Kalrez® perfluoroelastomer parts
From DuPont Performance Elastomers

Kalrez® 7075UP

Product Description

Kalrez® 7075UP is a black product targeted specifically for semiconductor oxidation, diffusion furnace and LPCVD thermal applications. It offers outstanding thermal stability, very low outgassing and excellent compression set properties. Kalrez® 7075UP exhibits excellent seal force retention, has good mechanical properties and is well suited for both static and dynamic sealing applications. A maximum continuous service temperature of 327°C is suggested. Short excursions to higher temperatures may also be possible. Ultrapure post-cleaning and packaging is standard for all parts made from Kalrez® 7075UP.

Performance Features/Benefits

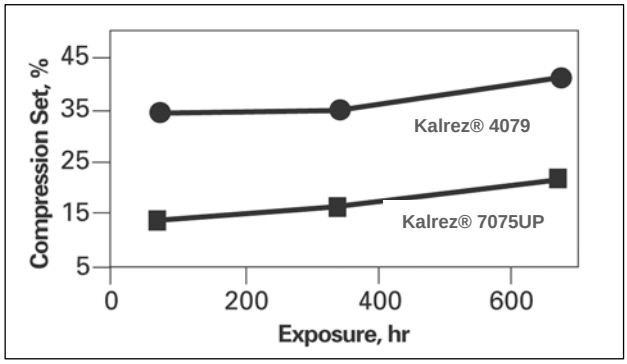
- Outstanding thermal stability
- Very low outgassing
- Excellent (low) compression set properties
- Excellent seal force retention properties
- Excellent response to temperature cycling effects

Typical Physical Properties[1]	
Color	Black
Hardness, Shore A (pellet)[2]	75
Hardness, Shore A (O-ring)[3]	83
100% Modulus[4], MPa	7.58
Tensile Strength at Break[4], MPa	17.91
Elongation at Break[4], %	160
Compression Set[5], %	
70 hr at 204°C	15
70 hr at 300°C	19
70 hr at 325°C	34
Max. Continuous Service Temperature[6], °C	327

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

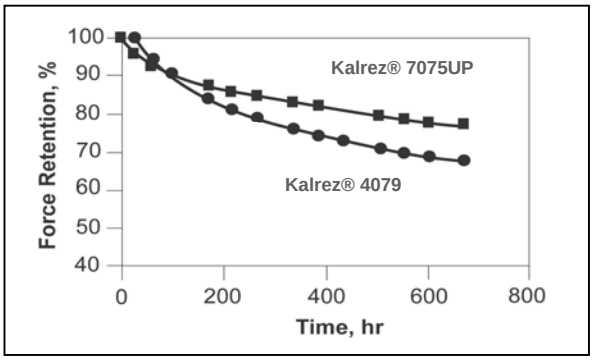
Compression Set/Seal Force Retention

Figure 1. Compression Set at 204°C*



*ASTM D395B 214 O-ring

Figure 2. Seal Force Retention at 200°C*

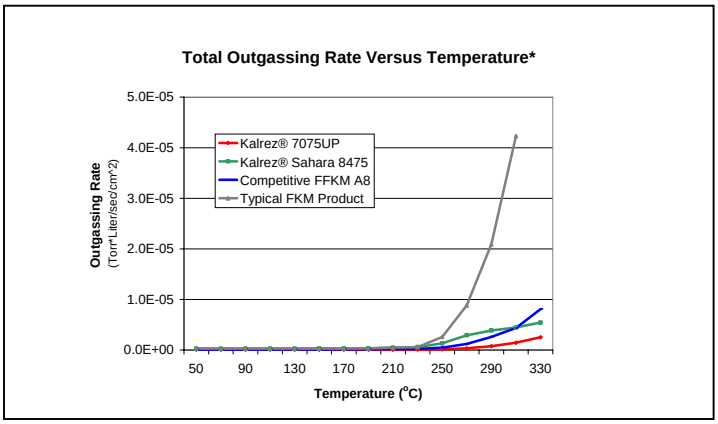


* ISO 3384, Method A, (AS568 K214-O-ring specimens)

Outgassing

High heat and temperature spikes can degrade elastomeric seals causing their crosslinking structure to become irreversibly damaged. In addition elastomeric seals can degrade under high temperatures causing outgassing to occur, thereby contaminating the process environment. The result is unscheduled downtime, or even worse, product loss. Figure 3 shows the outgassing properties of Kalrez® 7075UP versus Kalrez® Sahara 8475, Competitive FFKM D8 and a typical FKM product. Kalrez® 7075UP exhibited the lowest total outgassing rate.

Figure 3. Total Outgassing Rate versus Temperature



*DuPont Performance Elastomers Proprietary Test Method using AS568 K214 O-ring test specimens

For further information please contact one of the offices below, or visit our website at
www.dupontelastomers.com/kalrez

Global Headquarters — Wilmington, DE USA
Tel. +1-800-853-5515
+1-302-792-4000
Fax +1-302-792-4450

European Headquarters - Geneva
Tel. +41-22-717-4000
Fax +41-22-717-4001

South & Central America Headquarters — Brazil
Tel. +55-11-4166-8978
Fax +55-11-4166-8989

Asia Pacific Headquarters - Singapore
Tel. +65-6275-9383
Fax +65-6275-9395

Japan Headquarters – Tokyo
Tel. +81-3-6402-6300
Fax +81-3-6402-6301

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