FEP 4601

Everflon™ Fluoropolymers

Molding Pellets

DESCRIPTION

Everflon™ FEP 4601 fluoropolymer resin is a meltprocessible fluoropolymer resin useful forconstructions that require very high stress crackresistance in primaries or jackets.This resin provides theelectrical and mechanical properties needed forlow-voltage applications. Everflon™ FEP 4601 has thelowest melt flow of any Everflon™ FEP fluoropolymer resin. This high melt viscosity correspondsto a high molecular weight that is useful forconstructions with very thick walls, that requireexceptional stress crack resistance, or thatexperience significant thermal cycling. The lowmelt flow, however, substantially reduces therate at which Everflon™ FEP 4601 can be extruded.Like all Everflon™ fluoropolymer resins, Everflon™ FEP 4601 offers an excellent combination ofproperties:

- chemical inertness,
- exceptionaldielectric properties,
- heat resistance,
- toughness,
- flexibility,
- low coefficient of friction,
- non-stickcharacteristics,
- negligible moisture absorption,
- low flammability,
- performance at temperatureextremes,
- and weather resistance.

Typical Property Data for Everflon™ FEP 4601 Fluoroplastic Resin

Melt Flow Rate
ASTM D2116

1.5
g/10 min 5kg

Tensile Strength
ASTM D638

>30
Mpa

Elongation
ASTM D638

>380
%

Melting Point
ASTM D4591

260
°C

General Property Data for Everflon™ FEP 4601

Property	Test Method		Unit	Typical Value
PROCESSING				
Specific Gravity	—	ASTM D792	—	2.15
Critical Shear Rate, 372 °C (702 °F)	—	—	1/s	12
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

Everflon™ FEP 4601 is only used in specialized wireand cable applications that can benefit from itsunusual properties such as its great resistance tostress cracking. Everflon™ FEP 4601 can be used asjacket material for data and telecommunicationscables, for use in air return plenums, but Everflon™ FEP 4610 has a much faster processing speed which makes it moreeconomical for most applications that do not requirethe stress crack resistance of Everflon™ FEP 4601.

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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