



Teflon™ PTFE

Granular Fluoroplastic

Product Information

Description

Teflon™ PTFE 8A X is a free-flowing white powder composed of relatively large particles and ideal for isostatic molding. Its most unique features are improved moldability at lower pressure and improved surface smoothness of finished parts. It offers an excellent combination of properties that are characteristic of Teflon™ fluoroplastic resins:

- Chemical inertness
- Exceptional dielectric properties
- Heat resistance
- Toughness and flexibility
- Low coefficient of friction
- Non-stick characteristics
- Negligible water absorption
- Excellent weather resistance

Teflon™ PTFE 8A X is often preferred for molding thick sheets and is sometimes used for ram extrusion of rod and tubing with thicker cross-sections. Properly processed products made from neat Teflon™ PTFE 8A X provide the superior properties typical of fluoroplastic resins.

Typical Applications

Many end products are fabricated from moldings of Teflon™ PTFE 8A X, such as:

- Ball valve seats
- Discs
- Pipe linings
- Valve plugs
- Expansion bellows
- Seals
- Lab ware
- Valves
- Ducting
- Piston rings

Thick molded sheets are stock shapes made from Teflon™ PTFE 8A X.

Processing

Teflon™ PTFE 8A X is processed in two steps: preforming and sintering. The powder is first compacted into a preformed shape approximating that of the desired molding. A precise heating (sintering) and cooling cycle is then used to consolidate the molding at temperatures above the crystalline melting point of the neat powder. The properties of a finished molding are dependent on preform pressure, sintering time and temperature, and cooling rate. Teflon™ PTFE 8A X is used to make relatively large objects in molds that can be filled manually. Small particle resins do not flow properly in automatic feeding systems. Refer to the typical property data in Table 1.

Food Contact Compliance

Properly processed products (sintered at high temperatures common to the industry) made from Teflon™ PTFE 8A X 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.

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).



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Storage and Handling

Preforming is easiest when the resin is uniformly between 21–27 °C (70–80 °F). As temperatures decline below this range, the resin will be increasingly difficult to mold without cracks and problems with condensed moisture. Higher temperatures inhibit flow and promote lumping. Storage conditions should be set accordingly. Cleanliness is a critical requirement for successful use of Teflon™ PTFE 8A X. The white resin and high sintering temperatures cause even small foreign particles to become visible in finished moldings. Keep resin drums closed and clean. Good housekeeping and careful handling are essential.

Packaging

Teflon™ PTFE 8A X is packaged in 40-kg (88-lb) drums. Each drum has a bag liner made of polyethylene resin.

Freight Classification

Teflon™ PTFE 8A X, when shipped by rail or express, is classified "Plastics, Synthetic, O.T.L., NOIBN." Resin shipped by truck is classified "Plastics, Materials Granules."

Typical Property Data for Teflon™ PTFE 8A X Granular Fluoroplastic Resin

Property	Test Method		Unit	Typical Value
Particle Size, Average Diameter	ISO 13320	ASTM D4894	µm	490
Standard Specific Gravity	ISO 12086	ASTM D4894		2.15
Bulk Density	ISO 12086	ASTM D4894	g/L	680
Tensile Strength ¹	ISO 12086	ASTM D4894	psi (MPa)	6000 (41.4)
Elongation at Break ¹	ISO 12086	ASTM D4894	%	330
Melting Peak				
Initial	ISO 12086	ASTM D4894	°C (°F)	342 ± 10 (647 ± 10)
Second	ISO 12086	ASTM D4894	°C (°F)	327 ± 10 (621 ± 10)
Thermal Instability Index	ISO 12086	ASTM D4894		7.6
Water Content	ISO 12086	ASTM D4894	%	<0.04

Note: Teflon™ PTFE 8A X meets the requirements of ASTM D4894-15, Type IV, Grade 1.

Typical properties are not suitable for specification purposes.

¹Measured on skived tapes with a thickness of 0.13 mm.

