Teflon™ FEP CJ 95

Molding and Extrusion Resin

Product Information

For inventory control purposes, product name may be followed by an X.

Products labeled FEP CJ 95 and FEP CJ 95 X are equivalent, and all information in this document is applicable to both.

Typical Applications

Insulation and jacket for wire and cable in applications demanding a high degree of stress crack resistance. Tubes and piping for general and chemical process industry.

Description

Teflon™ FEP CJ 95 is a melt-processible copolymer of tetrafluoroethylene and hexafluoropropylene, without additives, that meets the requirements of ASTM D 2116 Type I.

It offers the excellent combination of properties characteristic of Teflon™ fluoroplastic resins: non-aging characteristics, chemical inertness, exceptional dielectric properties, low flammability, heat resistance, toughness and flexibility, low coefficient of friction, non-stick characteristics, negligible moisture absorption, and excellent weather resistance. As an intermediate molecular weight resin, Teflon™ FEP CJ 95 offers higher processing speeds than many FEP grades with similar high level of stress crack resistance.

Stress crack resistance is an important element in establishing end-use performance. Extensive testing of wire and cable constructions is required for definitive performance evaluation. Experience shows that the MIT folding endurance or flex life test, performed on a thin film of resin, has established a good correlation with extensive cable testing. The higher the MIT flex life, the higher the stress-crack resistance of the resin. MIT test results should be viewed as a guide to comparative performance of the various grades of resin. We recommend that for applications involving repeated thermal and flex cycling, specific tests on the final cable always should be undertaken. See also the Chemours bulletin, "Grade Selector for Wire and Cable Applications."

Processing

Teflon™ FEP CJ 95 fluoroplastic resin can be processed by conventional melt extrusion, and by injection, compression, transfer, and blow molding processes. For smooth feeding to extrusion equipment, it is supplied in 3 mm (0.12 in) pellets. The extruders and molding machines used for Teflon™ FEP CJ 95 should be constructed of high nickel alloy corrosion-resistant materials and capable of operating at temperatures up to 400 °C (750 °F).

Safety Precautions

Industrial experience has proven that adequate ventilation, in properly maintained processing and handling areas, will eliminate known hazards to personnel. Resin containers should be opened and used in well-ventilated areas.

Equipment used to process at melt temperatures should be provided with local exhaust ventilation (LEV) to completely remove all fumes and vapors from the processing area. In addition, care should be exercised to avoid the contamination of cigarettes and other forms of smoking tobacco when using fluoroplastic resins. Before processing any fluoroplastics, read the Material 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) or by PlasticsEurope (www.plasticseurope.org).

Food Contact Compliance

Properly processed products made from Teflon™ FEP CJ 95 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.

Storage and Handling

The properties of Teflon™ FEP CJ 95 resins are not affected by storage time. Ambient storage conditions should be designed to avoid airborne contamination and water condensation on the resin when opening and emptying the packaging.

Packaging

Teflon™ FEP CJ 95 is packaged in 25-kg, single layer, plastic bags. For convenient shipment, orders of 1,000-kg pallets are recommended.

Table 1: Typical Property Data for Teflon™ FEP CJ 95 Molding and Extrusion Resin

Property	Test Method[1]		Unit	Typical Value
GENERAL				
Melt Flow Rate (MFR at 372 °C [702 °F]/5.0 kg)	ISO 12086	D 2116	g/10 min	5
Specific Gravity	ISO 1183	D 792		2.14
Critical Shear Rate (372 °C/702 °F)		Chemours	1/s	20
Guide DDR Range for Tubing Extrusion				3–8
Guide DDR Range for Cable Extrusion				20–120
MECHANICAL				
Tensile Strength, 23 °C (73 °F)	ISO 12086	D 638	MPa (psi)	28 (4,060)
Elongation, 23 °C (73 °F)	ISO 12086	D 638	%	325
Hardness, Shore Durometer	ISO 868	D 2240		D 56
Impact Strength, Notched Izod, 23 °C (73 °F)	ISO 180	D 256	kJ/m^2	No Break
MIT Folding Endurance (0.20 mm, 8 mil film)		D 2176[5]	Cycles	40,000
ELECTRICAL				
Relative Permittivity, 1 kHz	IEC 250	D 150		2.03
Relative Permittivity, 1 GHz	IEC 250	D 150		2.03
Dissipation Factor, tg δ, 1 kHz	IEC 250	D 150		0.00005
Dissipation Factor, tg δ, 1 GHz	IEC 250	D 150		0.0008
Dielectric Strength, Short Time, 0.25 mm Film	IEC 243	D 149	kV/mm	> 95
THERMAL				
Melting Point		D 4591/D 3418	°C (°F)	260 (500)
Continuous Service Temperature[2]		—	°C (°F)	205 (400)
Flammability Classification[3, 4]		UL 94		V-0
Limiting Oxygen Index	ISO 4589	D 2863	%	> 95
OTHER				
Chemical Resistance		D 543		Excellent
Water Absorption, 24 hr		D 570	%	< 0.01
Weather Resistance				Excellent

Note: Teflon™ FEP CJ95 meets the requirements of ASTM D 2116-07(2012), Type I.
Typical properties are not suitable for specification purposes.

[1] ASTM method unless otherwise specified.

[2] Definition of continuous service temperature:The continuous service temperature is based on accelerated heat-aging tests, and represents the temperature at which tensile strength and ultimate elongation retains 50% of the original values, after 20,000 hr thermal aging When considering the use of Teflon™ FEP CJ 95 at elevated temperatures, especially in combination with mechanical, electrical or chemical exposure, preliminary testing should be done to verify suitability.

[3] These results are based on laboratory tests, under controlled conditions, and do not reflect performance under actual fire conditions.

[4] Current rating is a typical theoretical value.

[5] Historical Standard.

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