

DuPont™ Teflon® PFA 340

MOLDING AND EXTRUSION RESIN

Product Information

For inventory control purposes product name may be followed by an X.

Products labeled PFA 340 and PFA 340 X are equivalent and all information in this document is applicable to both.

Typical Application

Applications for DuPont™ Teflon® PFA 340 include extruded tubing and other profiles for hose, wire and cable insulation, and sleeving; industrial film; and injection or compression molded articles requiring superior electrical, chemical, and thermal properties.

Description

DuPont™ Teflon® PFA 340 is a general-purpose fluoroplastic resin available in pellet form. Compared with other grades of Teflon® PFA, its most unique features are a relatively high melt flow rate (typical MFR of 14) and properties that make it suitable for a variety of processes and demanding end uses. Table 1 shows the typical property data for Teflon® PFA 340.

Teflon® PFA 340 is used when traditional extrusion and molding processes are required for producing products with the superior properties of a fluoroplastic resin. Compared to other thermoplastics, the high melt strength and thermal stability of Teflon® PFA 340 can be used to improve processing rates. Compared with other fluoroplastics, creep resistance at high service temperatures provides a superior balance and level of end-use properties. Teflon® PFA 340 combines the processing ease of conventional thermoplastics with many properties similar to those of polytetrafluoroethylene.

Properly processed products made from neat Teflon® PFA 340 resin provide the superior properties characteristic of fluoroplastic resins: chemical inertness, exceptional dielectric properties, heat resistance, toughness and flexibility, low coefficient of friction, non-stick characteristics, negligible moisture absorption, low flammability, performance at temperature extremes, and excellent weather resistance.

In a flame situation, products of Teflon® PFA 340 resist ignition and do not promote flame spread. When ignited by flame from other sources, their contribution of heat is very small and added at a slow rate with very little smoke.

Processing

Teflon® PFA 340 can be processed by conventional melt extrusion and by injection, compression, and transfer molding processes. High melt strength and heat stability permit the use of relatively large die openings and high temperature draw-down techniques that increase production rates. Reciprocating screw injection molding machines are preferred. Corrosion-resistant metals should be used in contact with molten fluoroplastic resin. Extruder barrel should be long, relative to diameter, to provide residence time for heating the resin to approximately 390°C (730°F). For more detailed processing information, including recommended draw-down ratios, consult your DuPont representative.

Safety Precautions

WARNING!
VAPORS CAN BE LIBERATED THAT MAY BE HAZARDOUS IF INHALED.

Before using DuPont™ Teflon® PFA 340 resin, refer to the Safety Data Sheet and the latest edition of "The Guide to the Safe Handling of Fluoropolymer Resins," published by The Society of the Plastics Industry, Inc. (www.fluoropolymers.org) or by PlasticsEurope (www.plasticseurope.org). Open and use containers only in well-ventilated areas using local exhaust ventilation (LEV). Vapors and fumes liberated during hot processing of Teflon® PFA 340 should be exhausted completely from the work area. Contamination of tobacco with these polymers must be avoided. Vapors and fumes liberated during hot processing and which are not properly exhausted, or from smoking tobacco or cigarettes contaminated with Teflon® PFA 340 may cause flu-like symptoms such as chills, fever and sore throat. This may not occur until several hours after exposure and will typically pass within about 24 hours. Mixtures with some finely divided metals, such as magnesium or aluminum, can be flammable or explosive under some conditions.

Freight Classifications

DuPont™ Teflon® PFA 340 resin is classified as "Plastics, Materials, Pellets."

Storage and Handling

The properties of Teflon® PFA 340 resin are not affected by storage time. Ambient storage conditions should be designed to avoid airborne contamination and water condensation on the resin when it is removed from containers.

Packaging

Teflon® PFA 340 is supplied as pellets and is available in 25-kg multilayer bags with an integral polyethylene liner.



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Table 1: Typical Property Data for Teflon® PFA 340

PROPERTY	TEST METHOD		UNIT	TYPICAL VALUE
GENERAL				
Melt Flow Rate	ISO 12086	ASTM D3307	g/10min	14
Melting Point	-	ASTM D4591	°C (°F)	305 (581)
Specific gravity	-	ASTM D792	-	2.15
Critical Shear Rate, 372°C (702°F)	-	-	1/s	50
MECHANICAL				
Tensile Strength	ISO 12086	ASTM D3307	MPa (psi)	
23°C (73°F)				25 (3,600)
250°C (482°F)				12 (1,800)
Ultimate Elongation	ISO 12086	ASTM D3307	%	
23°C (73°F)				300
250°C (482°F)				480
Flexural Modulus	ISO 178	ASTM D790	MPa (psi)	
23°C (73°F)				590 (85,000)
250°C (482°F)				55 (8,000)
MIT Folding Endurance (0.20mm, 8mils film)	-	ASTM D2176‡	Cycles	15,000*
Hardness Durometer	ISO 868	ASTM D2240	-	D55
ELECTRICAL				
Dielectric Strength, Short Time, 0.25mm (0.010 in)	IEC 243	ASTM D149	kV/mm (V/mil)	80 (2,000)
Dielectric Constant, 1 MHz (106 Hz)	IEC 250	ASTM D150	-	2.03
Dissipation Factor, 1 MHz (106 Hz)	IEC 250	ASTM D150	-	<0.0002
Volume Resistivity	ISO 1325	ASTM D257	ohm•cm	10 ¹⁸
OTHER				
Water Absorption, 24h	-	ASTM D570	%	<0.03
Weather and Chemical Resistance	-	-	-	Outstanding
Limiting Oxygen Index	ISO 4589	ASTM D2863	%	>95
Flammability Classification†	-	UL 94	-	V-0

* Depending on fabrication conditions

‡ Historical standard

† These results are based on laboratory tests under controlled conditions and do not reflect performance under actual fire conditions, current rating is a typical theoretical value.

Note: Teflon® PFA 340 meets the requirements of ASTM D3307, Type I

Nominal properties are not suitable for specification purposes.

Statements or data, regarding behavior in a flame situation are not intended to reflect hazards presented by this or any other material when under actual fire conditions.

This product is manufactured with technology that meets the goals of the U.S. Environmental Protection Agency (EPA) 2010/15 PFOA stewardship program.

See www.fluoropolymers.dupont.com for more details.

For more information, visit www.teflon.com/industrial

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

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Unlicensed customers may refer to the DuPont product offering when used as an ingredient in their products by the DuPont product code number and generic descriptor. In this instance, when the product offering is to be sold and used without a license, the customer may refer to the ingredient as **DUPONT™ PFA 340** resin.

If you are interested in applying for a trademark licensing agreement for the DuPont™ Teflon® brand, please contact us at (800) 207-0756 in the US or (302) 996-7906 (outside of the US).

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For medical emergencies, spills, or other critical situations, call (800) 441-7515 within the United States. For those outside of the United States, call (302) 774-1000.

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