

Parofluor MICRO V8712-75

No. 5118B1-USA

Perfluoroelastomer with nano-filler technology offers maximum plasma resistance and ultra high purity for bonded applications.

Parofluor MICRO V8712-75 is **the** next generation nano-filled perfluoroelastomer, increasing seal performance throughout the 200/300 mm platform and beyond.

Energized by innovative pseudo-living polymerization systems, V8712-75 maximizes value and wafer yield within the fab thru exceptional mechanical properties with minimal particulation.

Applications

The purity, thermal stability and broad chemical resistance of V8712-75 make it ideal for use in plasma and gas deposition processes common to semiconductor fabrication. While it can be manufactured into seals of virtually any shape and size, V8712-75 is recommended for:

- UHP Slit Valve Doors™ - Consisting of a custom-engineered ultra-high purity sealing element chemically bonded to an aluminum or stainless steel door
- UHP Gate Valve Doors™ - Similar in construction to the Slit Valve Door, this product is designed to serve as original equipment and/or as a replacement for gate doors that have reached their service limit
- Chamber seals and other composite sealing configurations

V8712-75 exhibits outstanding sealing properties in both static and dynamic applications.

Features and Benefits

- Nano-filler technology
- Ultra-low metal ion content
- Maximum plasma resistance
- Minimal particulation
- Ultra-high purity, very low outgassing
- Minimal weight loss
- Excellent thermal stability
- Outstanding compression set resistance



Parofluor V8712-75 is formulated for use in bonded seal configurations such as the ultra-high purity UHP Gate Valve and Slit Valve Door.

Figure 1. Typical Physical Properties of V8712-75

| Property | Typical Results |
|--|-------------------|
| Color | Translucent Amber |
| Hardness, Shore A | 75 |
| Tensile strength, MPa (psi) | 8.9 (1297) |
| Elongation, % | 243 |
| Modulus at 100% elongation, MPa (psi) | 3.4 (494) |
| Compression set ¹ , 70 hours at 200°C at 25% deflection | 12.5 |
| Temperature range | -15°C to 250°C |

¹ASTM D395 Method B, 2-214 size o-rings.

Parofluor MICRO V8712-75, Continued ...

Figure 2.

Recommended process applications for V8712-75:

| | Process Type | Requirements |
|-------------------------|--------------------------|---|
| Plasma & Gas Deposition | Etching | Fluorine/Chlorine/O ₂ |
| | Ashing | O ₂ /O ₃ /H ₂ O |
| | HDPCVD/ PECVD/ CVD | TEOS/O ₃ , SiH ₄ /O ₂ , NF ₃ /C ₂ F ₆ /CF ₄ |
| | PVD | Ar, High Vacuum |
| | Metal CVD | TEOS/O ₃ , SiH ₄ /O ₂ , NF ₃ /C ₂ F ₆ /CF ₄ , WF ₆ /ClF ₃ |
| | Copper | TEOS/O ₃ , SiH ₄ /O ₂ , NF ₃ /C ₂ F ₆ /CF ₄ , WF ₆ /ClF ₃ |
| | ALD | O ₂ /O ₃ /H ₂ O, NF ₃ /CF ₄ , ClF ₃ |
| Thermal | Oxidation/ Diffusion | N ₂ /O ₂ /H ₂ O |
| | LPCVD | NH ₃ |
| | RTP | IR Resistance, Low Outgassing, Thermal Stability |

Semiconductor Sealing Solutions

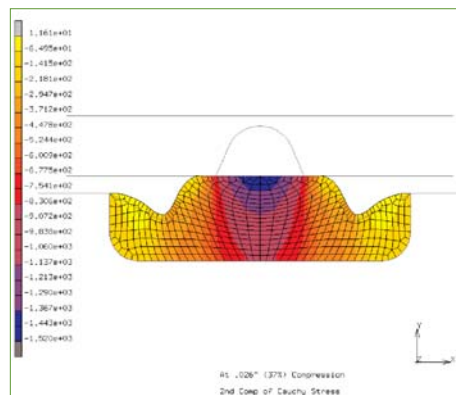
Parker Hannifin supports the semiconductor manufacturing industry with a wide range of engineered sealing products and systems, including end effectors, contact rings, flange seals and resilient metal seals. Our bonding technology can also be applied to high-performance thermoplastics for thrust plates and other applications.



Parker's selection of composite and metal sealing components and systems for the semiconductor processing industry.

More Than Manufacturing

Parker Hannifin is a leading supplier of bonded sealing products to the semiconductor manufacturing industry. In addition to an innovative line of sealing products, we have also developed a range of customer support tools, including a dedicated product/applications engineering staff, finite element analysis (FEA) assisted seal design, and inPHorm™, a seal design and material selection software package.



At Parker, FEA-assisted engineering and other state-of-the-art tools are employed to save customers time and money.



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