

DuPont™ Tefzel® ETFE HT-2184

FLUOROPLASTIC RESIN

Product Information

Description

Tefzel® P ETFE fluoropolymer resins in powder form have the same chemical and high-temperature resistance as *Tefzel*® ETFE pellets.

Properly processed products made from *Tefzel*® P ETFE powders provide the superior properties typical of the fluoropolymer resins: retention of properties after service at 155°C (310°F), useful properties at -100°C (-148°F), and chemical inert-ness to nearly all industrial chemicals and solvents. Molded products have stiffness, excellent toughness, low coefficient of friction, nonstick characteristics, resistance to creep at high service temperatures, and excellent weather resistance.

Five grades of *Tefzel*® P ETFE powders covering a broad range of melt flow rates (MFR) and particle size are available (see **Table 1**). The low MFR resin provides a higher degree of stress crack resistance while the high MFR resin is easier to process.

Typical Applications

Tefzel® P ETFE resins are typically used when materials must be dispersed in an ETFE matrix. Materials can be well dispersed in the powder and then either compression molded or melt mixed for additional processing.

Storage and Handling

The properties of *Tefzel*® P ETFE powders are not affected by storage time. Ambient storage conditions should be designed to avoid airborne contamination and the formation of water condensation on the resin when it is removed from containers.

Packaging

Tefzel® P ETFE powders are packaged in 20-kg (44.053-lb) drums with a polyethylene inner lining.

Processing

Processing conditions of these products are similar to conditions for *Tefzel*® ETFE. Refer to DuPont bulletins, "Injection Molding Guide for *Teflon*® FEP, *Teflon*® PFA and *Tefzel*®" and "Extrusion Guide for Melt Processible Fluoropolymers."

Safety Precautions

WARNING!

VAPORS CAN BE LIBERATED THAT MAY BE HAZARDOUS IF INHALED.

Before using *Tefzel*® P ETFE, read the Material Safety Data Sheet and the detailed information in the "Guide to the Safe Handling of Fluoropolymer Resins," latest edition, published by the Fluoropolymers Division of The Society of the Plastics Industry - available from DuPont.

Open and use containers only in well-ventilated areas using local exhaust ventilation (LEV). Vapors and fumes liberated during hot processing, or from smoking tobacco or cigarettes contaminated with *Tefzel*® P ETFE, may cause flu-like symptoms (chills, fever, sore throat) that may not occur until several hours after exposure and typically pass within 24 hours. Vapors and fumes liberated during hot processing should be exhausted completely from the work area; contamination of tobacco with polymers should be avoided. Mixtures with some finely divided metals, such as magnesium or aluminum, can be flammable or explosive under some conditions.

Freight Classification

Tefzel® P ETFE, when shipped by rail or express, is classified as "Plastics, Synthetic, O.T.L., NOIBN."

Resin shipped by truck is classified "Plastics, Materials Granules."

Properties *Tefzel*[®] HT-2184 P ETFE Fluoropolymer Powder Table 1

Property	Test Method	Unit	HT-2184
Melting Point	D3418	°C (°F)	255–280 (491-536)
Melt Flow Rate	D3159	g/10 min	5
Tensile Strength	D638	MPa (psi)	41.4 (6000)
Elongation	D638	%	300
Izod Impact (notched)	D256	—	No Break
Linear Coefficient of Expansion, 0–50°C (32–122°F)	D696	µm/M	200
Linear Coefficient of Expansion, 50–150°C (122–302°F)	D696	µm/M	800
Dielectric Strength	D149	V/mil	400
Dielectric Constant, 1 KHz	D150	—	2.60
Dissipation Factor, 1 KHz	D150	—	0.0007
Hardness	D2240	Shore D	60
Ross Flex	D1052	Flexes	1,000,000
Particle Size		% Less 14 Mesh	5

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CAUTION: Do not use in medical applications involving permanent implantation in the human body. For other medical applications, see "DuPont Medical Caution Statement," H-50102".



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