



Dyneon™

Modified granular PTFE for molding and ram extrusion

TFM™ 1600 PTFE

Features and Benefits

- Meets ASTM D4894 Type III, Grade 2 resin
- Molding and ram extrusion powder with very good free-flow properties
- Good metering properties
- Good mold filling behavior
- Improved particle coalescence
- Denser polymer structure
- Lower permeability
- Substantially lower deformation under load
- Improved weldability
- Good electrical and mechanical properties
- Increased modulus of elasticity

Typical properties (Data not for specification purposes)

Powder properties

Property	Value	Unit	Test Method
Bulk density	830	g/l	ASTM D 4894-98a
Average particle size	450	μ	ASTM D 4894-98a

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

Property	Value	Unit	Test Method
Tensile Strength	4600	psi	ASTM D 4894-98a
Elongation at break	450	%	ASTM D 4894-98a
Specific gravity	2.16	g/cc	ASTM D 4894-98a
Shrinkage	3.5	%	ASTM D 4894-98a
Tensile Modulus	94,250	psi	ASTM D 638
Deformation under Load		%	ASTM D 621
2175 psi – 24 hrs	8		
2175 psi – 100 hrs	9		
2175 psi – permanent	4		

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	2.6	kV/mil	ASTM D149-95a

Dyneon™ TFM™ 1600 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 23°C (73°F) 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 23°C to 26°C (73°F to 78°F) at a pressure of 20-25 MPa (2900-5100 psi). The sintering temperature should be in the range of 375°C to 380°C (707°F to 716°F).

Product Form and Packaging

Dyneon TFM 1600 PTFE is supplied in moisture and dust-tight plastic drums with a polyethylene liner.

Quantity per drum: 50 kg (110 lbs.)

Order quantity per pallet: 330 kg (660 lbs.)

Storage and Material Handling

Dyneon TFM 1600 PTFE has an unlimited shelf life provided it is stored in a clean, dry place. Dyneon TFM 1600 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 1600 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.**

Improved Performance

and design flexibility with the processing ease of PTFE

Dyneon™ TFM™ 1600 PTFE is a modified polytetrafluoroethylene (PTFE) that maintains the exceptional chemical and heat resistance properties of conventional PTFE, but has a significantly lower melt viscosity giving better particle fusion during sintering and smoother surfaces.

Dyneon TFM 1600 PTFE is a free-flowing powder for compression molding, isostatic molding, automatic molding, and ram extrusion.



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FEATURES:

- Free-flowing resin
- Reduced melt viscosity
- Reduced cold flow
- Lower porosity and permeability
- Lower void content
- Excellent non-stick and dielectric properties
- Higher elastic modulus

ADVANTAGES:

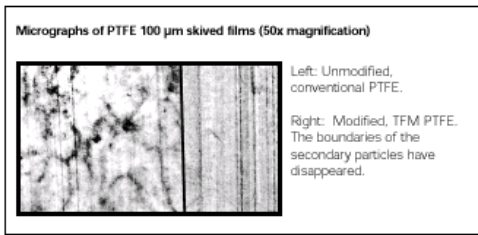
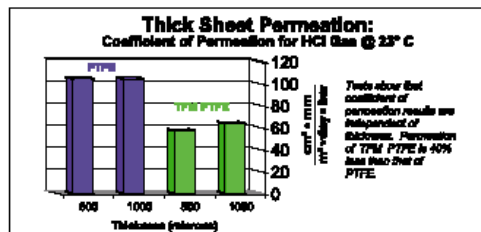
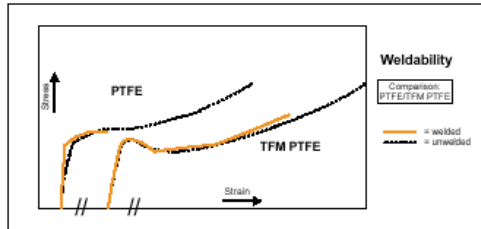
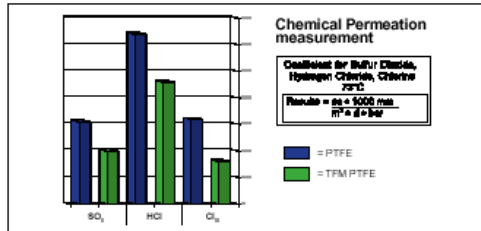
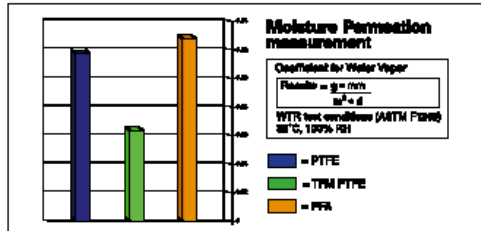
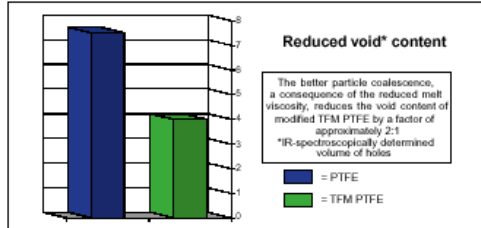
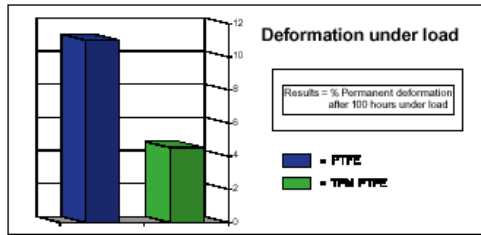
- Smoother surfaces
- Excellent weldability
- Reduced deformation under load
- Reduced extractables
- Improved design flexibility

RECOMMENDED APPLICATIONS:

- Isostatic, automatic, compression molded or ram extruded products
- Skived film and sheet
- Envelope gaskets requiring high blowout security
- Ball-valve seats for reduced cold flow without the use of fillers
- Lining systems
- Semiconductor and chemical processing system components
- Thermoformed products: blow molded or deep drawn goods



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Technical Information and Test Data

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