



Teflon™ FEP 100-J

Fluoropolymer Resin

Extrusion and Molding Resin

Product Information

Description

Teflon™ FEP 100-J is a general-purpose resin available in translucent, 2.5 mm pellets. Similar to other Teflon™ FEP (fluorinated ethylene propylene) copolymer resins, Teflon™ FEP 100-J combines the processing ease of conventional thermoplastics with properties similar to those of polytetrafluoroethylene (PTFE). They have high melt strength and stability at recommended processing temperatures.

Teflon™ FEP 100-J is preferred for products that are not exposed to severe environmental stress in service. It is often selected for products made by injection molding because it offers higher available flow rate.

Properly processed products made from neat Teflon™ FEP 100-J resin provide the superior properties typical of fluoropolymer resins: retention of properties after service at 200 °C (392 °F), useful properties at -240 °C (-400 °F), and chemical inertness to nearly all industrial chemicals and solvents. Dielectric properties are excellent. Molded products have moderate stiffness and high ultimate elongation.

In a flame, products made of Teflon™ FEP 100-J resist ignition and do not themselves promote flame spread. When ignited by flame from other sources, their contribution of heat is very small and added at a slow rate with very little smoke.

Typical End Products

Teflon™ FEP 100-J is ideal for many end products, including extruded tubing, heat shrinkable sleeving, and other profiles for electrical insulation or fluid handling; film and products made from film; labware; and injection- and blow-molded articles requiring superior chemical inertness, electrical properties, and purity.

Processing

Teflon™ FEP 100-J can be processed by conventional melt extrusion and injection, compression, transfer, and blow molding processes. High melt strength permits the use of relatively large die openings and high temperature draw-down techniques that increase production rates. Reciprocating screw injection molding machines are preferred. Corrosion-resistant metals should be used in contact with molten resin. Extruder barrels should be long relative to diameter, to provide residence time for heating the resin to approximately 400 °C (752 °F).

Safety Precautions

Warning! VAPORS CAN BE LIBERATED THAT MAY BE HAZARDOUS IF INHALED.

Before using Teflon™ FEP 100-J, read the Safety Data Sheet (SDS) and detailed information in the "Guide to the Safe Handling of Fluoropolymer Resins," published by The Plastics Industry Association (PIA) or Association of Plastics Manufacturers (PlasticsEurope).

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 resin dust, may cause flu-like symptoms (chills, fever, sore throat) that may not occur until several hours after exposure and typically pass within 36 to 48 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

The properties of Teflon™ FEP 100-J resin are not affected by storage time. Ambient storage conditions should be designed to avoid airborne contamination and formation of water condensation on the resin when it is removed from containers.

Packaging

Teflon™ FEP 100-J is supplied as pellets and available in 25 kg (55 lb) multilayer kraft bags with an integral polyethylene liner.

Typical Property Data for Teflon™ FEP 100-J

| Property | ASTM Test Method | Unit | Nominal Value |
|---|------------------|----------|-------------------------|
| Thermal | | | |
| Nominal Melting Point | D3418 | °C (°F) | 255–265 (491–509) |
| Upper Service Temperature | UL 746 | °C (°F) | 200 (392) |
| Flow Rate | D2116 | g/10 min | 7 |
| Mechanical | | | |
| Tensile Strength, 23 °C (73 °F) | D2116 | MPa | 27 |
| Specific Gravity | D792 | — | 2.13–2.17 |
| Ultimate Elongation, 23 °C (73 °F) | D2116 | % | 380 |
| Flexural Modulus, 23 °C (73 °F) | D790 | MPa | 586 |
| Impact Strength, 23 °C (73 °F) | D256 | J/m | No Break |
| Hardness Durometer | D2240 | Shore D | 56 |
| Compressive Strength | D695 | MPa | 21 |
| Linear Coefficient of Expansion, 0–100 °C (32–212 °F) | E831 | mm/mm/°C | 13.5 × 10 ⁻⁵ |
| Electrical | | | |
| Dielectric Strength, 0.25 mm | D149 | kV/mm | 80 |
| Dielectric Constant, 1 MHz, 23 °C (73 °F) | D1531 | — | 2.02 |
| Dissipation Factor, 1 MHz, 23 °C (73 °F) | D1531 | — | 0.0007 |
| Volume Resistivity | D257 | ohm-cm | >10 ¹⁸ |
| Arc Resistance | D495 | sec | No Track |
| General | | | |
| Water Absorption, 24 hr | D570 | % | 0.004 |
| Weather and Chemical Resistance | — | — | Outstanding |
| Limiting Oxygen Index | D2863 | % | 95 |

Note: Typical properties are not suitable for specification purposes. Statements, or data, regarding behavior in a flame situation are not intended to reflect hazards presented by this or any other material when under actual fire conditions. Properly processed products (sintered at high temperatures common to the industry) made from Teflon™ FEP resins can qualify for use in contact with food in compliance with FDA regulation 21 CFR 177.1550.

Teflon™ FEP 100-J is ASTM D2116, Type I.

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