



Kalrez[®] perfluoroelastomer parts

A Product of DuPont Dow Elastomers

Kalrez[®] Sahara[™] 8475

Compound Description

This white perfluoroelastomer material is rated for maximum continuous service at 300°C. It was specifically developed to meet the challenging performance requirements associated with sealing applications in semiconductor “thermal” processes (i.e., diffusion furnaces, LPCVD, RTP, lamp anneal, etc.). This product has significantly reduced outgassing and better compression set resistance compared to other high temperature sealing materials, including Kalrez 4079.

Typical Physical Properties¹

Property	Unit of Measure	Typical Value
Durometer/Hardness ²	Shore A	72
100 % Modulus ³	psi/Mpa	320/2.2
Tensile Strength at Break ³	psi/Mpa	1650/11.4
Elongation at Break ³	%	225

¹ Not to be used for specification purposes

² ASTM D 2240, D1414 (214 O-rings)

³ ASTM D 412, (dumbell specimens @ 20 in/min)

Product Features Contribute to Extended Seal Life

- Very low outgassing
- Excellent resistance to “dry” gas process environments
- White color reduces IR absorption and reduces seal temperature
- Improved (lower) compression set
- Excellent long-term seal force retention

Suggested Applications

Kalrez Sahara 8475 is an excellent choice for:

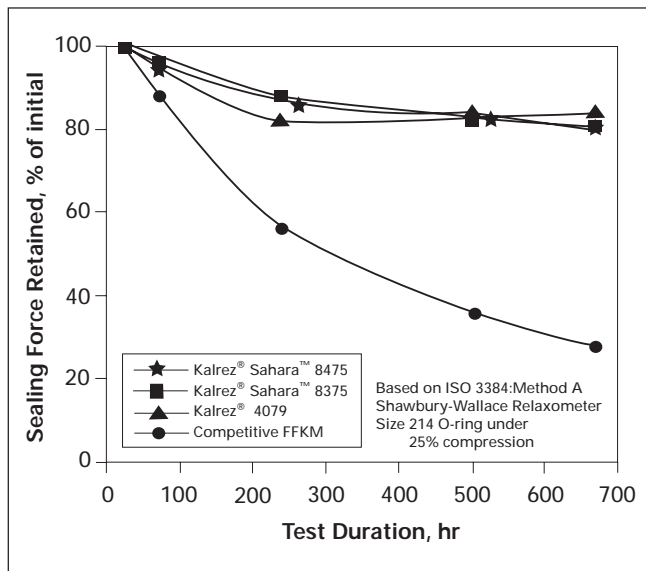
- Quartz tube seals
- Ball joint seals
- Gas feedthrough seals
- Bell jar seals
- Plenum seals
- Other thermal applications

Kalrez[®] Sahara[™] 8475—Minimal Outgassing at Elevated Service Temperatures TG-MS Outgassing Analysis* (Room Temperature to 400°C at 10°C/min)

Gas Evolved	R.T. to 100°C (ppm)	R.T. to 200°C (ppm)	R.T. to 300°C (ppm)	R.T. to 400°C (ppm)
H ₂ O	2	255	324	345
HF+	0	0	0	1
CF+	0	0	0	12
CO ₂	0	0	2	103
CF ₂	0	0	0	19
CHF+	0	0	0	20
CF ₃ +	0	0	0	119
C ₂ F ₃ +	0	0	0	23
CF ₃ O+	0	0	0	0
C ₂ F ₄ +	0	0	0	9
C ₂ F ₅ +	0	0	0	1
C ₃ F ₅ +	0	0	0	31
Total Outgas, %	0.00	0.03	0.03	0.07
Weight Loss, %	0.00	0.00	0.01	0.07

* Data provided by independent testing laboratory.

Typical Long-Term Seal Force Retention at 204°C



Typical O-ring Compression Set Performance (70 hrs data)*

Material Tested	% C/S at 204°C	% C/S at 250°C	% C/S at 300°C
Kalrez® Sahara™ 8475	23	30	45
Kalrez® Sahara™ 8375	25	30	50
Kalrez® 4079	37	41	45
Competitive Perfluoroelastomer	43	100	Sample Failed

* ASTM D 395B & D 1414 (214 O-rings)

For more information on Kalrez® or other elastomers:

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