



Teflon™ PTFE 7A X

Granular Fluoroplastic Resin

Product Information

Description

Teflon™ PTFE 7A X is a white powder with a small particle size. Its small particle size helps to minimize voids, even at relatively low molding pressures. High bulk density increases the size of moldings possible from a given mold or press opening. Teflon™ PTFE 7A X is preferred for large moldings requiring optimum mechanical and electrical properties. 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

Properly processed products made from neat Teflon™ PTFE 7A X provide the superior properties typical of fluoroplastic resins. It's easy to process, handle, and machine.

Typical Applications

Many end products are fabricated from billets, which include skived film and sheet. It can be used for applications, such as:

- Gaskets
- Mechanical seals
- Shaft bearings
- Piston rings
- Diaphragms
- Packings
- Bridge or pipeline bearing pads
- Electrical insulators
- Expansion bellows
- Chemical linings

The use of fillers provides a wide choice of modified mechanical properties.

Processing

Teflon™ PTFE 7A X usually 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 perform pressure, sintering time and temperature, and cooling rate. Teflon™ PTFE 7A 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 7A 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).

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 7A 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 7A X is packaged in 40-kg (88-lb) drums. Each drum has a bag liner made of polyethylene resin. For shipping convenience, orders of 320-kg (704-lb) (8 drums/pallet) are recommended.

Typical Property Data for Teflon™ PTFE 7A X Granular Fluoroplastic Resin

Property	Test Method		Unit	Typical Value
Particle Size, Average Diameter	ISO 13320	ASTM D4894	µm	38
Standard Specific Gravity	ISO 12086	ASTM D4894		2.16
Bulk Density	ISO 12086	ASTM D4894	g/L	460
Tensile Strength ¹	ISO 12086	ASTM D4894	psi (MPa)	7000 (48.3)
Elongation at Break ¹	ISO 12086	ASTM D4894	%	375
Melting Peak				
Initial	ISO 12086	ASTM D4894	°C (°F)	344 ± 10 (651 ± 10)
Second	ISO 12086	ASTM D4894	°C (°F)	327 ± 10 (621 ± 10)
Thermal Instability Index	ISO 12086	ASTM D4894		3
Water Content	ISO 12086	ASTM D4894	%	<0.04

Note: Teflon™ PTFE 7A X meets the requirements of ASTM D4894-15, Type II.

Typical properties are not suitable for specification purposes.

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

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