3M™ Dyneon™ TFM™ Modified PTFE TFM 1705

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
Improved gel stability
Substantially lower deformation under load ("cold flow")
Good electrical and mechanical properties
Increased modulus of elasticity
Improved flex-life characteristics
Good weldability
Typical applications
Shaped parts
Large walled cylinders
Skived films of >20 µm
Linings in the chemical processing industry (CPI)
Diaphragms

General Information	
Features	Good Electrical Properties Weldable
Uses	Diaphragms Film Liners
Forms	Powder
Processing Method	Compression Molding Sintering

Physical	Nominal Value	Unit	Test Method
Density	2.16	g/cm³	ISO 12086
Apparent Density	0.41	g/cm³	ISO 60
Molding Shrinkage	5.4	%	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]	5.00	%	
15 MPa [2]	10.0	%	
15 MPa [3]	9.00	%	
Films	**Nominal Value**	**Unit**	**Test Method**
Tensile Strength (100 µm)	47.0	MPa	ISO 527-3
Tensile Elongation (Break, 100 µm)	560	%	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		

Recommended distributors for this material

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