



EKK Eagle Semicon Components, Inc

## The Case Study

200mm CENTURA® ULTIMA HDP-CVD® RPS Mount

### The Challenge

The customer was interested in finding a replacement compound for their RPS mount orings. They were using Chemraz® 513 and as their processes changed the 513 wouldn't make the 30K wafer target so the PM had to be reduced to 20K. The incumbent materials performance diminished as the customers processes evolved and became more aggressive.

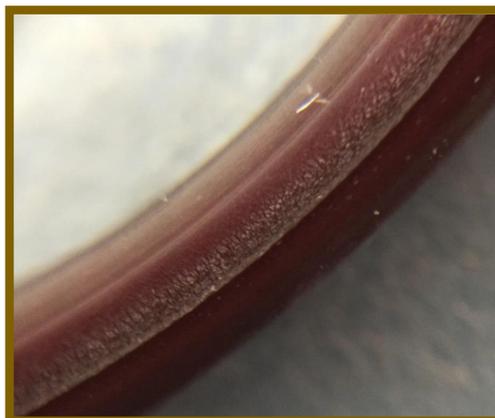


### The Solution

We provided our Superior® 298 Material. Superior® 298 is specifically designed as a exceptionally clean unfilled FFKM for high temperature plasma applications and has excellent chemical compatibility in wet environments. This qualification was simple due to the fact it only required two AS568-127 size o-rings. This is the most critical seal of the center nozzle assembly.

### The Results

The Superior®298 material was qualified after 35,359 wafers. The -127CD298 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 compressed % of these o-rings was 10% or less. The qualification of this oring qualifies the entire center e assembly kit and the engineer has agreed to test the Cathode kit on the same tool. The final result of this process test is moderate etching of the o-ring and maintained compression sealing force to meet the PM with potential of extending the PM. EKKSC 298 FFKM is an excellent material choice for this HDP-CVD application with the added value of being an unfilled ultra clean material with high performance physical properties and plasma resistance.



Physical Properties	Simriz 298
Material Type	FFKM - Unfilled
Color	Violet
Hardness, Duro-A	67
Tensile Strength, Mpa	16.9
100% Modulus. Mpa	3.4
Ultimate Elongation, %	214
Compression Set, 70 hrs @ 200° C	16.3
Compression Set, 70 hrs @ 250° C	13.1
Compression Set, 70 hrs @ 275° C	17.8
Compression Set, 70 hrs @ 300° C	10.3
Total OutGassing, 250° C, ppm	3.7
Plasma Weight Loss. %, 1800W ICP, 20 hrs, 0.15 Torr, O2	0.39

Chemraz® is a registered trademark of Greene Tweed. CENTURA® ULTIMA HDP-CVD® is a registered trademark of Applied Materials