Product Data Sheet

Commercial Product

3M™ Dyneon™

Fluoroplastic PFA 6503PAZ

Product Description

3M™ Dyneon™ Fluoroplastic PFA 6503PAZ is a white fluorothermoplastic powder having an average particle size of about 30 µm.

Special Features

- Good electrostatics
- Excellent non-stick properties
- Excellent fluidisation
- Excellent chemical resistance
- Good stress-cracking resistance
- Good surface properties
- High transparency
- Heat resistant up to 260 °C
- High dielectric strength

Properties	Test method	Unit	Value
Melting Point	ASTM D 4591	°C	308
Melt Flow Index (372 °C / 5kg)	DIN D 1238	g/10 min	3
Density	ASTM D 791	g/cm^3	2.15
Mean Particle Size		µm	30
Bulk Density	DIN 53466	g/l	800
Hardness Shore D	ASTM D 2240	-	60

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Typical Properties

3M™ Dyneon™ Fluoroplastic PFA 6503PAZ powder shows excellent fluidisation and best properties for electrostatic powder coating due to its particle size and distribution.

Typical Applications

3M™ Dyneon™ Fluoroplastic PFA 6503PAZ powder is typically used for electrostatic powder coatings. Due to its small particle size, it is also often beneficial to mix it into other fluoropolymer coatings.

In electrostatic powder coatings maximum layer thicknesses of 25 – 40 µm per layer and about 200 µm total layer thickness can be achieved. In order to improve the adhesion to the metal substrate, it is appropriate to use a primer system based on high performance polymers like PAI or PES.

Processing Recommendations

In preparation for coating, substrates must be free of oil, grease or silicone. In addition to degreasing Dyneon recommends getting the metallic substrates sandblasted to a suitable surface roughness. This will significantly improve the adhesion of the primer and the coating.

To perform an optimal electrostatic coating, PFA 6503PAZ powder must be optimally fluidized in the reservoir. The powder should then be electrically charged with a suitable electrostatic powder spray gun. The ionized powder then adheres to the metallic substrate. The coating thickness is determined by the electrical shielding of the substrate. For the first layer, typically 60 kV voltage is applied for about 30 minutes. Further layers are applied at a lower voltage of 25 – 40 kV to avoid excessive back ionisation, which would prevent powder uptake.

The individual layers should then be sintered in an oven until the polymer is completely molten. Suitable ovens must be able to reach temperatures of over 400 °C. The retention time depends mainly on the thickness of the substrate. After removal from the oven, further layers, up to the maximum layer thickness, can be applied.

Storage and Handling

3M™ Dyneon™ Fluoroplastic PFA 6503PAZ can be stored for a relatively long period of time provided it is kept in a clean, dry place. PFA 6503PAZ is hydrophobic and generally does not require drying before processing unless high humidity conditions create surface moisture adsorption.

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™ Fluoroplastic PFA 6503PAZ is delivered in powder form.

Packaging size is:

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

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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.

No license under any Dyneon or third party intellectual rights is granted or implied by virtue of this information.
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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We will gladly supply further contact details for our full network of global sales offices. Alternatively, find them here.

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