

Perlast® G100XT

An elite ultra-pure translucent perfluoroelastomer

PERLAST®

Description

A visibly clear and highly reinforced perfluoroelastomer, combining ultra-high purity with excellent mechanical properties. Developed for use in advanced wet and dry semiconductor processes down to the 45nm node and beyond, this material has ultra-low out-gassing properties, high temperature stability and excellent plasma resistance to provide effective sealing in extreme conditions.

Perlast® G100XT combines a fully fluorinated polymer backbone with a highly fluorinated cross-linking system to provide a material with exceptional resistance to high temperature and aggressive semiconductor processes. The fully organic structure of the material helps to eliminate particles and reduce cost of ownership. The superior chemical performance of the material is enhanced by exceptionally low compression set, high elongation and ultimate tensile strength.

Perlast® G100XT has a low modulus, giving it a very high sealing efficiency. The material is highly resistant to stress induced chemical attack in constant compression or constant strain environments, leading to longer service life and reliable sealing performance.

Key Attributes

- ▶ Exceptionally pure - does not contain any inorganic fillers which may cause particulation problems.
- ▶ High temperature stability
- ▶ Exceptionally low compression set
- ▶ Excellent mechanical properties
- ▶ Ultra low out-gassing
- ▶ High sealing efficiency
- ▶ Reduced Cost of Ownership (CoO)

Typical Applications

Static Seals – O-rings, chamber body seals, chamber lid seals, Cathode Assembly seals, ESC seals, Wafer Lift Pins.

Wafer Handling Products – End effector pads & vacuum suction pads

Suitable for use in:

Wet and dry semiconductor processes sub 45nm node including:-

- All HDP-CVD, PECVD, LPCVD and SACVD processes
- Atomic Layer Deposition
- PVD
- Etch, stripping & cleaning
- RTP/Batch process
- Lithography, optical equipment

Other materials in this range

Perlast® G67P

Perlast® G74P

Perlast® G75H (ultra-pure white)



Typical Material Properties

Property	ASTM	ISO	Value
Material Type	FFKM	FFPM	
Colour			Clear
Hardness: (°IRHD)	D1415	ISO48	60-70
	(Shore A) D2240	ISO7619	62
Tensile Strength (MPa)	D412	ISO37	16.0
Elongation at break (%)	D412	ISO37	280
100% Modulus (MPa)	D412	ISO37	2.3
Compression Set (%):	D395	ISO815	22 hrs @ 200°C (392°F)
			70 hrs @ 200°C (392°F)
Minimum Operating Temperature			-20°C (-4°F)
Maximum Operating Temperature			+275°C (+527°F)

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. 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.

Perlast® is a registered trademark of Precision Polymer Engineering Limited.



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