

# Tefzel™ ETFE HT-2170

## Fluoroplastic Resin

## Product Information

### Description

Tefzel™ ETFE HT-2170 resin combines the chemical and high-temperature resistance of Tefzel™ with antistatic levels of electrical conductivity. Tefzel™ ETFE HT-2170 and the other Tefzel™ fluoroplastics are melt processible, modified copolymers of ethylene and tetrafluoroethylene. They are high-performance resins that can be processed at relatively high rates, compared to other fluorocarbon resins. They are mechanically tough and offer an excellent balance of properties.

Tefzel™ ETFE HT-2170 can perform successfully in applications where other thermoplastics are lacking in mechanical toughness, broad thermal capability, ability to meet difficult environmental conditions, or limited by fabricating problems.

Properly processed products made from neat Tefzel™ ETFE HT-2170 are inert to most solvents and chemicals, hydrolytically stable, and weather-resistant. The recommended upper service temperature is 150 °C (302 °F); useful properties are retained at cryogenic ranges. Mechanical properties include outstanding impact strength, cut-through, and abrasion resistance. The main advantage of Tefzel™ ETFE HT-2170 is that it has improved stress crack resistance and flexibility when compared to other static-dissipating Tefzel™ ETFE resins. To gain stress crack resistance, some physical strength has been sacrificed (see Table 1 for details).

### Processing

Tefzel™ ETFE HT-2170 can be processed by conventional thermoplastic techniques, such as by melt-extrusion or injection, compression, transfer, and blow-molding processes. Drying at 100–130 °C (212–266 °F) in a dehumidified oven for 4 hr is suggested to remove any absorbed moisture.

Reciprocating screw injection molding machines are preferred. Corrosion-resistant metals should be used in contact with molten resin from 300–345 °C (570–650 °F).

Processing conditions of these products are similar to conditions for Tefzel™ contained in the following bulletins by Chemours, “Injection Molding Guide for Teflon™ FEP, Teflon™ PFA, and Tefzel™” and “Extrusion Guide for Melt Processible Fluoropolymers.”

### Typical End Products

Tefzel™ ETFE HT-2170 resin can be used to manufacture extruded tubing, pipe, and other profiles for hose; linings of components used in the chemical processing industries; industrial film; and injection- and blow-molded articles requiring superior electrical, chemical, and thermal properties and stress crack resistance.

### Safety Precautions

Before using Tefzel™ ETFE HT-2170, refer to the Safety Data Sheet and the latest edition of “The Guide to the Safe Handling of Fluoropolymer Resins,” published by The Society of the Plastics Industry, Inc. ([www.fluoropolymers.org](http://www.fluoropolymers.org)) or by PlasticsEurope ([www.plasticseurope.org](http://www.plasticseurope.org)).

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™ ETFE HT-2170, may cause flu-like symptoms (chills, fever, sore throat) that may not occur until several hours after exposure and typically pass within 24 hr. 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.

## Storage and Handling

Tefzel™ ETFE HT-2170 can be processed by conventional thermoplastic techniques, such as by melt-extrusion or injection, compression, transfer, and blow-molding processes. Drying at 100–130 °C (212–266 °F) in a dehumidified oven for 4 hr is suggested to remove any absorbed moisture.

## Packaging

Tefzel™ ETFE HT-2170 resin is available in 2.5-mm (0.1-in) pellets. Tefzel™ ETFE HT-2170 is packaged in 34-kg (75-lb) drums with a polyethylene inner lining. Special packages containing 2.3 kg (5 lb) and 11.3 kg (25 lb) are also available.

**Table 1. Typical Property Data for Tefzel™ ETFE HT-2170 Fluoroplastic Resin**

Property	Test Method*	Unit	Tefzel™ HT-2170	Tefzel™ Fluoroplastic
Thermal				
Nominal Melting Point	D3148	°C (°F)	220–250 (420–480)	255–280 (491–536)
Flow Rate	D3159	g/10 min	2.3	2–11
Upper Service Temperature	UL746	°C (°F)	150 (302)	150 (302)
Mechanical				
Tensile Strength, 23 °C (73 °F)	D638	psi	4,000	6,000–7,500
Specific Gravity	D792	—	1.7	1.7
Ultimate Elongation, 23 °C (73 °F)	D638	%	200	300
Electrical				
Volume Resistivity	D257	ohm-cm	7**	>10 <sup>17</sup>
General				
Weather and Chemical Resistance	—	—	Excellent	Excellent

\*ASTM method, unless otherwise specified

\*\*Volume resistivity as measured on compression molded plaques. Resistivity is very sensitive to processing technique. Injection molded plaques are typically higher. Typical properties are not suitable for specification purposes.

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