

# Dyneon™

## Granular PTFE for molding and ram extrusion

### TF 1641 PTFE

#### Features and Benefits

- Meets ASTM D 4894 Type IV, Grade 2 resin
- Molding and ram extrusion powder with very good free-flow properties
- Good metering properties
- Good mold filling behavior
- Good electrical and mechanical properties
- Very good surface quality of isostatic moldings
- Excellent for small parts

#### 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, minimum	4000	psi	ASTM D 4894-98a
Elongation at break	350	%	ASTM D 4894-98a
Specific gravity	2.15	g/cc	ASTM D 4894-98a
Shrinkage	2.8	%	ASTM D 4894-98a
Tensile Modulus	87,000	psi	ASTM D 638
Deformation under Load		%	ASTM D 621
2175 psi – 24 hrs	15		
2175 psi – 100 hrs	17		
2175 psi – permanent	11		

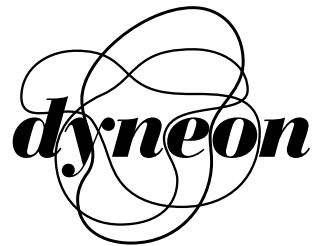
##### Thermal properties

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	2.5	kV/mil	ASTM D149-95a

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## 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 TF 1641 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: 300 kg (660 lbs.)

## Storage and Material Handling

Dyneon TF 1641 PTFE has an unlimited shelf life provided it is stored in a clean, dry place. Dyneon TF 1641 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 TF 1641 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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