

# 3M™ Dyneon™ TFM™

## Modified PTFE Dispersion TFM 5001GZ

### Product Description

3M™ Dyneon™ TFM™ Modified PTFE Dispersion TFM 5001GZ is a milky-white, water-based fluoropolymer dispersion. The dispersion has a solids content of around 58 %. The spherical hydrophobic polymer particles have an average size of around 200 nm. The polymer has a density of approximately 2.2 g/ml.

### Special Features

- Excellent transparency of coated films
- High corrosion resistant films
- High shear stability
- Very good film formation
- Low settling tendency
- Very good non-stick properties
- Approved for use with repeated food contact
- U.S. Food and Drug Administration (FDA) listed: 21CFR 177.1550
- Approved by the German Federal Ministry of Health (BGA)

Properties	Test method	Unit	Value
Solids Content	DIN EN ISO 12086	%	58
Emulsifier			non-ionic
Emulsifier Content (based on solids)	DIN EN ISO 12086	%	5
Particle Size	DIN ISO 13321	nm	200
pH Value	DIN ISO 976		> 9
Viscosity (D = 30 s <sup>-1</sup> )	DIN EN ISO 3219	mPas	12

### 3M™ Dyneon™ TFM™ Modified PTFE Dispersion TFM 5001GZ

#### Typical Properties

3M™ Dyneon™ TFM™ Modified PTFE Dispersion TFM 5001GZ is supplied with a pH value of 9 – 11. The dispersion can be mixed with fillers or pigments for use in coating formulations. Dilution is possible at any time but should be carried out with desalinated water.

#### Typical Applications

3M™ Dyneon™ TFM™ Modified PTFE Dispersion TFM 5001GZ is mainly used to formulate non-stick coatings for manufacturing cookware and baking tins. It is also used for technical metal coatings for corrosion protection and to improve sliding properties. Due to the special polymer construction, the dispersion is recommended for use as top coat to generate high transparent final coating layers.

For coating metal surfaces, various techniques such as spray coating, roller coating and silk-screen coating can be employed. The formulations have to be adjusted for each technique.

#### Processing Recommendations

Dyneon recommends that the dispersion always be gently homogenised before processing and filtered using a 50 µm filter.

When adding pigments and fillers, make sure that these do not negatively influence the excellent stability of the product. If necessary the mixture must be displaced with stabilisers. If fillers or pigments have to be rubbed, this should be carried out before they are added to the dispersion.

The dispersion can be used for manufacturing primers, intermediate layers or top coats. In order to optimise the coating result with regard to shine and porosity, Dyneon recommends adding small amounts of fluorothermoplastic polymers such as 3M™ Dyneon™ Fluoroplastic PFA 6900GZ, PFA 6910GZ or FEP 6300GZ.

To dry the layers Dyneon recommends a three-step, ideally continuous process with pre-drying at 90 – 120 °C, intermediate drying at 230 – 320 °C and then final sintering at 360 – 400 °C. The temperatures should be selected taking into account the substrate thickness, coating thickness and throughput speed. A flawlessly sintered polymer layer is always transparent and smoothly coalesced.

#### Storage and Handling

The aqueous dispersion must be stored under frost-proof conditions (5 – 30 °C). Although 3M™ Dyneon™ TFM™ Modified PTFE Dispersion TFM 5001GZ has a low settling tendency, it should be homogenised once or twice a month by gentle rolling or stirring. Should sediment still build up, it can be redispersed by homogenising the dispersion as described above.

For more information please consult our technical information regarding "[Shelf Life and Storage of 3M™ Dyneon™ Fluoropolymer Dispersion Products](#)".

#### Safety Instructions

Follow the normal precautions observed with all fluoropolymer 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™ TFM™ Modified PTFE Dispersion TFM 5001GZ is delivered as a water-based solution (dispersion).

Packaging sizes are:

- 30 l PE-drum with 40 kg content
- 1000 l IBC container with 1500 kg content

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## Important Notice

This Dyneon product is a newly introduced product that has not been fully commercialized. As a result, the formulation, manufacturing process, performance characteristics, and other properties of this product are not guaranteed and are subject to change without notice, provided that the Dyneon product will meet Dyneon's then current product specification. User is responsible for evaluating and determining whether this Dyneon product is suitable and appropriate for a particular use and intended application. The conditions of evaluation, selection, and use of the Dyneon product can vary widely and affect the use and intended application of the Dyneon product. Because many of these conditions are uniquely within the Buyer's knowledge and control, Buyer must evaluate and determine whether the Dyneon product is suitable and appropriate for a particular use and intended application.

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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.



### Customer Service

Europe  
Phone: 00 800 396 366 27  
Fax: 00 800 396 366 39  
Italy  
Phone: 800 7 910 18  
Fax: 800 7 810 19  
USA  
Phone: +1 800 810 8499  
Fax: +1 800 635 8061

### Technical Service Fluoroplastics

Dyneon GmbH  
3M Advanced Materials Division  
Industrieparkstraße 1  
84508 Burgkirchen  
Germany  
Phone: +49 8679 7 4709  
Fax: +49 8679 7 5037

### Technical Service Fluoroelastomers & Polymer Processing Additives

3M Belgium BVBA / SPRL  
3M Advanced Materials Division  
Canadastraat 11  
Haven 1005  
2070 Zwijndrecht  
Belgium  
Phone: +32 3 250 7868  
Fax: +32 3 250 7905

### Technical Service PTFE Compounds

Dyneon B.V.  
3M Advanced Materials Division  
Tunnelweg 95  
6468 EJ Kerkrade  
The Netherlands  
Phone: +31 45 567 9600  
Fax: +31 45 567 9619

We will gladly supply further contact details for our full network of global sales offices. Alternatively, find them [here](#).



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

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