

# Kimura® K13X

Specialty Elastomer

Precision Polymer Engineering Ltd.

## Message:

A dark brown high performance polymer containing a unique self-reinforcing polymer structure, developed specifically for critical 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)

Low friction, high strength and high modulus make K13X ideal for constant force dynamic applications.

### Typical Applications

Dynamic seals

Static seals

Wafer-handling products

General Information			
Features	The degassing effect is low to no		
	High purity		
	Low CLTE		
	Low compressive deformability		
	Low friction coefficient		
	High strength		
Uses	Electrical/Electronic Applications		
	Valve/valve components		
	Seals		
	Accessories		
Appearance	Brown		
Hardness	Nominal Value	Test Method	
Durometer Hardness (Shore A)	80	ASTM D2240, ISO 7619	
IRHD Hardness	79	ASTM D1415, ISO 48	
Mechanical	Nominal Value	Unit	Test Method
Coefficient of Friction			
Static @ 150°C/302°F	0.440		
Static @ room temp (21°C/70°F)	0.350		
Maximum Operating Temperature	280	°C	
Coefficient of Linear Thermal Expansion	2.18E-4		

Elastomers	Nominal Value	Unit	Test Method
Tensile Stress (100% Strain)	13.8	MPa	ASTM D412, ISO 37
Tensile Strength (Yield)	23.0	MPa	ASTM D412, ISO 37
Tensile Elongation (Break)	160	%	ASTM D412, ISO 37
Compression Set (204°C, 72 hr)	28	%	ASTM D395, ISO 815

#### Additional Information

Minimum Operating Temperature: -15°C (+5°F)

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