

## 3M™ Dyneon™ Fluoroplastic PFA 6515TZ

### Product Description

3M™ Dyneon™ Fluoroplastic PFA 6515TZ, a fully fluorinated copolymer made from tetrafluoroethylene and perfluorvinylether, is characterized by its excellent temperature resistance, optimal chemical and weathering resistance and very good dielectric capabilities.

### Special Features

- Wide service temperature range
- Excellent, almost universal resistance to solvents and chemicals
- Extremely high weathering resistance and UV stability
- Excellent electrical insulation properties, e.g.: dielectric breakdown strength, dielectric constant
- High limiting oxygen index: Does not support combustion
- Smooth surfaces
- Good non-stick characteristics
- Good low-friction properties
- Broad processing window
- Improved stress crack resistance
- Improved mould release property
- High transparency

Properties	Test method	Unit	Value*
Specific Gravity	DIN EN ISO 12086	g/cm <sup>3</sup>	2.15
Melting Point	DIN EN ISO 12086	°C	308
Melt Flow Index (372 °C/5 kg)	DIN EN ISO 1133	g/10 min	15
Limiting Oxygen Index (LOI)	ASTM D2863	%	> 95
Hardness Shore D	ASTM D2240/ISO 868	-	60
Tensile Strength at Break (23 °C)	ASTM D638	MPa	29
Elongation at Break (23 °C)	DIN EN ISO 527-1	%	400
Flexural Modulus	DIN EN ISO 527-1	MPa	620
MIT Folding Endurance (200 µm film)	ASTM D 2176	double folds	38,000

\* typical values

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### Typical Properties

In comparison to the N grades the 3M Dyneon Fluoroplastic PFA T grades are chemically modified to show additional benefits: The 3M Dyneon Fluoroplastic PFA T grades show a high thermal processing stability resulting in a broad processing window. In addition, they are easily released from moulds, show an improved stress crack resistance and a smooth surface.

### Typical Applications

Generally, 3M Dyneon Fluoroplastic PFA T grades are used for corrosion protection in valves, pumps, tanks, tubes and pipes, or heating cables. 3M Dyneon Fluoroplastic PFA 6515TZ, with a Melt-Flow-Index (372 °C/5 kg) of 15 g/10 min, is a material with a low viscosity and is used in high shear processes like wire and cable extrusion and injection moulding, especially when the exceptional temperature resistance, the almost universal resistance to solvents and chemicals together with the extremely high weathering resistance need to be combined with good mechanical performance.

### Processing Recommendations

3M Dyneon Fluoroplastic PFA 6515TZ can be processed according to the known processing methods for thermoplastic polymers. All machine parts coming into contact with the melt or fumes of 3M Dyneon Fluoroplastic PFA 6515TZ should be made from highly corrosion resistant materials – usually high-nickel alloys such as Inconel® 625, Haynes® 242, Hastelloy® C and Reiloy®. Off-gases and decomposition products during processing shall be managed via an appropriate exhaust fume management system, especially at the extruder die. For safe processing of Dyneon PFA please also check safety instructions below.

Typical processing temperatures for Dyneon PFA lie between 360 °C and 390 °C. The medium melt viscosity makes 3M Dyneon Fluoroplastic PFA 6515TZ a standard material for injection moulding and wire & cable extrusion.

Injection moulding: Detailed processing information with typical processing parameters and processing equipment recommendations please find in Dyneon's "Injection Moulding Guide".

Wire & cable extrusion: For the wire & cable extrusion a 25 - 30 mm D extruder with a cylinder L/D ratio of 20 - 30:1 is required. The cylinder should have 3-4 heating zones that are independent from each other. High line speeds can be obtained with a high draw down ratio of up to 150:1. The draw down balance should be maintained between 0.95 – 1.05.

Hastelloy®, Haynes® 242 and Reiloy®. are registered Trademarks of Haynes International.

Inconel® is a registered Trademark of Special Metals Corporation.

### Storage and Handling

3M™ Dyneon™ Fluoroplastic PFA 6515TZ can be stored for a relatively long period of time provided it is stored in a clean, dry place. 3M™ Dyneon™ Fluoroplastic PFA 6515TZ is hydrophobic and generally does not require drying before processing unless high humidity conditions create surface moisture absorption. Opened containers should be tightly resealed to prevent dust contamination from static charge accumulation and moisture ingress.

### Safety Instructions

Follow the normal precautions observed with all fluorothermoplastic materials.

Please consult the Material Safety Data Sheet and Product Label for information regarding the safe handling of the material. By following all precautions and safety measures, processing these products poses no known health risks. 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) If skin comes into contact with these products during handling, wash with soap and water afterwards. 5) Avoid contact with hot fluoropolymer.

Potential hazards, including release of toxic vapours, can arise if processing occurs under excessively high temperature conditions. Vapour extractor units should be installed above processing equipment. When cleaning processing equipment, do not burn off any of this product with a naked flame or in a furnace.

### Delivery Form

3M™ Dyneon Fluoroplastic PFA 6515TZ is delivered in pellet form.

Packaging sizes are:

- 50 kg cardboard box, containing two PE-bags with 25 kg content each

## 3M™ Dyneon™ Fluoroplastic PFA 6515TZ

### 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.

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 skills sufficient to analyze test types and conditions, and to handle and use raw polymers and related compounding ingredients.

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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](#)" (download link) by PlasticsEurope, Box 3, B-1160 Brussels, Tel. +32 (2) 676 17 32.

You can also download it with your smartphone using the QR code below.



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Web Site: [www.dyneon.eu](http://www.dyneon.eu)

Printed in Germany  
© Dyneon 2013  
Status: Jul. 2013

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# Product Data Sheet