



Teflon™ PTFE DISP 50

Fluoroplastic Dispersion

Product Information

Product Description

Teflon™ PTFE DISP 50 is a milky white aqueous PTFE dispersion stabilized with a non-ionic surfactant. Teflon™ PTFE DISP 50 is typically used to coat woven glass cloth and has the advantages of a higher molecular weight PTFE compared to other Teflon™ PTFE DISP grades. When properly processed, the PTFE resin in Teflon™ PTFE DISP 50 exhibits the superior properties typical of the fluoroplastic resin: retention of properties after service at 260 °C (500 °F) and useful properties at -240 °C (-400 °F).

Teflon™ PTFE DISP 50 aqueous dispersion provides:

- Inertness to nearly all industrial chemicals and solvents
- Stability at high temperatures
- Excellent dielectric properties
- Lowest coefficient of friction of any solid material
- Excellent weatherability
- Non-stick characteristics

Typical Applications

- Coated woven fiber-glass fabric used in architectural, high-performance industrial, food processing, and electronics applications
- Impregnated packing made from braided fibers for severe chemical and thermal service
- Cast film for capacitor dielectrics or chemical barriers
- Surface coatings for metallic or other high-temperature substrates
- Anti-drip additive for plastics
- Binder for battery anode or cathode matrixes

Food Contact Compliance

Properly processed products (sintered at high temperatures common to the industry) made from Teflon™ PTFE DISP 50 resin can qualify for use in contact with food in compliance

with FDA 21 CFR 177.1550 and European Regulation (EU) No. 10/2011. For details and information, please contact your Chemours representative.

Processing

Conventional dip or flow techniques can be used for coating or impregnating high temperature fabrics, fibers, and other products with Teflon™ PTFE DISP 50. A continuous PTFE resin coating on woven fabrics made of fiberglass, Nomex® aramid fiber, Kevlar® aramid fiber, or other high temperature-resistant fibers can be made by dip coating. Multiple passes may be used to build the desired thickness to produce a smooth, crack-free coating. Teflon™ PTFE DISP 50 is formulated to provide good rewetting on each pass. Each coating layer is usually dried to remove water (typically at 120 °C [250 °F]), baked to remove the wetting agent (typically at 270 °C [518 °F]), sometimes calendered, and finally heated above the crystalline melting point of the resin particles (approximately 337 °C [639 °F]).

Products utilizing entrained PTFE resin particles only for their lubricating or hydrophobic properties are dried and baked, but not heated above the crystalline melting point of the particles. For example, rope-like products, such as shaft packings, can be made from braided yarn in a variety of cross sections. The dispersion wets internal surfaces and promotes penetration of the small PTFE particles. The unmelted particles are sheared and retained as an impregnant, even when compressed in service and exposed to steam or chemicals. Unmelted particles can also improve flexibility and flex life in woven fabrics used in hot-gas filtration applications.

Other solid or liquid ingredients can be added to Teflon™ PTFE DISP 50 to provide specific processing or finished product behavior.

Safety Precautions

Before processing any fluoroplastics, read the Material Safety Data Sheet, available upon request from our Customer Service Group at (844) 773-CHEM/2436 in the U.S. or (302) 773-1000 outside of the U.S. Also read the detailed information in the latest edition of the "Guide to the Safe Handling of Fluoropolymer Resins," published by the Fluoropolymers Division of The Society of the Plastics Industry (www.fluoropolymers.org) or by PlasticsEurope (www.plasticseurope.org).

Storage and Handling

Teflon™ PTFE DISP 50 must be properly stored to maximize the stability of the dispersion. The PTFE particles will settle on prolonged standing and/or on prolonged heating—temperatures above 40 °C (104 °F) should be avoided. The dispersion must be protected from freezing, which will cause irreversible settling. The optimum storage temperature range is 7–24 °C (45–75 °F). If dispersions are to be stored for extended periods, lower-temperature storage is desirable. For optimal performance, Teflon™ PTFE DISP 50 should be gently mixed or rolled monthly and prior to use.

Ammonium hydroxide is used by Chemours to set the pH to 9.5–11.0 at the time of shipment. High ambient temperatures can deplete the ammonium hydroxide level and reduce pH. Declining pH eventually favors bacterial growth, which causes odor and scum. The pH of opened containers should be measured and maintained between 9.5 and 11.0.

High-speed stirring, pumping, or any other violent agitation must be avoided to minimize sheared particles, coagulation, and foaming. Ideally, the dispersion should be conveyed by gravity from storage to processing stations.

Storage and handling areas should be clean. Keep dispersion drums closed and clean to avoid both contamination and coagulation by drying at the liquid surface. High processing temperatures will cause even very small foreign particles to become visible and/or to make defects in finished products. Good housekeeping and careful handling are essential.

Packaging

Teflon™ PTFE DISP 50 is packaged in 30- and 114-L (8- and 30-gal) non-returnable drums and 1000-L (264-gal) recyclable containers. Contact the local Chemours sales office for package sizes available in your specific geographic area.

Typical Property Data for Teflon™ PTFE DISP 50 Fluoroplastic Dispersion*

Property	Test Method		Unit	Typical Value
Solids Content (% PTFE by weight)	ASTM D4441	ISO 12086	%	60
Density of Dispersion (at 60% solids)	ASTM D4441	ISO 12086	g/cm ³	1.51
Surfactant Content on PTFE Solids	ASTM D4441	ISO 12086	%	6
Dispersion Particle Size, average diameter	Chemours	ISO 13321	µm	0.200
pH of Dispersion	ASTM E70	ISO 976		10
Brookfield Viscosity (at 25 °C [77 °F])	ASTM D2196	ISO 2555	mPa·s	25

Teflon™ PTFE DISP 50 meets the requirements of ASTM D4441-15, Type II, Grade 6, Class A.

*Typical properties are not suitable for specification purposes.

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