dyneon

A 3M Company

Dyneon™

Modified granular PTFE for compression molding

TFM™ 1705 PTFE

Features and Benefits

- Meets ASTM D 4894 Type III, Grade 1 resin
- Non-free-flowing compression molding powder
- Very fine particle size
- Improved gel stability
- Denser polymer structure, low permeation
- Excellent flex life
- Improved weldability
- Lower deformation under load
- Very good electrical and mechanical properties
- Increased modulus of elasticity
- Excellent for tall, thick-walled billets

Typical properties (Data not for specification purposes)

Powder properties

Property	Value	Unit	Test Method
Bulk density	420	g/l	ASTM D 4894-98a
Average particle size	25	µ	ASTM D 4894-98a

Mechanical properties, measured at 23°C (73°F) on sintered moldings

Property	Value	Unit	Test Method
Tensile Strength	4800	psi	ASTM D 4894-98a
Elongation at break	450	%	ASTM D 4894-98a
Specific gravity	2.16	g/cc	ASTM D 4894-98a
Shrinkage	5.8	%	ASTM D 4894-98a
Tensile Modulus	94,250	psi	ASTM D 638
Deformation under Load		%	ASTM D 621
2175 psi – 24 hr	9		
2175 psi – 100 hr	10		
2175 psi – permanent	4.5		

Thermal properties

Property	Value	Unit	Test Method
Flammability	V-0		UL94
Melt point (initial)	342 ± 10	°C	ASTM D 4894-98a
(second)	327 ± 10	°C	ASTM D 4894-98a
Service Temperature Range	-200°C to 260°C (-328°F to 500°F)		

Electrical Properties

Property	Value	Unit	Test Method
Dielectric Strength	3.7	kV/mil	ASTM D149-95a

Dyneon™ TFM™ 1705 PTFE

Processing Information
If transport or storage temperatures are too high the material can agglomerate in its container. In such cases, it is advisable to store the material for 48 hours at below 23ºC (73ºF) and then sieve it (mesh size 4 mm) (.16 in) before filling the mold. To achieve optimum properties, compression molding should be carried out within a temperature range of 23ºC to 26ºC (73ºF to 78ºF) at a pressure of 20-25 MPa (2900-5100 psi). The sintering temperature should be in the range of 375ºC to 380ºC (707ºF to 716ºF).

Product Form and Packaging
Dyneon TFM 1705 PTFE is supplied in moisture and dust-tight plastic drums with a polyethylene liner.
Quantity per drum: 25 kg (55 lbs.)
Order quantity per pallet: 150 kg (330 lbs.)

Storage and Material Handling
Dyneon TFM 1705 PTFE has an unlimited shelf life provided it is stored in a clean, dry place. Dyneon TFM 1705 PTFE is hydrophobic, and generally do not require drying before processing unless high humidity conditions create surface moisture adsorption.

Management System - ISO 9001 and ISO 14001
All Dyneon design, development, production and service facilities have achieved a global ISO 9001 registration for their quality management system. In addition, our Gendorf, Germany location has achieved ISO 14001 for its environmental management system.

Regulatory
Dyneon TFM 1705 PTFE is in compliance with FDA regulation 21 CFR 177.1550. It is the responsibility of the user to determine whether its specific formulation and intended use comply with applicable laws and are suitable for its intended applications.

Safety/Toxicology
These are fluoroplastic materials, so normal precautions observed with fluoroplastics should be followed. Before processing these products, consult the Material Safety Data Sheet and follow all label directions and handling precautions. General handling/processing precautions include: (1) Process only in well-ventilated areas; (2) Do not smoke in areas contaminated with powder/residue from these products; (3) Avoid eye contact; (4) After handling these products wash any contacted skin with soap and water. Potential hazards, including evolution of toxic vapors, can exist if processing occurs under excessively high temperature conditions. Vapor extractor units should be installed above processing equipment. When cleaning processing equipment, do not burn off any of this product with an open flame or in a furnace.

Technical Information and Test Data
Technical information, test data, and advice provided by Dyneon personnel are based on information and tests we believe are reliable and are intended for persons with knowledge and technical skill sufficient to analyze tests types and conditions, and to handle and use raw polymers and related compounding ingredients. No license under any Dyneon or third party intellectual rights is granted or implied by virtue of this information.

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Important Notice:
Because conditions of product use are outside Dyneon's control and vary widely, user must evaluate and determine whether a Dyneon product will be suitable for user's intended application before using it. **The following is made in lieu of all express and implied warranties (including warranties of merchantability and fitness for a particular purpose): If a Dyneon product is proved to be defective, Dyneon's only obligation, and user's only remedy, will be, at Dyneon's option, to replace the quantity of product shown to be defective when user received it or to refund user's purchase price. In no event will Dyneon be liable for any direct, indirect, special, incidental, or consequential loss or damage, regardless of legal theory, such as breach of warranty or contract, negligence, or strict liability.**

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