Kalrez® perfluoroelastomer parts
From DuPont Performance Elastomers

Kalrez® 8900

Product Description

Kalrez® 8900 is a black product that has been specifically developed for semiconductor thermal processes, e.g., oxidation, diffusion furnace, metal CVD, ALD and LPCVD. It offers outstanding thermal stability, very low outgassing and excellent (low) compression set properties. Kalrez® 8900 perfluoroelastomer parts exhibit excellent retention of physical properties at elevated temperatures, have excellent mechanical strength and are well-suited for both static and dynamic sealing applications. A maximum continuous service temperature of 325°C is suggested. Short excursions to higher temperatures may also be possible. Ultrapure post-cleaning and packaging is standard for all Kalrez® 8900 parts.

Features/Benefits

- Outstanding thermal stability
- Excellent (low) compression set properties
- Very low outgassing and moisture content
- Low sticking ("stiction") properties
- Excellent fluorine gas resistance
- Excellent retention of physical properties @ elevated temperatures

Suggested Applications

- Quartz Tube Seals
- Plenum Seals
- Chamber Seals
- Fittings
- Center Ring Seals

Typical Physical Properties[1]

Property	Typical Value
Color	Black
Hardness[2], Shore A (Pellet)	73
Hardness[3], Shore M (O-ring)	80
100% Modulus[4], MPa	10.73
Tensile Strength @ Break[4], MPa	16.46
Elongation @ Break[4], %	125
Compression Set[5], %	
70 Hrs. @204°C	8
70 Hrs. @300°C	32
70 Hrs. @325°C	59
Maximum Continuous Service, Temperature[6], °C	325

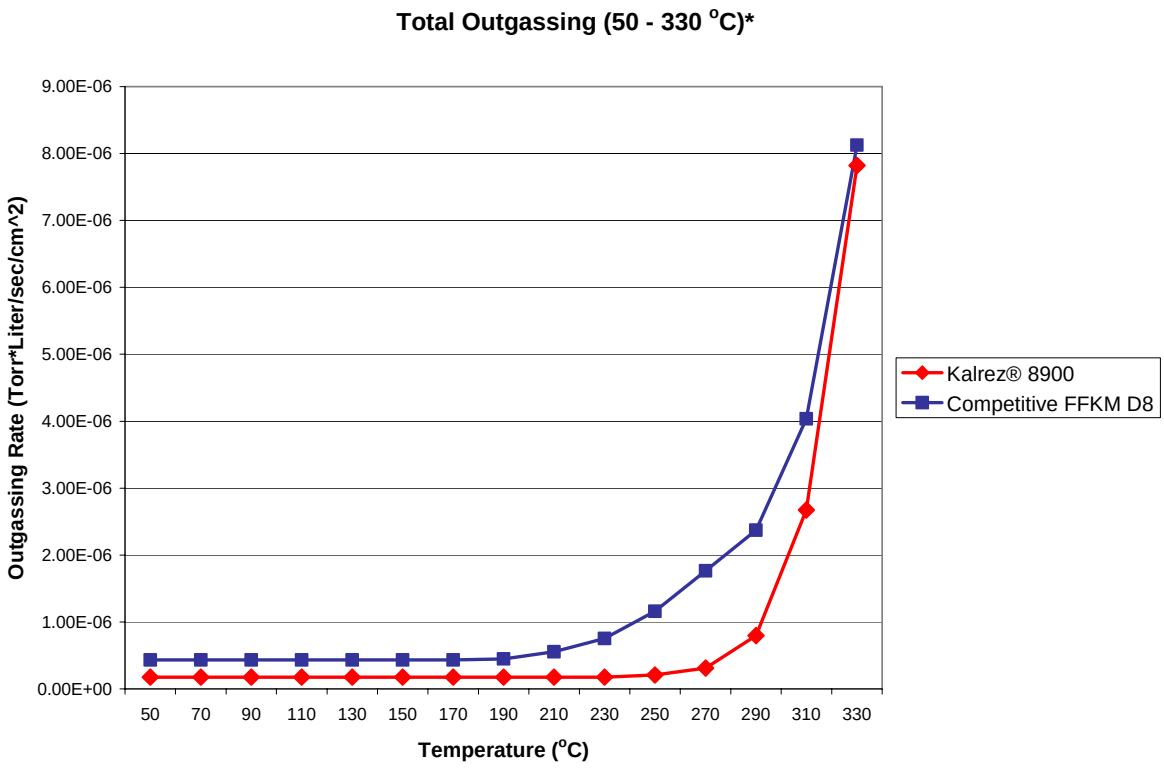
[1] Not to be used for specification purposes
[2] ASTM D2240 (Pellet test specimens)
[3] ASTM D2240 & D1414 (AS568 K214 O-ring test specimens)
[4] ASTM D412 & D1414 (AS568 K214 O-ring test specimens)
[5] ASTM D395B & D1414 (AS568 K214 O-ring test specimens)
[6] DuPont Performance Elastomers proprietary test method

Low Outgassing of Kalrez® 8900 parts

The crosslinking structure of elastomeric seals can become damaged as a result of exposure to high heat and temperature spikes. As a result, elastomeric seals can degrade causing outgassing to occur. Outgassing from sealing materials can be absorbed by the exposed substrate and affect the

properties of the grown film. Figure 1 shows the outgassing properties of Kalrez® 8900 versus a competitive perfluoroelastomer

Figure 1



* Testing performed on a cut section of an AS568 K154 O-ring per DuPont Performance Elastomers proprietary test method.

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