-4	cm/cm/°C	
Thermal Conductivity	0.22	W/m/K	DIN 52612
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	1.0E+17	ohms	IEC 60093
Volume Resistivity	1.0E+18	ohms·cm	IEC 60093
Electric Strength (0.100 mm)	90	kV/mm	ISO 12086
Flammability	Nominal Value	Unit	Test Method
Flame Rating	V-0		UL 94
NOTE			
1.	permanent		
2.	100 hr		
3.	24 hr		

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