DuPont™ Kalrez® 9300

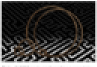
For Semiconductor Dielectric Etch Applications

Technical Information – March, 2017

Product Description

DuPont™ Kalrez® 9300 perfluoroelastomer parts are a brown product for Dielectric (Oxide) Etch applications. It has been specifically designed for use in applications where the plasma environment is a combination of ions ("physical") and radicals ("chemical"), i.e., where a balance of "physical" and "chemical" plasma erosion resistance is typically required.

Kalrez® 9300 exhibits excellent resistance to oxygen and fluorine-based plasma and etch process chemistry. It also offers very low metals content, excellent thermal stability and mechanical strength, and is well suited for both static and dynamic sealing applications. A maximum application temperature of 300°C (572°F) is suggested. Ultrapure post-cleaning and packaging is standard for all Kalrez® 9300 parts.



Kalrez® 9300 parts are based on a proprietary crosslinking and mechanical reinforcement system which is only available from DuPont.

Features/Benefits

- Low erosion rate and ultra-low particle generation in ion/radical dominant oxygen and fluorine-based plasmas
- Excellent resistance to etch process chemistry
- Very low metals content
- Excellent thermal stability
- Excellent mechanical strength

Suggested Applications

- Gas inlet/orifice seals
- Chamber lid seals
- Isolation valve seals
- Bonded gate valves/slit valve door seals

Typical Physical Properties[1]

Color	Brown
Hardness, Shore A (Pellet Stab)[2]	77
Hardness, Shore M (O-ring)[3]	82
100% Modulus[4], MPa (psi)	6.13 (889)
Tensile Strength at Break[4], MPa (psi)	15.43 (2238)
Elongation at Break[4], %	222
Compression Set[5], %	
70 hr. at 204 °C (400°F)	25
70 hr. at 250 °C (482°F)	47
70 hr. at 300 °C (572°F)	56
Maximum Application Temperature[6], °C (°F)	300 (572)

[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 (standard test specimens)
[5] ASTM D395B & D1414 (AS568 K214 O-ring test specimens)
[6] DuPont proprietary test method

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