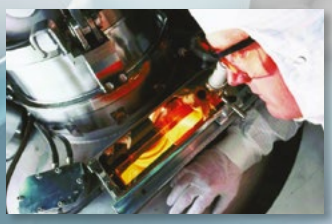
Isolast® PureFab® JPF44

EXTREME HEAT-RESISTANT PERFLUOROELASTOMER FOR RAPID THERMAL PROCESSING AND OXIDATION







Withstanding extreme thermal conditions to extend service life and increase purity in semiconductor applications where other perfluoroelastomers fail.

Isolast® PureFab® JPF44 is the most advanced thermal-grade perfluoroelastomer (FFKM) in the Isolast® PureFab® portfolio, developed for extremely high-temperature semiconductor applications.

With exceptional thermal endurance up to +325 °C/ +617 °F, it is engineered for use in process environments where conventional FFKM materials fail — such as prolonged high-temperature LPCVD, diffusion, oxidation and ALD chambers.

Isolast® PureFab® JPF44 offers industry-leading thermal stability, ultra-low outgassing and best-in-class elastic recovery, making it the preferred choice for high-purity static and dynamic seals operating under continuous thermal stress.

ISOLAST® PUREFAB®

The Isolast® PureFab® range is a dedicated portfolio of FFKM materials engineered for the most demanding semiconductor environments. Each grade is carefully optimized for specific application requirements, considering process chemistry, system location and tool complexity — delivering exceptional high-purity sealing performance in plasma environments and under high-temperature conditions.

Features and Benefits

- Extreme high-temperature resistance, outperforming conventional FFKMs in continuous service temperatures up to +325 °C/+617 °F
- Exceptional thermal and mechanical properties maintain seal integrity and dimensional stability under prolonged heat exposure
- Lowest levels of outgassing for high-vacuum thermal environments and contamination-sensitive processing tools
- Superior compression set retains sealing force and long-term reliability in both static and dynamic conditions
- Resists cracking and temperature cycling, withstanding thermal fatigue and mechanical stress

Application Examples

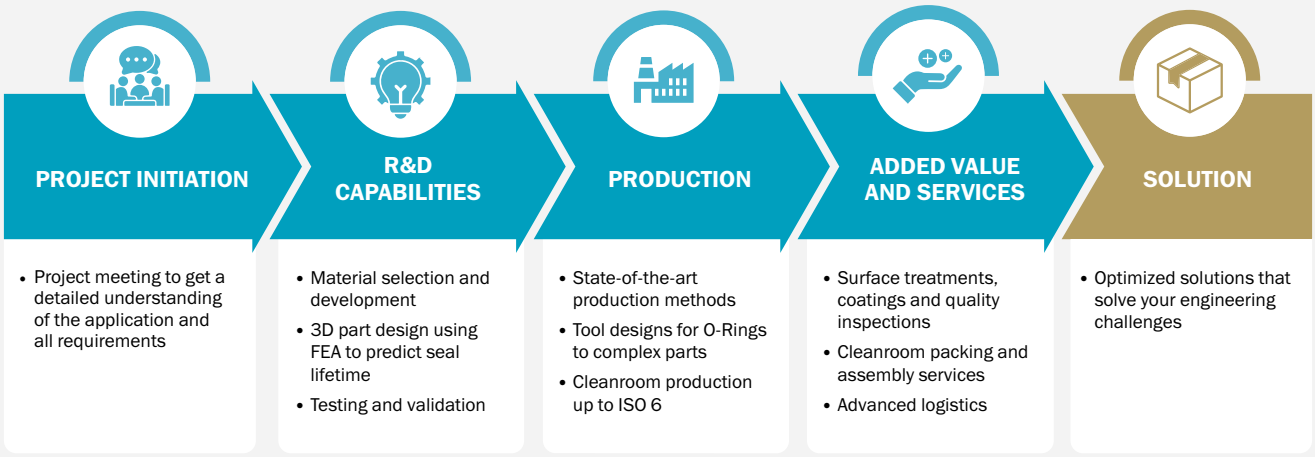
- High temperature processes including RTP, ALD and LPCVD
- Diffusion and oxidation furnace gaskets
- Quartz tube, plenum, and flange seals
- High-temp rotating shaft or bell jar seals
- Ultra-clean static seals in furnace and annealing systems

ISOLAST® PUREFAB® JPF44

General Data	Isolast® PureFab® JPF44
Elastomer Type	FFKM
Color	Black

Properties	Test Method	Results
Hardness (Shore A)	ASTM D2240	75
Tensile Strength (MPa)	ISO 37	19.3
Elongation at Break (%)	ISO 37	185
Modulus 100% (MPa)	ISO 37	10.1
Compression Set (%)		
72h @ +200 °C/+392 °F		10
72h @ +250 °C/+482 °F	ISO 815	11
72h @ +300 °C/+572 °F		20
Continuous Service Temperature		-5 °C to +325 °C / +14 °F to +617 °F

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Partner with Trelleborg to benefit from local specialist support, global reach and dedicated regional semiconductor experts. These three pillars ensure best in class service levels, from design, prototyping and delivery through to serial production.

For more information and contact details visit: www.trelleborg.com/seals

The information in this publication is intended for general reference only and not for specific applications. Customers must satisfy themselves with the suitability of a product and material for their individual applications.

Color variations, including dark spots, are a normal result of the polymer curing process and do not indicate the presence of foreign matter or negatively impact performance, reliability or cleanliness.

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