

Teflon® PFA 940HP Plus

Perfluoroalkoxy

DuPont Fluoropolymers

Описание материалов:

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

Products labeled PFA 940HP Plus and PFA 940HP Plus X are equivalent and all information in this document is applicable to both.

Typical Application

With a typical MIT folding endurance of 300,000* cycles, DuPont™ Teflon® PFA 940HP Plus is designed to withstand repeated flexing and aggressive chemical stress-cracking agents. Applications for Teflon® PFA 940HP Plus include fluid handling components for high-performance chemical delivery systems, as well as tubing, unsupported pipe linings for the production of ultra-pure chemicals, and semiconductor components where purity in the parts-per-billion range is critical.

Description

DuPont™ Teflon® PFA 940HP Plus is a premium fluoroplastic resin available in pellet form. Teflon® PFA 940HP Plus possesses the same exceptional chemical resistance, high purity, and protection against ionic contamination as Teflon® PFA HP grades with the added benefits of improved flex life (typical MIT flex of 300,000*) and chemical stress-crack resistance. Teflon® PFA 940HP Plus meets the increasingly stringent requirements for ultra-reliable and non-contaminating parts, as well as unmatched HCl permeation resistance. The improved flex life and chemical resistance will reduce the cost of ownership of high purity fluid handling systems by reducing downtime caused by mechanical or chemical stresses. Additionally, parts molded with Teflon® PFA 940HP Plus have improved clarity and a smooth finish, which can further help prevent buildup of microbial contamination in water handling systems. Table 1 shows the typical property data for Teflon® PFA 940HP Plus.

This special purpose resin has a relatively high melt flow rate (typical MFR of 16), which permits higher extrusion speed and easier processing. The enhanced resistance to environmental stress-cracking makes Teflon® PFA 940HP Plus a preferred resin when extended service is required in hostile environments involving chemical, thermal, and mechanical stress. Additionally, the enhanced purity of Teflon® PFA 940HP Plus makes it suitable for applications that require improved color, lower extractable fluorides, and freedom from other foreign materials. This product contains no additives and is designed for hostile chemical environments where purity in the parts-per-billion range is needed. Examples are in semiconductor manufacture, fluid handling systems for industry or life sciences, and instrumentation for precise measurements of fluid systems. Teflon® PFA 940HP Plus combines the processing ease of conventional thermoplastics with the properties similar to those of polytetrafluoroethylene.

With Teflon® PFA 940HP Plus, components can last longer under dynamic loads and resist damage caused by ozonated fluids and fluorosurfactants. Combined with excellent chemical, permeation, and stress-crack resistance, this durability leads to a reduced cost of ownership. The high purity and fully fluorinated molecule end groups of Teflon® PFA 940HP Plus can reduce contamination to protect process yields.

Properly processed products made from neat Teflon® PFA 940HP Plus resin provide the superior properties characteristic of fluoroplastic resins: 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.

In a flame situation, products of Teflon® PFA 940HP Plus 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.

Teflon® PFA 940HP Plus meets the requirements of ASTM D3307, Type IV

Главная Информация

Характеристики

Высокая чистота

Низкий коэффициент трения

Низкая гигроскопичность

Низкий дым

Высокий уровень ЭСКП (устойчивость к растрескиванию)

Хорошая электрическая производительность

Хорошая гибкость

Высокая яркость

Хорошая химическая стойкость

Хорошая устойчивость к погоде

Теплостойкость, средняя

Термическая стабильность, хорошая

Хорошая прочность

Средняя прозрачность

Используется
Подкладка
Фитинги для труб
Жидкостная обработка

Формы
Частицы

Метод обработки
Экструзия
Литье из смолы
Прессформа сжатия
Литье под давлением

Физический	Номинальное значение	Единица измерения	Метод испытания
Удельный вес	2.14	g/cm ³	ASTM D792
Массовый расход расплава (MFR) (372°C/5.0 kg)	16	g/10 min	ASTM D3307, ISO 12086
Поглощение воды (24 hr)	< 0.030	%	ASTM D570
Твердость	Номинальное значение	Единица измерения	Метод испытания
Твердость дюрометра (Shore D)	55		ASTM D2240, ISO 868
Механические	Номинальное значение	Единица измерения	Метод испытания
Прочность на растяжение			ASTM D3307, ISO 12086
23°C	28.0	MPa	ASTM D3307, ISO 12086
200°C	11.0	MPa	ASTM D3307, ISO 12086
Удлинение при растяжении			ASTM D3307, ISO 12086
Fracture, 23°C	310	%	ASTM D3307, ISO 12086
Fracture, 200°C	450	%	ASTM D3307, ISO 12086
Флекторный модуль			ASTM D790, ISO 178
23°C	650	MPa	ASTM D790, ISO 178
200°C	60.0	MPa	ASTM D790, ISO 178
Тепловой	Номинальное значение	Единица измерения	Метод испытания
Температура плавления	290	°C	ASTM D4591
Электрический	Номинальное значение	Единица измерения	Метод испытания
Сопrotивление громкости	1.0E+18	ohms-cm	ASTM D257, ISO 1325
Диэлектрическая прочность			
0.250 mm ¹	80	kV/mm	ASTM D149
0.250 mm	80	kV/mm	IEC 60243-1
Диэлектрическая постоянная (1 MHz)	2.03		ASTM D150, IEC 60250
Коэффициент рассеивания (1 MHz)	< 2.0E-4		ASTM D150, IEC 60250

Воспламеняемость	Номинальное значение	Единица измерения	Метод испытания
Огнестойкость ²	V-0		UL 94
Индекс кислорода	> 95	%	ASTM D2863, ISO 4589-2
Дополнительная информация	Номинальное значение	Единица измерения	Метод испытания
Критическая скорость сдвига (372°C)	56.0	sec ⁻¹	
Мит складной выносливость ³ (200.0 μm)	3.0E+5	Cycles	ASTM D2176
Weather and Chemical Resistance: Outstanding			

NOTE

- Method A (short time)
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.
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- Depending on fabrication conditions

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