

Perlast® G65HP

Excellent radical plasma resistant perfluoroelastomer for semiconductor applications

PERLAST®

Description

Perlast® G65HP is a high performance, ultra-high purity perfluoroelastomer, developed specifically for high concentration fluorine radical plasmas such as those typically used in remote chamber cleaning using NF_3 . Perlast® G65HP also offers excellent plasma resistance to general fluorine and chlorine based processes.

Perlast® G65HP 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 and extremely low trace metal content helps to eliminate the risk of particle contamination. Its low erosion rate reduces process tool cost of ownership.

Key Attributes

- ▶ Excellent fluorine, chlorine and oxygen plasma resistance
- ▶ Excellent generic chemical resistance
- ▶ Very low risk of particle generation
- ▶ Good mechanical properties
- ▶ Low out-gassing properties
- ▶ Ultra-low trace metal content

Typical Applications

Developed for use in various critical semiconductor applications. Suitable for use in wet and dry semiconductor processes including:

Plasma Etching
Ash/Resist Stripping
LPCVD, HDPCVD, PECVD, SACVD, ALD
Cleaning
PVD

Dynamic seals –

Bonded Gate Valves & Isolation Valves
Pendulum Valves

Static seals –

Chamber O-rings
Gas inlet seals
Gas feed-through seals
Chamber lid seals etc.
NW/KF fittings

Other components –

Ceramics
Quartz
Sapphire

Other materials in this range

Perlast® G67P (translucent)
Perlast® G74P (translucent)
Perlast® G75B (black high temperature grade 325°C/620°F)



Typical Material Properties

Property	ASTM	ISO	Value
Material Type	FFKM	FFPM	
Colour			Light Brown
Hardness: (°IRHD)	D1415	ISO48	66
	(Shore A) D2240		65
Tensile Strength (MPa)	D412	ISO37	15.0
Elongation at break (%)	D412	ISO37	205
100% Modulus (MPa)	D412	ISO37	4.4
Compression Set (%): 72 hrs @ 200°C (392°F)	D395	ISO815	27
Coefficient of Thermal Expansion (CTE) (°C ⁻¹)			3.67x10 ⁻⁴
Minimum Operating Temperature			-15°C (+5°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 to be used for specification purposes.

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