

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

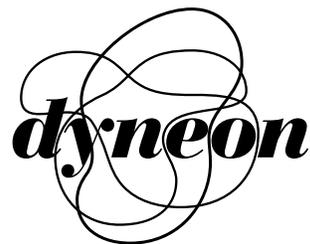
Property	Value	Unit	Test Method
Tensile Strength	4600	psi	ASTM D 4894-98a
Elongation at break	450	%	ASTM D 4894-98a
Specific gravity	2.16	g/cc	ASTM D 4894-98a
Shrinkage	3.5	%	ASTM D 4894-98a
Tensile Modulus	94,250	psi	ASTM D 638
Deformation under Load		%	ASTM D 621
2175 psi – 24 hrs	8		
2175 psi – 100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



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.

A 3M Company

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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Product Information:

+1 651 733 5353 +1 800 723 9127

Dyneon LLC
Application and Product
Development
50 Milton Drive
Aston, Pa 19014-2293 USA

Dyneon LLC
Customer Service
6744 33rd St North
Oakdale, MN 55128 USA

Dyneon Technical Service
Phone: +1 610 497 8899
Fax: +1 610 497 7050

Dyneon Customer Service
Phone: +1 800 810 8499
Fax: +1 800 635 8061

Houston Office:
16727 Aldine Westfield
Houston, TX 77032-1349 USA
Phone: +1 281 821 4490
Fax: +1 281 821 2525

Dyneon Customer Service in Europe
Phone: 00 800 396 366 27
Fax: 00 800 396 366 39
(Toll free in Europe)

www.dyneon.com

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