Product Data Sheet

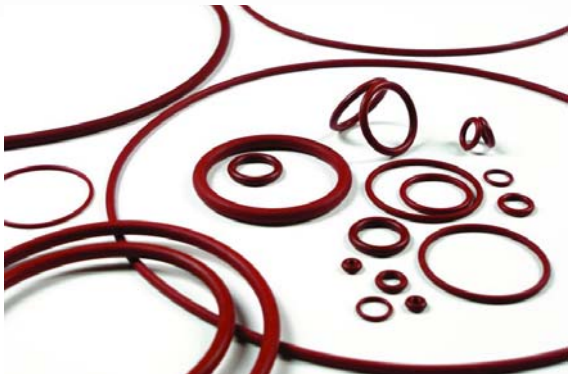
Kimura® K2CD

High performance elastomer (HPE)

KIMURA®

Description

A red/brown high performance polymer containing a unique self-reinforcing polymer structure, developed specifically for aggressive semiconductor applications. The high purity of the polymer combined with the absence of any fillers makes this polymer suitable for processes involving lower feature sizes. This material has a low coefficient of thermal expansion, low compression set and has an extremely low etch rate in aggressive plasma environments.



Key Attributes

- Exceptionally pure - does not contain any fillers which may cause particulation problems.
- Outstanding plasma resistance – ideal for Chlorine, Fluorine & Oxygen chemistries.
- Exceptionally low plasma etch rate
- Low thermal expansion
- Retro-fits existing O-ring grooves (including FKM & FFKM grooves)
- Low permeation
- Low out-gassing
- Low adhesion (reduced sticking)

Typical Applications

Dynamic seals - gate valves, door seals, pendulum valves, ISO valves, bonded gates and lip seals.

Static seals - O-rings, body seals, chamber lid seals, cathode assembly seals, electro-static-chuck seals and flange fittings.

Wafer-handling products – end effector pads & vacuum suction pads

Suitable for use in:
Dry semiconductor processes sub 65nm node including:-
- Chemical Vapour Deposition (CVD)
- Physical Vapour Deposition (PVD)
- Etch

Other materials in this range

Kimura® K13X
Kimura® K23X

Typical Material Properties

Property	ASTM	ISO	Value
Material Type			HPE
Colour			Red/brown
Hardness: (°IRHD) (Shore A)	D1415 D2240	ISO48 ISO7619	67 68
Tensile Strength (MPa)	D412	ISO37	17
Elongation at break (%)	D412	ISO37	170
100% Modulus (MPa)	D412	ISO37	8.0
Compression Set (%): 72 hrs @ 204°C (400°F)	D395	ISO815	15%
Minimum Operating Temperature			-15°C (+5°F)
Maximum Operating Temperature			+300°C (+572°F)
Coefficient of Thermal Expansion			2.45×10^{-4}

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 effect the performance of the part. The material properties above should not to be used for specification purposes.*