



Teflon™ PFAD 335D

Fluoroplastic Resin

PFA Aqueous Dispersion

Product Information

Product Description

Teflon™ PFAD 335D is an off-white aqueous perfluoroalkoxy (PFA) dispersion stabilized with a non-ionic surfactant. It is a general-purpose dispersion that can be used to impart some of the unique properties of PFA to end products that would be difficult to make using traditional melt extrusion processes. It can be used to coat or impregnate porous structures or to make thin films. It can be coated and melt bonded to polytetrafluoroethylene (PTFE) resin or used as a hot melt adhesive.

The PFA resin in Teflon™ PFAD 335D is a melt flowable thermoplastic, providing superior properties typical of fluoroplastic resins: retention of properties after service at 260 °C (500 °F) and useful properties at -240 °C (-400 °F).

Teflon™ PFAD 335D aqueous dispersion provides:

- Inertness to nearly all industrial chemicals and solvents
- Stability at high temperatures
- Excellent dielectric properties
- Excellent weatherability
- Excellent anti-stick properties

Typical Applications

- Heat-sealable top coatings for PTFE-coated fabrics for belting, circuit boards, architectural fabrics, and electrical insulation
- Cast film for capacitor dielectrics or chemical barriers
- Hot melt adhesive for PTFE, PFA, and FEP parts
- Metal coatings

Food Contact Compliance

Properly processed products (sintered at high temperatures common to the industry) made from Teflon™ PFAD 335D 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 sales representative.

Processing

Conventional coating techniques, such as dip, spray, spin, or roller coating, can be used for coating or impregnating high temperature materials with Teflon™ PFAD 335D. Thin coats, usually less than 5 µm (0.2 mil), are applied to prevent mud cracking as the coating dries. The water is normally removed at 120 °C [250 °F], followed by heating to remove the wetting agent (typically at 250–270 °C [482–518 °F]). Final consolidation is done above the 305 °C (581 °F) melt point. If the Teflon™ PFAD 335D is being used as a top coat over a PTFE coated fabric or other parts, the coating must be heated to melt the PTFE (approximately 337 °C [639 °F]) to maximize adhesion. Prolonged heating above 370 °C (698 °F) should be avoided, as this could lead to thermal degradation of the Teflon™ PFAD 335D polymer.

Other solid or liquid ingredients can be added to Teflon™ PFAD 335D 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™ PFAD 335D must be properly stored to maximize the stability of the dispersion. The PFA 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™ PFAD 335D 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 the 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 should be minimized to prevent coagulation and to minimize 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 or to make defects in finished products. Good housekeeping and careful handling are essential.

Packaging

Teflon™ PFAD 335D is packaged in 114-L (30-gal) non-returnable drums and 1,000-L (264-gal) recyclable containers. Contact the local Chemours sales office for package sizes available in your specific geographic area.

Table 1: Typical Property Data for Teflon™ PFAD 335D Fluoroplastic Resin

Property	Test Method ¹		Unit	Typical Value
Solids Content (% PFA by weight)	ASTM D4441-04	ISO 12086	%	60
% Surfactant Based on PFA Solids	ASTM D4441-04	ISO 12086	%	6
Density of Dispersion (at 60% solids)	ASTM D4441-04	ISO 12086	g/cm ³	1.50
Dispersion Particle Size, average diameter		Chemours	µm	0.20
pH of Dispersion	ASTM E 70	ISO 1148		10
Brookfield Viscosity (at 25 °C [77 °F])	ASTM D 2196	ISO 2555	MPa·s	25
Melting Temperature	ASTM D 2116	ISO 12086	°C (°F)	305 (581)
Melt Flow Rate (MFR 372/5.0)	ASTM D 2116	ISO 12086	g/10 min	2

Typical properties are not suitable for specification purposes.

HOW TO USE THE TEFLON™ BRAND NAME WITH YOUR PRODUCT

Teflon™ is a registered trademark of Chemours for its brand of fluoroplastic resins, coatings, films, and dispersions. The Teflon™ brand name is licensed by Chemours in association with approved applications. Without a trademark license, customers may not identify their product with the Teflon™ brand name, as Chemours does not sell such offerings with the Teflon™ trademark. Unlicensed customers may refer to the Chemours product offering with only the Chemours name and product code number descriptor as Chemours sells its product offerings. There are no fair use rights or exhaustion of rights to use the Teflon™ trademark from buying from Chemours, a Chemours customer, or a distributor without a trademark license from Chemours.

If you are interested in applying for a trademark licensing agreement for the Teflon™ brand, please visit www.teflon.com/license

CAUTION: Do not use Chemours materials in medical applications involving permanent implantation in the human body or contact with bodily fluids or tissues, unless the material has been provided from Chemours under a written contract that is consistent with Chemours policy regarding medical applications and expressly acknowledges the contemplated use. For further information, please contact your Chemours representative. You may also visit www.teflon.com/industrial to download a copy of the "Chemours POLICY Regarding Medical Applications" and "Chemours CAUTION Regarding Medical Applications." For medical emergencies, spills, or other critical situations, call (866) 595-1473 within the United States. For those outside of the United States, call (302) 773-2000.

The information set forth herein is furnished free of charge and based on technical data that Chemours believes to be reliable. It is intended for use by persons having technical skill, at their own discretion and risk. The handling precaution information contained herein is given with the understanding that those using it will satisfy themselves that their particular conditions of use present no health or safety hazards. Because conditions of product use are outside our control, Chemours makes no warranties, express or implied, and assumes no liability in connection with any use of this information. As with any material, evaluation of any compound under end-use conditions prior to specification is essential. Nothing herein is to be taken as a license to operate under or a recommendation to infringe any patents.

NO PART OF THIS MATERIAL MAY BE REPRODUCED, STORED IN A RETRIEVAL SYSTEM OR TRANSMITTED IN ANY FORM OR BY ANY MEANS ELECTRONIC, MECHANICAL, PHOTOCOPYING, RECORDING OR OTHERWISE WITHOUT THE PRIOR WRITTEN PERMISSION OF CHEMOURS.

For more information, visit teflon.com/industrial

For sales and technical support contacts, visit teflon.com/industrialglobalsupport

© 2015 The Chemours Company FC, LLC. Teflon™ and any associated logos are trademarks or copyrights of The Chemours Company FC, LLC. Chemours™ and the Chemours Logo are trademarks of The Chemours Company.

Replaces: K-25401

C-10109 (7/15)