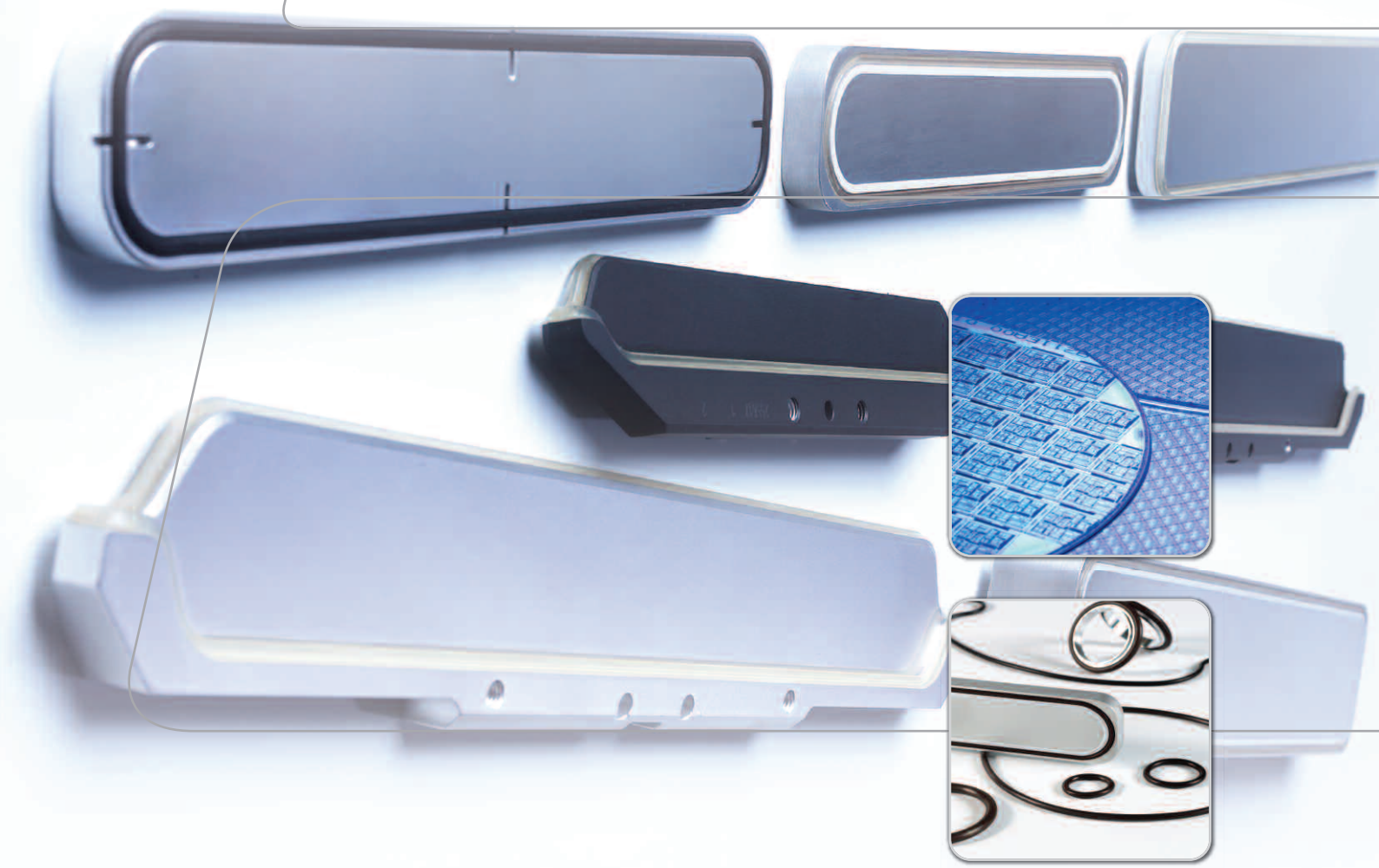
PPE

Precision Polymer Engineering

Advanced sealing solutions for critical applications

Slit Valve Doors For **Semiconductor Applications**



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Precision Polymer Engineering (PPE) provide Slit Valve Doors with high performance elastomers to the semiconductor market

Precision Polymer Engineering

Slit Valve Doors (SVDs) are a fundamental component of many semiconductor process tools. They form the barrier between aggressive process environments and the more benign areas of the equipment. PPE provides a range of Slit Valve Door designs coupled with an unparalleled range of elastomer materials developed specifically for aggressive semiconductor sealing applications.

Demands for ultra-high purity and plasma resistance have resulted in the development of the **Perlast**® and **Kimura**® range of elastomers for the semiconductor industry. These materials provide the ultimate in sealing solutions for Slit Valve Doors.

Advantages of PPE sealing solutions:

- **Exceptional purity**
- **Reduced particulation**
- **Low etch rates**
- **High temperature capability**
- **Extended seal life resulting in reduced cost of ownership**

Manufacturing Capabilities

Utilizing some of the most advanced manufacturing equipment in the world combined with the latest techniques, PPE's cleanroom production facilities provide the flexibility to deliver on time with the shortest lead-times in the sealing industry.

Why choose PPE Slit Valve Doors?

Ultra-pure elastomer seals

PPE offers a range of materials and profiles that maximize sealing integrity and life expectancy for bonded and non-bonded Slit Valve Doors.

PPE Slit Valve Doors maximize wafer yields and extend planned maintenance cycles by utilizing ultra-pure perfluoroelastomers that do not contain filler systems such as metal oxides and silicas that can cause particulation or contamination in dynamic door applications.

Figure 1 shows a cross section of an elastomer with inorganic fillers, whilst figure 2 shows a Kimura® non-filled elastomer that significantly reduces the potential for particulation.

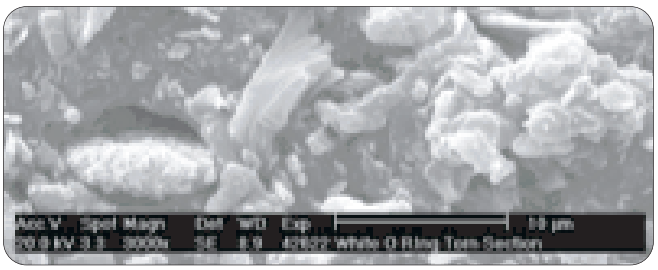


Figure 1: Inorganic filled elastomer material (magnification 10µm)

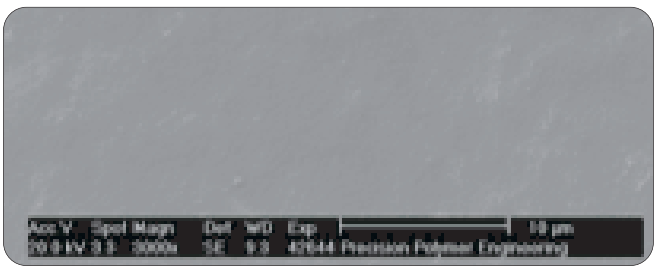
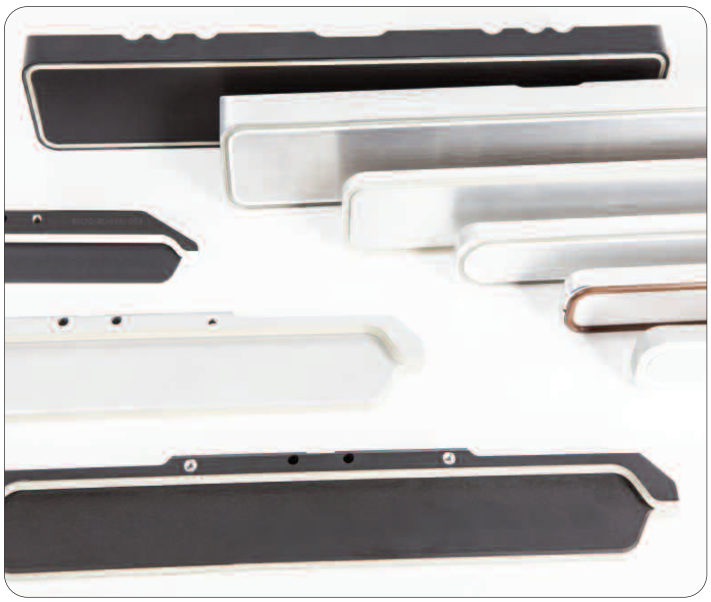


Figure 2: Kimura® non-filled elastomer material (magnification 10µm)



Quality and traceability

With in-house materials compounding and full control over batch manufacturing, PPE offers full batch traceability and the highest levels of quality control. Certified to ISO 9001 Rev. C as well as stringent Aerospace quality standards, quality is at the core of everything we do.

Technical Support

PPE's application engineering and material science teams are on-hand to provide advice on seal design optimization, material recommendations, testing and analysis services, troubleshooting and consultancy to identify the most appropriate and cost-effective sealing solution for any application.

Case Study

Perlast® G67P on MONOVAT® achieved x3 increase in wafer yield

A major semiconductor manufacturer in Asia was experiencing problems with contamination and poor wafer yield in a Low-K CVD process on a Producer® tool. The dynamic MONOVAT® gates were fitted with a traditional white FFKM material and the gates had to be replaced every 15,000-30,000 wafers. Since using MONOVAT® gates fitted with Perlast® G67P, this chip producer achieves over 90,000 wafers, which represents a considerable cost saving. This reflects the ultra-pure material composition, superior chemical resistance and outstanding mechanical properties of Perlast® materials.

MONOVAT® is a registered trade mark of VAT Vakuumventile AG

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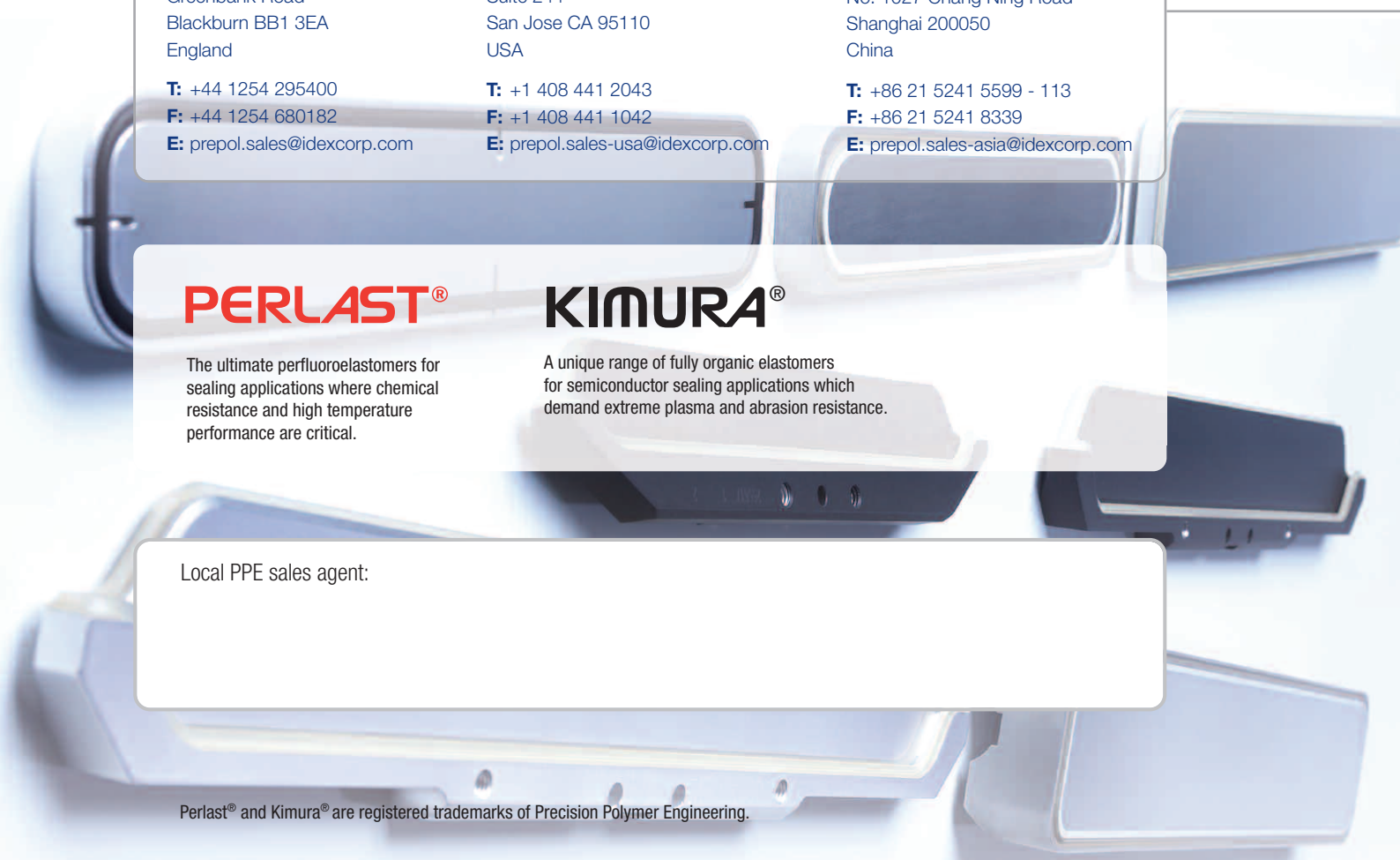

PERLAST®

The ultimate perfluoroelastomers for sealing applications where chemical resistance and high temperature performance are critical.

KIMURA®

A unique range of fully organic elastomers for semiconductor sealing applications which demand extreme plasma and abrasion resistance.

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SCAN

A Unit of IDEX SEALING SOLUTIONS

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