

DuPont™ Kalrez® 8575

For Semiconductor Oxidation, Diffusion, Lamp Anneal and RTP Applications

Technical Information – March, 2017

Product Description

DuPont™ Kalrez® 8575 perfluoroelastomer parts are a white product for oxidation, diffusion, lamp anneal and RTP sealing applications. Kalrez® 8575 exhibits excellent thermal stability and long-term sealing performance, less Infrared (IR) absorption and significantly reduced outgassing properties at elevated temperatures. It also has good mechanical properties and is well-suited for both static and low stress/low sealing force applications. A maximum application temperature of 300°C (572°F) is suggested. Ultrapure post-cleaning and packaging is standard for all 8575 parts.



Key Performance Features Contribute to Extended Seal Life

- White color reduces IR absorption and reduces seal temperature
- Very low outgassing properties
- Excellent (low) compression set properties
- Excellent elastic recovery properties

Suggested Applications

- Chamber lids
- Gas inlets
- Quartz windows
- Throttle valves
- Other plasma applications

Typical Physical Properties¹

Color	White
Hardness, Shore A (pellet) ²	63
Hardness, Shore M (O-ring) ³	74
100% Modulus ⁴ , MPa (psi)	2.99 (434)
Tensile Strength at Break ⁴ , MPa (psi)	14.53 (2107)
Elongation at Break ⁴ , %	220
Compression Set ⁵ , %, 70 hr. at 204 °C (400°F)	23
Max. Application Temperature ⁶ , °C (°F)	300 (572)

- ¹ Not to be used for specification purposes
- ² ASTM D2240 (pellet test specimens)
- ³ ASTM D2240 and ASTM D1414 (AS568 K214 O-ring test specimens)
- ⁴ ASTM D412 test method (dumbbell test specimens)
- ⁵ ASTM D395B (pellet test specimens)
- ⁶ DuPont proprietary test method



Seal Force Retention/Compression Set

Figure 1. Seal Force Retention 200°C (400°F)*

*ISO 3384, Method A, (AS568 K214-O-ring specimen)

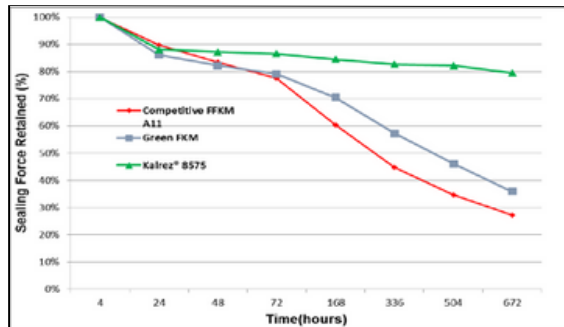
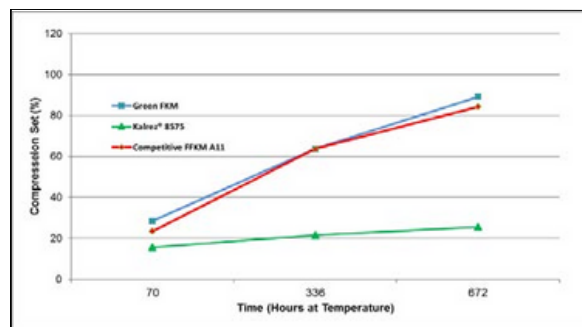


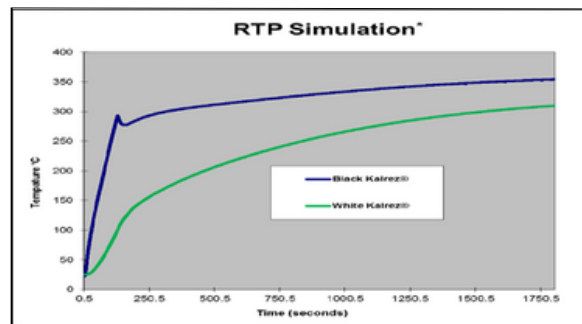
Figure 2. Compression Set at 200°C (400°F)*

*ASTM D395B 214 O-ring



IR Absorption vs. Seal Temperature

In RTP processes, IR light is used to heat the wafer. The amount of IR light absorbed by the seal is influenced by color. White seals like Kalrez® 8575 will absorb less IR light than black seals. As a result, the effects of thermal aging on white seals will be reduced throughout the life of the seal.



*DuPont proprietary test method

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