



EKK Eagle Semicon Components, Inc

The Case Study

300mm Producer® O-ring PM Improvement

The Challenge

The customer was looking to improving their time between PM's. They were using Kalrez® 8085 and realizing approximately 9 months before seal particle count and leak rates required a PM. The incumbent materials performance diminished as the customers processes evolved and became more aggressive.

The Solution

We provided our Superior® 508 Material. Superior®508 was specifically developed for high temperature applications. Superior® 508 offers excellent plasma resistance and minimum particulation in a wide range of plasma environments. It also offers very low trace element contamination in both wet and plasma applications. We provided test parts for all three of their processes; BPSG/SACVD/PECVD.

Typical Physical Properties

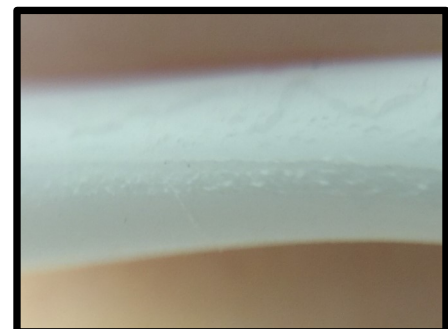
Color	White
Hardness, Shore A	75
Tensile Strength, psi (MPa)	2277 (15.7)
Elongation	246%
Modulus at 100% Elongation, psi (MPa)	711 (4.9)
Compression Set:	70 hrs. at 275°C 18%
Service Temperature Range, °C (°F)	-6 to 325 (21 to 617)



Qty	Size
6	2-281
2	2-271
19	2-111
1	2-113
2	2-119
4	2-120
8	2-123
2	2-126
4	2-233
2	2-387
6	NW16 2-314
4	NW25 2-320
1	NW100 2-346
4	NW80 2-340
2	NW40 2-326
2	Vac Heater internal (Mickey Mouse) 3700-01823
2	2.112 x 0.103 Vac Heater Vac Port (2-138)
2	2-138

The Results

The Superior®508 material was qualified on BPSG/SACVD/PECVD process after one year (40K wafers) of testing and still running the chamber o-rings. The -123CD508 RPS mount o-ring was returned for analysis since this is one the most aggressive locations and the o-ring held up good. The final compression % of these o-rings was 15% or less. The BPSG set of orings ran over two years far exceeding their expectations. The SACVD ran over one year and the tool technicians tell us they prefer Superior®508 over all other material.



Kalrez® is a registered trademark of Dupont. Producer® is a registered trademark of Applied Material.