



# Teflon™ PTFE

## Fine Powder Fluoropolymer

## Product Information

### Description

Teflon™ PTFE 62N X is a polytetrafluoroethylene fine powder resin used primarily for paste extrusion. Teflon™ PTFE 62N X offers the excellent combination of properties typical of Teflon™ fluoroplastic resins:

- Non-aging characteristics
- Chemical inertness to nearly all industrial chemicals and solvents
- 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

Compared with other grades of PTFE fine powder, Teflon™ PTFE 62N X is a premium resin that has increased thermal stability, superior flex life, superior stress crack resistance, low permeability, and high clarity.

Teflon™ PTFE 62N X is designed for processing at low to medium reduction ratios of 100:1 to 600:1. It is particularly suitable for production of high quality tubing, spaghetti tubing, wire coating, and extruded shapes. This grade is also highly suitable for after processing technologies, such as flanging, welding, blow molding, and convoluting.

Teflon™ PTFE 62N X meets the requirements of ASTM D4895, Type I, Grade 4, Class B.

### Typical Applications

Teflon™ PTFE 62N X is mainly used for tubing installed in demanding applications. It includes high performance

articles, such as reinforced hose requiring the ultimate in reliability and performance in chemical, pharmaceutical, and automotive industry in use with hydraulic fluid, hydrocarbon fuel, or reactive gas. Such applications are, for example, overbraided hoses for fuel assemblies and brake systems.

### Processing

Teflon™ PTFE 62N 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 (1.5–2.0 MPa [220–290 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 62N 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 62N 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 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](http://www.fluoropolymers.org)) or by Plastics Europe ([www.plasticseurope.org](http://www.plasticseurope.org)).



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## 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.

Chemours 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 that are retained on the sieve that can be broken up by shaking at temperatures below 19 °C (66 °F) may be used; however, harder lumps that can not 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.

## Packaging

Teflon™ PTFE 62N 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.

## Typical Property Data for Teflon™ PTFE 62N X Fine Powder Fluoroplastic Resin

| Property Test                    | Test Method |           | Unit      | Typical Value |
|----------------------------------|-------------|-----------|-----------|---------------|
| Average Particle Size, d50       | ASTM D4895  | ISO 12086 | µm        | 480           |
| Bulk Density                     | ASTM D4895  | ISO 12086 | g/L       | 495           |
| Standard Specific Gravity        | ASTM D4895  | ISO 12086 |           | 2.148         |
| Thermal Instability Index        | ASTM D4895  | ISO 12086 |           | <7            |
| Stretch Void Index               | ASTM D4895  | ISO 12086 |           | <50           |
| Extrusion Pressure at RR = 400:1 | ASTM D4895  | ISO 12086 | MPa (psi) | 24 (3,500)    |
| Melt Peak Temperature            |             |           |           |               |
| Initial                          | ASTM D4895  | ISO 12086 | °C (°F)   | 341 (646)     |
| Second                           | ASTM D4895  | ISO 12086 | °C (°F)   | 322 (612)     |

Note: Teflon™ PTFE 62N X meets the requirements of ASTM D4895-15, Type I, Grade 4, Class B. Typical properties are not suitable for specification purposes.

