Teflon™ PFA C-960

Fluoropolymer Resin

Tentative Product Information

Typical Applications

Applications for Teflon™ PFA C-960 include extruded tubing, profiles, and industrial film and injection or compression molded articles requiring anti-static properties for linings of components used in the chemical processing industries.

A second application is targeted at cables: targets heating cables based on semi-conductive insulation layers and higher voltage applications where corona effects need to be addressed.

Description

Teflon™ PFA C-960 (perfluoroalkoxy) fluoropolymer resins combine the chemical and high temperature resistance of Teflon™ PFA with anti-static levels of electrical conductivity.

Properly processed products made from Teflon™ PFA C-960 resins provide the superior properties typical of fluoropolymers: retention of properties after service estimated at 250 °C (482 °F), useful properties at -196 °C (-321 °F), and chemical inertness to nearly all industrial chemicals and solvents. Molded products have moderate stiffness, excellent toughness, low coefficient of friction, non-stick characteristics, resistance to creep at high service temperatures, and excellent weather resistance.

These resins can be processed by traditional injection molding and extrusion processes. They have high melt strength and thermal stability at high processing temperatures.

Processing

Teflon™ PFA C-960 fluoropolymer resins can be processed by conventional thermoplastic techniques: melt extrusion and compression, injection, and blow molding processes. Drying at 100 °C (212 °F) for 4 hours is recommended to remove any absorbed moisture. Corrosion-resistant metals should be used in contact with molten resin. Extruder barrel should be long, L/D ratio 20:1 to 25:1, to provide residence time for heating the resin to approximately 400°C (752 °F). Due to its lower viscosity, Teflon™ PFA C-960 can be processed faster than Teflon™ PFA C-980.

Safety Precautions

Before using Teflon™ PFA C-960 resin, refer to the Safety Data Sheet and the latest edition of "The Guide to the Safe Handling of Fluoropolymer Resins," published by the Plastics Industry Association (www.plasticsindustry.org) or PlasticsEurope (www.plasticseurope.org). Open and use containers only in well-ventilated areas using local exhaust ventilation (LEV). Vapors and fumes liberated during hot processing of Teflon™ PFA C-960 should be exhausted completely from the work area. Contamination of tobacco with these polymers must be avoided. Vapors and fumes liberated during hot processing that are not properly exhausted, or from smoking tobacco or cigarettes contaminated with Teflon™ PFA C-960, may cause flu-like symptoms, such as chills, fever, and sore throat. This may not occur until several hours after exposure and will typically pass within about 24 hours. Mixtures with some finely divided metals, such as magnesium or aluminum, can be flammable or explosive under some conditions.

Storage and Handling

The properties of Teflon™ PFA C-960 resins are not affected by storage time. Ambient storage conditions should be designed to avoid airborne contamination and water condensation on the resin when it is removed from containers. Drying at 100 °C (212 °F) for 4 hours is recommended before processing to remove any absorbed moisture.

Packaging

Teflon™ PFA C-960 is supplied as pellets and packaged in 45.4-kg drums with a polyethylene inner lining.

Table 1: Tentative Typical Property Data for Teflon™ PFA C-960 Fluoropolymer Resin

Property	Test Method[1]		Unit	Typical Value
General				
Melt Flow Rate at 372 °C (702 °F)/5.0 kg weight	ISO 12086	D3307	g/10 min	8.0
Melting Point	—	D4591	°C (°F)	285 (545)
Specific Gravity	—	D792	—	2.15
Critical Shear Rate, 372 °C (702 °F)	—	—	1/s	30
Mechanical				
Tensile Strength	ISO 12086	D3307	MPa (psi)	28 (4,060)
Elongation	ISO 12086	D3307	%	300
MIT Folding Endurance	—	D2176	Cycles	13,000
Electrical				
Volume Resistivity[2]	ISO 3915	—	Ohm-m	0.11
Other				
Weather and Chemical Resistance	—	—	—	Excellent

Typical properties are not suitable for specification purposes.

[1] ASTM unless otherwise specified.

[2] Volume Resistivity as measured on compression molded plaques. Resistivity is very sensitive to processing technique and conditions. Injection molded plaques are typically higher.

HOW TO USE THE TEFLON™ BRAND NAME WITH YOUR PRODUCT

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