



# DuPont™ Kalrez® AeroSeal™ 7800

## Perfluoroelastomer Parts

### Technical Information - Preliminary Product Datasheet

#### Product Description

DuPont™ Kalrez® AeroSeal™ 7800\* perfluoroelastomer parts are a specialty black product that meets the requirements of Aerospace Material Specification (AMS) 7257. It offers outstanding thermal stability and compression set resistance along with excellent seal force retention properties. It also offers excellent resistance to High Thermo-Oxidative Stability (HTS) gas turbine engine lubricating oils and has excellent response to temperature cycling effects.

In some high temperature aerospace applications, fluoroelastomers and perfluoroelastomers can cause corrosion in the stainless steel and titanium O-ring grooves. In DuPont tests, Kalrez® AeroSeal™ 7800 parts minimized the corrosion of the titanium and stainless steel versus a typical high temperature perfluoroelastomer seal. (Figure 1)

Kalrez® AeroSeal™ 7800 parts have good mechanical properties and are well suited for both static and dynamic sealing applications. A maximum temperature of 325°C (617°F) is suggested. Short excursions to higher temperatures may also be possible. For additional test data, please contact DuPont.

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#### Typical Physical Properties <sup>1</sup>

Color	Black
Hardness, Shore A <sup>2</sup>	75
100% Modulus <sup>3</sup> , MPa (psi)	11.3 (1642)
Tensile Strength at Break <sup>3</sup> , MPa (psi)	20.1 (2928)
Elongation at Break <sup>3</sup> , %	150
Compression Set <sup>4</sup> , 70 hrs. at 204, °C (400 °F), %	20
Compression Set <sup>4</sup> , 70 hrs. at 300, °C (572 °F), %	52
Maximum Service Temperature <sup>5</sup> , °C (°F)	325 (617)
Temperature of Retraction (TR-10) <sup>6</sup> , °C (°F)	-3 (27)

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<sup>1</sup>Not to be used for specification purposes

<sup>2</sup>ASTM D2240 (Test pellet test specimens)

<sup>3</sup>ASTM D412/D1414 (AS568 K214 O-ring test specimens)

<sup>4</sup>ASTM D395B/D1414 (AS568 K214 O-ring test specimens)

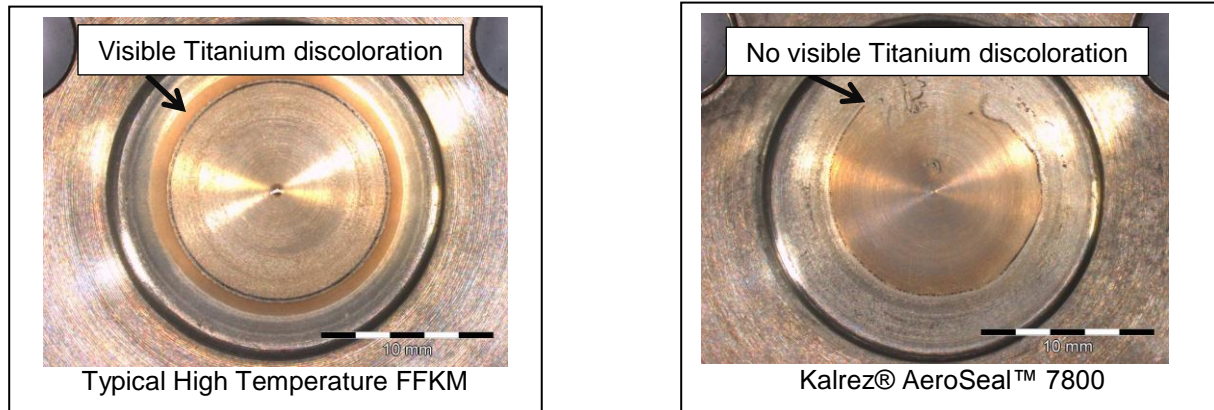
<sup>5</sup>DuPont proprietary test method

<sup>6</sup>ASTM D1329 (Test slabs as specimen)

#### Performance Features/Benefits

- Outstanding thermal stability and compression set resistance
- Excellent seal force retention properties
- Excellent resistance to high thermo-oxidative stability (HTS) gas turbine engine lubricating oils
- Excellent response to temperature cycling effects
- Excellent mechanical properties
- Low corrosion on metals after exposure to high temperature

Figure 1. Comparison test between typical high temperature perfluoroelastomer (FFKM) vs. Kalrez® AeroSeal™ 7800<sup>1</sup>



The groove made of Titanium using the Kalrez® AeroSeal™ 7800 O-ring did not exhibit metal corrosion or discoloration versus a typical high temperature FFKM.

<sup>1</sup>Test Protocol for Comparison Test:

- Groove made of Titanium
- Counterpart made of Stainless Steel 316L
- O-ring was dipped in to Air BPTO 2197 before assembly
- Test temperature: 250°C
- Test duration: 1000 Hours

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