

3M Advanced Materials Division

3M™ Dyneon™ PTFE Dispersion TF 5060GZ

Features and Benefits

- Excellent film formation
- Almost universal chemical resistance
- Very good wetting properties
- Low settling tendency
- Very good non-stick properties
- Large operating temperature range
- High degree of transparency
- Approved for use with food contact
- U.S. Food and Drug Administration (FDA) listed: 21CFR 177.1550
- Approved by the German Federal Ministry of Health (BGA)

Typical Properties

Property	Test Method	Units	Value
Solids Content	DIN EN ISO 12086	%	59
Emulsifier			non-ionic
Emulsifier Content (based on solids)	Internal Dyneon method	%	8
Particle Size	DIN ISO 13321	nm	210
pH Value	DIN ISO 976		>9
Viscosity (D = 30 s ⁻¹)	DIN EN ISO 3219	MPa	25

Product Description

3M™ Dyneon™ PTFE Dispersion TF 5060GZ is a milky-white, water-based fluoropolymer dispersion. The dispersion has a solids content of around 59%. The spherical hydrophobic polymer particles have an average size of around 210 nm. The polymer has a density of approximately 2.2 g/ml.

Typical Properties

3M™ Dyneon™ PTFE Dispersion TF 5060GZ is supplied with a pH value of 9 – 11. The dispersion is characterised by excellent film formation and wetting properties, so the product can be used for coating PTFE surfaces.

Typical Applications

3M™ Dyneon™ PTFE Dispersion TF 5060GZ is mainly used for coating or impregnating fabric structures. Due to the necessarily high sintering temperatures, glass and aramid fabrics are particularly suitable. Due to the product's excellent wetting properties, multiple coatings are possible.

PTFE-coated fabrics, felts and packages are mainly used for products such as conveyor belts and baking foil, in architecture, and for filters or slide seal rings.

Processing Recommendations

3M recommends that the dispersion always be gently homogenised before processing and filtered using a 50 µm filter.

When coating fabrics, make sure that the base coat is applied with as few air bubbles as possible. This can contribute to a reduction in the viscosity of the dispersion by dilution.

Subsequent layers can be applied with the concentrated material. The excellent film formation and wetting properties allow for a relatively high layering speed.

PTFE coatings should be dried and sintered in a multi-step process. To dry the layers 3M recommends a continuous process at low temperatures of 90 – 120°C to begin with, followed by intermediate drying at 250 – 320°C and then final sintering at 360 – 400°C.

Note: Data in this document are not for specification purposes.

To achieve the full functionality of the coating with its unique PTFE properties, the exposure time for each step must be chosen to ensure that all the by-products of the dispersion such as water and surfactants are completely removed. Complete sintering must also be guaranteed.

Fully sintered PTFE is characterised by its even, transparent appearance.

Storage and Handling

The aqueous dispersion must be stored under frost-proof conditions (5 – 30 °C). Although 3M™ Dyneon™ PTFE Dispersion TF 5060GZ has a low settling tendency, it should be homogenized once or twice a month by gentle rolling or stirring. Should sediment still build up, it can be redispersed by homogenizing the dispersion as described above.

Safety Instructions

Follow the normal precautions observed with all fluoropolymer materials.

Please consult the 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 vapors, can arise 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 a naked flame or in a furnace.

Delivery Form

3M™ Dyneon™ PTFE Dispersion TF 5060GZ 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

Important Notice

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 safety data sheets.

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