



Dyneon™

TFM™ 2033 PTFE

2nd-generation PTFE for high-performance pipes

Features

- Meets ASTM D 4895-04 Type I, Grade 1, Class B classification.
- High molecular weight PTFE powder, produced by the emulsion polymerization method.
- Processing by standard paste extrusion method
- Dyneon™ TFM™ 2033 PTFE is recommended for high-performance pipes with reduction ratios up to 100:1
- Denser polymer structure providing lower gas permeability
- Isotropic mechanical properties
- Smooth surfaces and high transparency
- High stress cracking resistance
- High pressure resistance under surge stress
- Lower flexural modulus
- Very good weldability
- Processing by standard paste extrusion method

Powder Properties*

| Properties | Test Method | Unit | Value |
|--|-----------------|------|------------|
| Bulk density | DIN EN ISO 60 | g/l | 470 |
| Average particle size | ISO 13320 | µm | 500 |
| Extrusion pressure (reduction ratio 400) | ASTM D 4895 | MPa | 31 |
| Reduction ratio range | Dyneon internal | | 20-100 : 1 |

Mechanical properties, measured at 23 °C on sintered moldings*

| | | | |
|---------------------|------------------|-------------------|------|
| Tensile strength | DIN EN ISO 527-3 | MPa | 34 |
| Elongation at break | DIN EN ISO 527-3 | % | 400 |
| Specific gravity | DIN EN ISO 12086 | g/cm ³ | 2.16 |

* average values

Processing

Dyneon™ TFM™ 2033 PTFE can be processed by the standard paste extrusion methods. To achieve optimum extrudate quality, all processing parameters such as temperature settings, extrusion pressure, lubricant content, extrusion rate and profile dimensions must be carefully balanced. The paste powder is pre-mixed with a suitable lubricant stored for at least 24 h at a temperature higher than 25 °C and compacted into a pre-form before it is extruded through the die of a suitable ram extruder. The lubricant is then removed through drying and the pipe sintered.

Supply form

Dyneon TFM™ 2033 PTFE is supplied in moisture and dust tight plastic drums.

| | |
|---------------------------|--------|
| Capacity per drum: | 25 kg |
| Order quantity per pallet | 300 kg |



Storage and Material Handling

Dyneon™ TFM™ 2033 PTFE can be stored for a relatively long period of time provided it is stored in a clean, dry place at a temperature of less than 19 °C to safeguard free-flowing properties.

Safety/Toxicology

This is a PTFE material, so normal precautions observed with PTFE 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. (5) Avoid contact with hot fluoropolymer. 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.

Our Worldwide Commitment to Quality

Indicative of our commitment, most Dyneon design, development, production and service facilities have achieved global quality management certification. Production facilities have also received certification for their environmental management system. Please see the Dyneon website (www.dyneon.com) for the most up-to-date certification details.

Important Notice

All information set forth herein is based on our present state of knowledge and is intended to provide general notes regarding products and their uses. It should not therefore be construed as a guarantee of specific properties of the products described or their suitability for a particular application. 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 quality of our products is warranted under our General Terms and Conditions of Sale as now are or hereafter may be in force.

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General recommendations on health and safety in processing, on work hygiene and on measures to be taken in the event of accident are detailed in our material safety data sheets.

You will find further notes on the safe handling of fluoropolymers in the brochure "Guide for the safe handling of Fluoropolymers Resins" by PlasticsEurope, Box 3, B-1160 Brussels, Tel. +32 (2) 676 17 32.

The present edition replaces all previous versions. Please make sure and inquire if in doubt whether you have the latest edition.

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