FEP 4622

Everflon™ Fluoropolymers

Extrusion Pellets

DESCRIPTION

Everflon™ FEP 4622 is a melt-processible fluoroplastic resin available in pellet form. It is a copolymer of tetrafluoroethylene and hexafluoropropylene, without additives, that meets the requirements of ASTM D 2116 Type II. With a relatively high melt flow rate and excellent electrical properties, Everflon™ FEP 4622 has been specifically designed for high-speed extrusion of thin coatings on small-gauge wires for twisted-pair constructions.

This resin provides the electrical and mechanical properties needed for low voltage applications. In addition, Everflon™ FEP 4622 has a higher melt flow rate than most other fluoroplastic resins. This permits higher extrusion speeds and easier processing, making Everflon™ FEP 4622 a cost-effective alternative for producing thin-wall extrusions.

Everflon™ FEP 4622 is designed and made to have improved adhesion to copper wire under specific wireline process conditions, low dissipation factor at high frequencies, and significant plate-out resistance in melt extrusion. It is suitable as a solid insulator and as a foamed insulator, when used with an appropriate nucleant in a nitrogen gas injection process.

Everflon™ FEP 4622 is used when traditional extrusion and molding processes are required for producing products with the superior properties of a fluoroplastic resin. Compared to other thermoplastics, the high melt strength and thermal stability of Everflon™ FEP 4622 can be used to improve processing rates.

Compared with other fluoroplastics, creep resistance at high service temperatures provides a superior balance and level of end-use properties. Everflon™ FEP 4622 combines the processing ease of conventional thermoplastics with many properties similar to those of polytetrafluoroethylene.

Properly processed products made from neat Everflon™ FEP 4622 resin provide the superior properties characteristic of fluoroplastic resins: chemical inertness, exceptional dielectric properties, heat resistance, toughness and flexibility, low coefficient of friction, nonstick characteristics, negligible moisture absorption, low flammability, performance at temperature extremes, and excellent weather resistance.

In a flame situation, products of Everflon™ FEP 4622 resist ignition and do not 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 Property Data for Everflon™ FEP 4622 Fluoroplastic Resin

Melt Flow Rate
ASTM D2116

20~24

g/10 min 5kg

Tensile Strength
ASTM D638

>20

Mpa

Elongation
ASTM D638

>300

%

Melting Point
ASTM D4591

260

°C

General Property Data for Everflon™ FEP 4622

Property	Test Method		Unit	Typical Value
PROCESSING				
Specific Gravity	—	ASTM D792	—	2.15
Critical Shear Rate, 372 °C (702 °F)	—	—	1/s	150
Guide DDR Range for Cable Extrusion				60~120
MECHANICAL				
Impact Strength, Notched Izod, 23 °C (73 °F)		ASTM D256	kJ/m²	No Break
MIT Folding Endurance (0.20 mm, 8 mil film)	—	ASTM D2176	Cycles	500,000
Hardness Durometer	ISO 868	ASTM D2240	—	D56
ELECTRICAL				
Dielectric Strength, Short Time, 0.25 mm (0.010 in)	IEC 243	ASTM D149	kV/mm	> 100
Relative Permittivity, 1 kHz	IEC 250	ASTM D150	—	2.03
Relative Permittivity, 1 GHz	IEC 250	ASTM D150	—	2.03
Dissipation Factor, tg δ, 1 kHz	ISO 1325	ASTM D150		0.00005
Dissipation Factor, tg δ, 1 GHz	ISO 1325	ASTM D150		0.0007
OTHER				
Water Absorption, 24 hr	—	ASTM D570	%	<0.01
Weather and Chemical Resistance	—	—	—	Excellent
Limiting Oxygen Index	ISO 4589	ASTM D2863	%	>95
Continuous Service Temperature	—	—	°C (°F)	205 (400)
Flammability Classification	—	UL 94	—	V-0

Note: For more information of **FEP** properties, please visit www.everflon.com or FEP TechBook. These results are based on laboratory tests, under controlled conditions, and do not reflect performance under actual fire conditions.

TYPICAL APPLICATIONS

Small diameter, thin wall wire and cable insulation; industrial film; and intricate or thin wall parts made by injection molding.

PROCESSING GUIDE

Everflon™ FEP fluoroplastic resin can be processed by conventional melt extrusion, and by injection, compression, 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 Everflon™ FEP should be constructed of high nickel alloy corrosion-resistant materials and be capable of operating at temperatures up to 400 °C (750 °F)

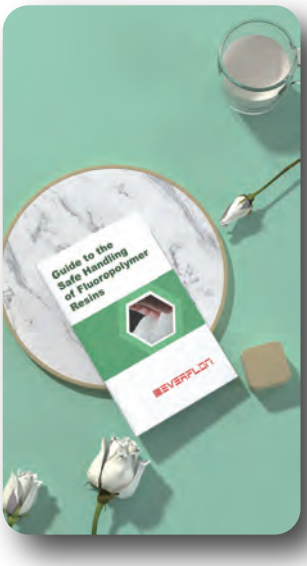
HANDING & PACKAGE

Everflon™ FEP is packaged in 25-kg, single layer, plastic bags. For convenient shipment, orders of 1000-kg gallary are recommended.

The properties of Everflon™ FEP resin 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.

PRECAUTION

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.



ABOUT EVERFLON+

Reap the benefits of excellent pigment dispersion in your final polymer mix with Everflon+™ masterbatch formulations for FEP polymers. Pigment concentration and viscosity can be tailored to your specific application, and formulations are suitable for end-products with wall thicknesses that are as thin as one millimeter or 25 microns.

Color Concentrate

Foamed Fluorinated Ethylene Propylene, also referred to as Foamed FEP, is a form of fluoropolymer insulation. As it sounds, the insulation is a form of foam. It has similar properties to FEP and is very resistant to chemicals, has a broad temperature range and exhibits excellent electrical properties. One difference between standard FEP and Foamed FEP is that Foamed FEP is typically only used as a wire insulation and not as an overall cable jacket. Foamed FEP is commonly used for plenum applications. Plenum rated cables can exhibit a fire resistance or a low smoke quality and is used in building construction.More information could visit www.everflon.com or Everflon+Foam Fluoropolymers Book

Foam FEP Resin

Reinforced Compounds

Reinforced compounds incorporate glass fibers, carbon fibers or mineral fillers for enhanced dimensional stability, toughness, abrasion resistance, shrinkage resistance and thermal conductivity characteristics.

More information could visit www.everflon.com or Everflon+Reinfored Fluoropolymers Book

ABOUT C&F AND EVERFLON FLUOROPOLYMERS

Everflon™ is brand of C&F Group dealing in fluoropolymers materials including PTFE.FEP.PFA.ETFE and PVDF. On the basis of Everflon, C&F also developing the fluoropolymer applications including tubing,coating and films.

More information could visit www.everflon.com or Everflon™ Fluoropolymers Introduction and C&F Chemicals Book

For more information, visit www.everflon.com
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