

DuPont™ Teflon® PTFE CFP 6000 X Fluoropolymer Resin

PTFE FINE POWDER

Product Information

Description

DuPont™ Teflon® PTFE CFP 6000 X is a polytetrafluoroethylene fine powder resin used primarily for paste extrusion. Teflon® PTFE CFP 6000 X offers the excellent combination of properties typical of the Teflon® fluoropolymer resins:

- chemical inertness to nearly all industrial chemicals and solvents
- superior in-use thermal stability (low thermal instability index)
- exceptional dielectric properties, stable with frequency and temperature;
- toughness and flexibility
- low coefficient of friction
- non-stick characteristics
- negligible moisture absorption
- excellent weather resistance
- service temperature up to 260 °C (500 °F)
- useful properties at -240 °C (-400 °F)
- moderate stiffness and high ultimate elongation

Teflon® PTFE CFP 6000 X is designed for processing at medium to high reduction ratios (250:1 to 3000:1). It is particularly suitable for production of wire coating, wire jacketing and tubing at fast sintering rates with superior thermal stability in use.

Teflon® PTFE CFP 6000 X meets the requirements of ASTM D4895-10, Type I, Grade 3, Class C.

Typical Applications

Teflon® PTFE CFP 6000 X is designed for use as wire & cable insulation and small diameter, thin wall tubing.

Processing

Teflon® PTFE CFP 6000 X is extruded using a liquid processing aid such as naphtha. In the paste extrusion process, the powder is mixed with a lubricant aid and then compressed into a cylindrical preform slug under light pressure (1.5 MPa – 220 psi). The preform slug is placed in the cylinder of a paste extruder where the composition is forced under high pressure through a finishing die to produce beading, tubing, or wire coatings. After extrusion, the product is a low-density, but coherent, fibrous structure. Teflon® PTFE CFP 6000 X is usually processed further, with heat, into a solid resin product such as tubing. Heat is applied in two steps, which may be taken in-line with extrusion or separately. The lubricant must be removed first, usually by heating within the range of 100–300 °C (212–572 °F). A sintering

step follows to melt the resin above its melting point of approximately 342 °C (648 °F) and produce the void-free, solid PTFE resin.

Food Contact Compliance

Properly processed products (sintered at high temperatures common to the industry) made from Teflon® PTFE CFP 6000 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 fluoropolymers, 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) or by PlasticsEurope (www.plasticseurope.org).

Storage and Handling

Teflon® PTFE Fine Powder Resins must be handled carefully to avoid shearing the powder prior to extrusion. Fibrillation by shearing is not reversible, and damaged particles can appear as defects in the finished product. As temperature is reduced below the transition point of 19 °C (66 °F), the powder becomes progressively less sensitive to mechanical damage or compaction in its containers.

DuPont recommends that powder compacted during shipping and storage be restored to its optimum condition by cooling it for one or two days below 19 °C (66 °F), followed by screening through a 2 to 4.76 mm opening sieve (4 to 10 mesh). Lumps which are retained on the sieve that can be broken up by shaking at temperatures below 19 °C may be used; however, harder lumps that cannot be broken up should be discarded.

All processing steps prior to preforming should be done at reduced temperature, but ambient dew point must be controlled to prevent condensation on the resin. Storage and handling facilities should be clean to avoid any cross contamination. The high sintering temperature causes even very small foreign particles to become visible or to cause defects in finished products. Keep resin drums closed and clean.



The miracles of science™

Typical Property Data for Teflon® CFP 6000 X

Property Test	Test Method	Unit	Typical Value
Average Particle Size	ASTM D4895 ISO 12086	µm	520
Bulk Density	ASTM D4895 ISO 12086	g/L	460
Standard Specific Gravity	ASTM D4895 ISO 12086		2.190
Thermal Instability Index	ASTM D4895 ISO 12086		<15
Extrusion Pressure at RR=1600:1	ASTM D4895 ISO 12086	Mpa (psi)	41.4(6000)
Melt Peak Temperature			
Initial	ASTM D4895 ISO 12086	°C (°F)	342 (648)
Second	ASTM D4895 ISO 12086	°C (°F)	325 (617)

Note: Teflon® PTFE CFP 6000 X meets the requirements of ASTM D4895-10, Type I, Grade 3, Class C. Typical Properties are not suitable for specification purposes.

Packaging

Teflon® PTFE CFP 6000 X resin is packaged in 25 kg (55.1 lb) plastic containers. For convenient shipment, orders of 300 kg (661.4 lb) pallets (12 drums) are recommended.

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

CAUTION: Do not use DuPont materials in medical applications involving permanent implantation in the human body or contact with bodily fluids or tissues unless the material has been provided from DuPont under a written contract that is consistent with DuPont policy regarding medical applications and expressly acknowledges the contemplated use. For further information, please contact your DuPont representative. You may also visit www.teflon.com/industrial to download a copy of the "DuPont POLICY Regarding Medical Applications" H-50103 and "DuPont CAUTION Regarding Medical Applications" H-50102.

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.

The information set forth herein is furnished free of charge and is based on technical data that DuPont believes to be reliable. It is intended for use by persons having technical skill, at their own discretion and risk. The handling precaution information contained herein is given with the understanding that those using it will satisfy themselves that their particular conditions of use present no health or safety hazards. Because conditions of product use are outside our control, DuPont makes no warranties, express or implied, and assumes no liability in connection with any use of this information. As with any material, evaluation of any compound under end-use conditions prior to specification is essential. Nothing herein is to be taken as a license to operate under or a recommendation to infringe any patents.

NO PART OF THIS MATERIAL MAY BE REPRODUCED, STORED IN A RETRIEVAL SYSTEM OR TRANSMITTED IN ANY FORM OR BY ANY MEANS ELECTRONIC, MECHANICAL, PHOTOCOPYING, RECORDING OR OTHERWISE WITHOUT THE PRIOR WRITTEN PERMISSION OF DUPONT.

HOW TO USE THE DUPONT™ TEFLON® BRAND NAME WITH YOUR PRODUCT

Teflon® is a registered trademark of DuPont for its brand of fluoropolymer resins, coatings, films and dispersions. The Teflon® brand name is licensed by DuPont in association with approved applications. Without a trademark license, customers may not identify their product with the Teflon® brand name as DuPont does not sell such offerings with the Teflon® trademark. Unlicensed customers may refer to the DuPont product offering with only the DuPont name and product code number descriptor as DuPont sells its product offerings. There are no fair use rights or exhaustion of rights to use the Teflon® trademark from buying from DuPont, a DuPont customer or a distributor without a trademark license from DuPont.

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

