

# DuPont™ Teflon® PTFE 7A X

## PTFE GRANULAR MOLDING RESIN

### Product Information

#### Description

Teflon® PTFE 7A X is a white powder with small particle size and high bulk density. The small particle size of Teflon® PTFE 7A X 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, such as billets, requiring optimum mechanical and electrical properties. It is also used in a mixture with fillers when they are added to modify the mechanical properties of moldings. Properly processed products made from neat Teflon® PTFE 7A X provide the superior properties typical of the fluoroplastic resins: retention of properties after service at 260 °C (500 °F), useful properties at -240 °C (-400 °F), chemical inertness to nearly all industrial chemicals and solvents, and low friction and anti-stick surfaces. Dielectric properties are outstanding and stable with frequency and temperature. Molded products have moderate stiffness and high elongation.

Teflon® PTFE 7A X resists ignition and does not promote flame spread. When ignited by flame from other sources, the contribution of heat is small and with little smoke. 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.

#### Typical Applications

Many end products are fabricated from moldings of Teflon® PTFE 7A X, including skived film and sheet, gaskets, packings, mechanical seals, bridge or pipeline bearing pads, shaft bearings, electrical insulators, piston rings, expansion bellows, diaphragms, and 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 DuPont representative.

#### Safety Precautions

**Before processing any fluoroplastics, read the Material Safety Data Sheet, available upon request from our Customer Care Group at (800) 207-0756 in the US or (302) 996-7906 (outside of the US). 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](http://www.fluoropolymers.org)) or by PlasticsEurope ([www.plasticseurope.org](http://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 drums. For shipping convenience, orders of 320 kg (8 drums/pallet) are recommended.



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## Typical Property Data for Teflon® PTFE 7A X

Property	Test method		Unit	Typical value
Particle size, average diameter	ISO 13320	ASTM D 4894	µm	34
Standard specific gravity	ISO 12086	ASTM D 4894		2,159
Bulk density	ISO 12086	ASTM D 4894	g/L	460
Tensile strength <sup>1)</sup>	ISO 12086	ASTM D 4894	MPa (psi)	34.5 (5,004)
Elongation at break <sup>1)</sup>	ISO 12086	ASTM D 4894	%	375
Melting peak	ISO 12086	ASTM D 4894		
Initial			°C	344 ± 10
Second			°C	327 ± 10
Thermal Instability Index	ISO 12086	ASTM D 4894	-	3
Water content	ISO 12086	ASTM D 4894	%	<0.04

**Note:** Teflon® PTFE 7A X meets the requirements of ASTM D 4894-07, type II.

Typical properties are not suitable for specification purposes.

<sup>1)</sup> Measured on skived tapes with a thickness of 0.13 mm.

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](http://www.fluoropolymers.dupont.com) for more details.

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For medical emergencies, spills, or other critical situations, call 1-800-441-7515 within the United States. For those outside of the United States, call 1-302-774-1000.

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