



Teflon™ PTFE

Granular Fluoroplastic

Product Information

Description

Teflon™ PTFE 7C X is a white powder with a small particle size. The small particle size of Teflon™ PTFE 7C X helps to minimize voids, even at relatively low molding pressures. Its most unique feature is the irregular, fibrous character of the particles. The fibrous particles promote good capture and uniform distribution of inorganic fillers when they are added to modify the mechanical properties of moldings. 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 7C X is preferred for moldings requiring optimum mechanical and electrical properties. Its low bulk density limits the size of moldings from a given mold or press opening. It is often preferred for making filled compounds, especially with metal powders that are difficult to mix because of density differences.

Typical Applications

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

- Gasket
- Bridge or pipeline bearing pads
- Piston rings
- Diaphragms

Many end products are made with filled compounds based on Teflon™ PTFE 7C X. The filled compounds provide a wide choice of modified mechanical properties.

Processing

Teflon™ PTFE 7C 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 7C 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 7C 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 7C 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 7C X is packaged in 45-kg (100-lb) drums. Each drum has a bag liner made of polyethylene resin.

Freight Classification

Teflon™ PTFE 7C 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 7C X Granular Fluoroplastic Resin

Property	Test Method		Unit	Typical Value
Particle Size, Average Diameter	ISO 13320	ASTM D4894	μm	31
Standard Specific Gravity	ISO 12086	ASTM D4894		2.16
Bulk Density	ISO 12086	ASTM D4894	g/L	260
Tensile Strength ¹	ISO 12086	ASTM D4894	psi (MPa)	5700 (39.3)
Elongation at Break ¹	ISO 12086	ASTM D4894	%	350
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		3.4
Water Content	ISO 12086	ASTM D4894	%	<0.04

Note: Teflon™ PTFE 7C 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.

