Teflon® FEP 106

Perfluoroethylene Propylene Copolymer

DuPont Fluoropolymers

Message:

For inventory control purposes product name may be followed by an X.
Products labeled FEP 106 and FEP 106 X are equivalent and all information in this document is applicable to both.
Typical Application
Small diameter, thin wall wire and cable insulations. Intricate or thin wall parts made by injection moulding.
DuPont Teflon® FEP 106 is a melt-processible copolymer of tetrafluoroethylene and hexafluoropropylene without additives that meets the requirements of ASTM D 2116 type II.
It offers the excellent combination of properties characteristic of Teflon® fluoropolymer resins: non-ageing characteristics, chemical inertness, exceptional dielectric properties, heat resistance, toughness and flexibility, low coefficient of friction, non-stick characteristics, negligible moisture absorption, low flammability, performance at temperature extremes and excellent weather resistance.
Teflon® FEP 106 is a "high productivity" grade of Teflon® FEP. It is designed for the extrusion of thin wall, small diameter wire insulations. It can also be used for injection moulding of intricate and thin wall parts.
At processing temperatures it shows low viscosity and a high critical shear rate. In similar wire constructions it can be extruded at higher extrusion line speeds than the general purpose grade Teflon® FEP 100.
Stress-crack resistance is an important element in establishing end-use performance. 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 DuPont's bulletin "Grade selector for Wire and Cable applications".

General Information	
Features	Copolymer
	Food Contact Acceptable
	Good Chemical Resistance
	Good Flexibility
	Good Toughness
	Good Weather Resistance
	High Heat Resistance
	Low Friction
	Low Moisture Absorption
	Low Viscosity
Uses	Insulation
	Thin-walled Packaging
	Wire & Cable Applications
Agency Ratings	ASTM D 2116 type II
	EU No 10/2011
	FDA 21 CFR 177.1550
Forms	Pellets
Processing Method	Blow Molding
	Compression Molding

Extrusion

Injection Molding

Physical	Nominal Value	Unit	Test Method
Specific Gravity	2.13	g/cm³	ISO 1183, ASTM D792
Melt Mass-Flow Rate (MFR) (372°C/5.0 kg)	22	g/10 min	ASTM D2116, ISO 12086
Water Absorption (24 hr)	< 0.010	%	ASTM D570
Hardness	**Nominal Value**	**Unit**	**Test Method**
Durometer Hardness (Shore D)	56		ASTM D2240, ISO 868
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Strength (Yield, 23°C)	22.0	MPa	ASTM D638, ISO 12086
Tensile Elongation (Break, 23°C)	300	%	ASTM D638, ISO 12086
Impact	**Nominal Value**	**Unit**	**Test Method**
Notched Izod Impact (23°C)	No Break		ASTM D256, ISO 180
Thermal	**Nominal Value**	**Unit**	
Continuous Use Temperature [1]	205	°C	
Melting Temperature [2]	255	°C	
Electrical	**Nominal Value**	**Unit**	**Test Method**
Dielectric Strength			
0.250 mm [3]	> 85	kV/mm	ASTM D149
0.250 mm	> 85	kV/mm	IEC 60243-1
Dielectric Constant			ASTM D150, IEC 60250
1 kHz	2.03		
1.00 GHz	2.03		
Dissipation Factor			ASTM D150, IEC 60250
1 kHz	7.0E-5		
1.00 GHz	1.2E-3		
Flammability	**Nominal Value**	**Unit**	**Test Method**
Flame Rating [4]	V-0		UL 94
Oxygen Index	> 95	%	ASTM D2863, ISO 4589-2
Additional Information	**Nominal Value**	**Unit**	**Test Method**
Critical Shear Rate (372°C)	155	sec^-1	Internal Method
Guide DDR Range - for cable extrusion	60.0 to 100		
MIT Folding Endurance - film (200.0 µm)	5.0E+3	Cycles	ASTM D2176
NOTE			

1.	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 h thermal aging When considering the use of Teflon ® FEP at elevated temperatures especially in combination with mechanical, electrical or chemical exposure, preliminary testing should be done to verify suitability.
2.	ASTM D4591 / D3418
3.	Method A (Short-Time)
4.	- These results are based on laboratory tests, under controlled conditions, and do not reflect performance under actual fire conditions.- Current rating is a typical theoretical value

Recommended distributors for this material

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