

Nanofluor® Y60B

Organic filled ultra-pure reduced fluorosurfactant fluoroelastomer

Description

A fluoroelastomer compound reinforced with semi-crystalline perfluoropolymer nano-particles, specially developed to meet the demands of the semiconductor industry.

Nanofluor® Y60B combines a fully fluorinated nano-filler system which significantly reduces gas permeability. The absence of metallic or carbon-based fillers produces an exceptionally pure elastomer that is less prone to chemical attack with the benefit of reduced swelling following exposure to aggressive media.

Nanofluor® Y60B bridges the gap between fluorocarbon (FKM) and perfluoroelastomer (FFKM). Its high fluorine content provides unrivalled purity, excellent high temperature capability and very good chemical resistance. Y60B is also a cost effective upgrade from FKM and fluorosilicone in many semiconductor applications.

PPE support enhanced responsible fluoropolymer manufacturing practices and have developed Y60B as an alternative material to the legacy Y75N, by leveraging a new fluoropolymer manufacturing process that significantly reduces the use of fluorinated surfactants, thus making the whole production cycle more environmentally sustainable.

Key Attributes

- ▶ Exceptional oxygen plasma resistance
- ▶ Good all round chemical and temperature resistance
- ▶ Extremely low permeability and outgassing properties making it ideal for vacuum sealing applications
- ▶ High sealing conformity reduces surface permeation
- ▶ Exceptionally pure – does not contain any inorganic fillers which cause particulation problems
- ▶ Outstanding mechanical properties

Typical Applications

- ▶ Dry plasma etch
- ▶ Wet etch (acid based)
- ▶ Oxidation/diffusion
- ▶ Dry ashing
- ▶ Lithography
- ▶ Static seals: O-rings, body seals, cathode seals, gaskets
- ▶ NW and KF flange fittings
- ▶ Gaskets

Other materials in this range

Perlast® G67P (FFKM)
 Perlast® G74P (FFKM)
 Perlast® G65HP (FFKM)
 Perlast® Helios G7HA (FFKM)
 V75SC (FKM)



Typical Material Properties

Property	Test method	Value
Material Type	ASTM D1418	FKM Type 2
Colour		Dark Brown
Hardness (Shore A)	ASTM D2240	61
Tensile Strength (MPa)	ASTM D412	22.0
Elongation at break (%)	ASTM D412	360
50% Modulus (MPa)	ASTM D412	1.5
100% Modulus (MPa)		2.0
Compression Set (%): 24 h @ 200°C (392°F)	ASTM D395B	15
72 h @ 200°C (392°F)		27
Glass Transition: Tg	D3418	-5°C (+23°F)
Minimum Operating Temperature		-20°C (-4°F)
Maximum Operating Temperature	*	+225°C (+437°F)
Continuous Use Temperature	**	+200°C (+392°F)

* and ** PPE proprietary test methods

SPECIAL NOTE: This information is to the best of our knowledge accurate and reliable. However, PPE Ltd makes no warranty, expressed or implied that parts manufactured from this material will perform satisfactorily in the customer's application. It is the customer's responsibility to evaluate parts prior to use, especially in applications where their failure may result in injury and/or damage. While this material has been developed as an alternative to a legacy material, technical and commercial equivalency is neither given or implied and suitability should be considered on a case-by-case basis. It should also be noted that all elastomeric parts have a finite life, therefore a regular program of inspection and replacement is strongly recommended. In non-black grades of elastomer, it is possible to observe slight variations in colour. This is normal and is inherent in the part; it is not indicative of foreign matter. These colour variations are not expected to adversely affect the performance of the part. The material properties above should not be used for specification purposes.



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