

# GENIUS™ H75GT

High temperature elastomer for Semiconductor applications

## GENIUS™

Engineered to reduce cost not performance

### Description

A fully fluorinated, caramel colored elastomer, that incorporates a chemically synthesized inert filler system, developed for cost effective sealing in semiconductor process applications.

The material composition of GENIUS H75GT™ has been specifically formulated to provide outstanding all-round chemical and plasma resistance combined with excellent high temperature capability.

GENIUS H75GT™ has a high tolerance to chemical attack, extremely low risk of contamination and particularly suited to applications needing temperature compatibility up to 290°C (554°F).

GENIUS H75GT™ is a highly cost competitive fully fluorinated elastomer where low contamination, greater plasma resistance and high temperature are key requirements.

### Key Attributes

- ▶ Synthetically clean material, minimizes particulate contamination
- ▶ Ultra low metal ion content
- ▶ High sealing conformity, reduces surface permeation
- ▶ Ultra low compression set, ensures optimum seal-life
- ▶ Extremely low outgassing rate (ideal for vacuum applications)
- ▶ Ultra-low erosion rate in plasma environments
- ▶ Outstanding all-round chemical resistance and high temperature stability
- ▶ Cost effective highly fluorinated elastomer

### Typical Applications

Designed for use in semiconductor process applications including:-

- ▶ Plasma ashing
- ▶ Dry plasma etch
- ▶ Wet etch (acid based)
- ▶ CVD, LPCVD, PECVD, HDPCVD, PVD
- ▶ Oxidation/diffusion
- ▶ Lithography
- ▶ Static and dynamic seals
- ▶ Window seals
- ▶ Pumps

### Other materials in this range

GENIUS™ H70GF - fully organic, high purity elastomer

GENIUS™ H75GM - highly fluorinated elastomer

\*For extended operation at high temperature please consult the PPE technical team.  
Not suitable for use with molten alkali metals.



### Typical Material Properties

Property			Value
Material Type	Advanced fluoropolymer		
Colour			Caramel
Hardness: (IRHD) (Shore A)	D1415	ISO48	71
	D2240		76
Tensile Strength (MPa)	D412	ISO37	25.8
Elongation at break (%)	D412	ISO37	136
100% Modulus (MPa)	D412	ISO37	18.8
Compression Set: 72 hrs @ 200°C (392°F)	D395	ISO815	24
Minimum Operating Temperature			-15°C (+5°F)
Maximum Operating Temperature*			+290°C (+554°F)
Coefficient of Thermal Expansion (°C <sup>-1</sup> )			3.0x10 <sup>-4</sup>

**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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