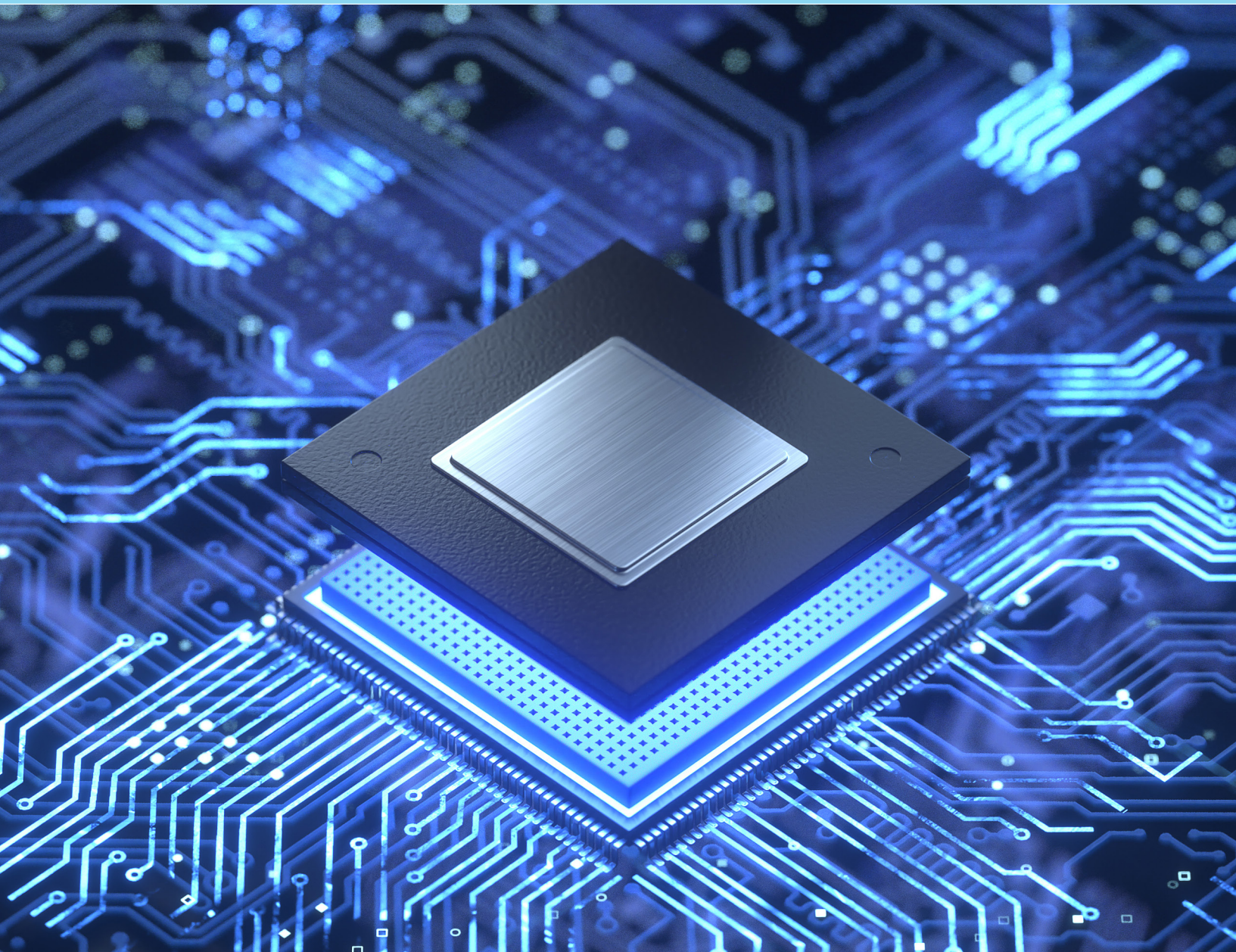


# Semiconductor



**Engineered sealing solutions**  
for Semiconductor applications



## Engineered Sealing Solutions

Application conditions within the semiconductor manufacturing processes are some of the harshest known in industry due to aggressive chemical media and elevated temperatures.

To satisfy the unique requirements of this sector we are a complete turnkey solutions provider. We support your applications from concept, design and material development through to manufacture and logistical handling.

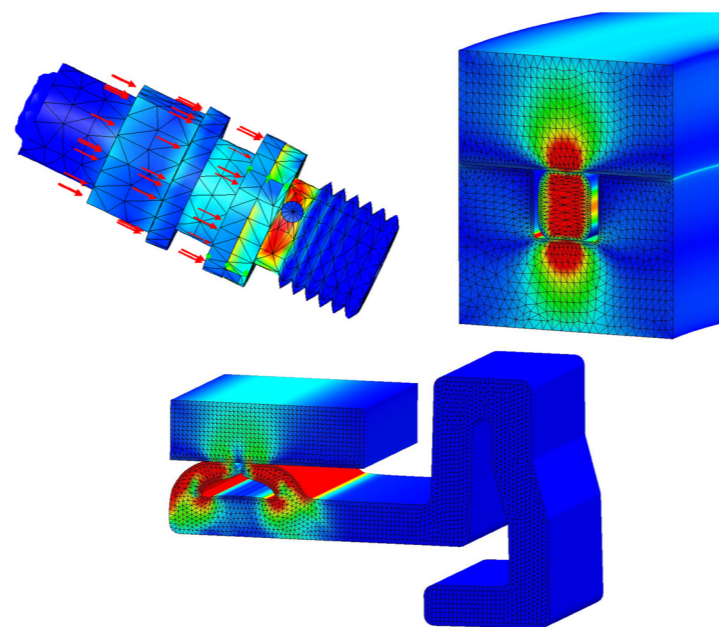
Designing and supplying seals into critical equipment means we have to meet the strictest demands in product integrity and meet the highest specifications of hygiene and cleanliness in production conditions.

## Design & Development

With a wide range of core products, we provide our customers with a reliable sealing solution; even in the most demanding of applications. We support your engineers with a complete seal design service from start to finish.

We provide design optimisation through Finite Element Analysis (FEA) simulation, housing design review, and mould flow analyses for finished products and demanding tolerance conditions.

Our materials engineers are also on-hand to develop and recommend compounds to meet the specific requirements of your application.



## Quality Assurance

We have a range of Ultra High Purity materials that are fully compliant with FDA, USP Class VI, ISO 10993, UHP, BAM and BfR standards.

We utilise a complete ISO 13485 accredited cleanroom production process; from material blank production through to inspection and packaging using controlled materials within state of the art cleanrooms.

We support our customers to identify and control critical seal features that enable reliable functionality. This is closely monitored as part of the production process.



## Application Conditions

We have a range of seal products suitable for applications within semiconductor processes including plasma, deposition, thermal and wet applications.

These processes present harsh plasma and gas environments, often at extreme temperatures.

- Dry/Wet Etch
- Plasma
- Chemical vapor deposition (CVD)
- Physical vapor deposition (PVD)
- Sub-Fab
- Wet Clean

Seals for wet cleaning are highly engineered for static, dynamic and bonded applications that require minimal metallic ion contaminations.



## Engineered Materials

Our range of specialist materials are suitable for the most aggressive chemical media including alkaline, acids, solvents and gases, and are often required to perform at extreme temperatures.

Seals manufactured in our range of specialist materials offer excellent chemical and thermal resistance and are virtually impervious to extreme fabrication processes.

We have a range of Ultra High Purity (UHP) elastomer compounds suitable for applications where minimal particle generation and outgassing (even at elevated temperatures) are critical.



## Specialist materials

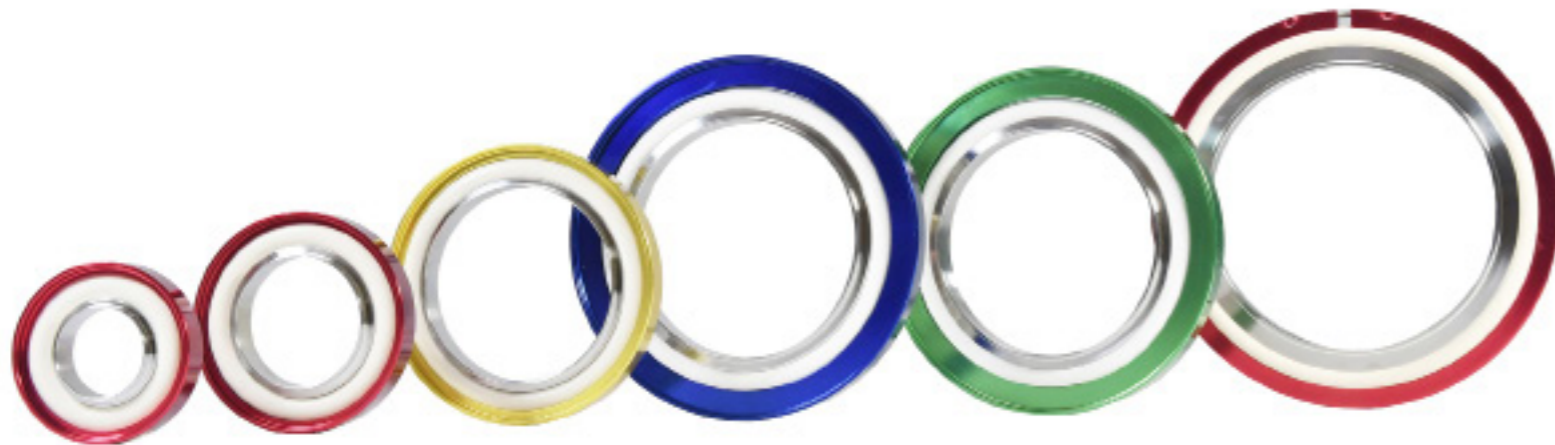
Material code	Material	Perfrez® reference	Shore Hardness	Temp range	Process									Colour	Features
					CVD	PVD	Plasma Etch	Wet Etch	Metal Etch	Ion implant	Diffusion & RTP	Annealing	Sub Fabs		
CZ78CK44	UHP FFKM	XL12	78	-20 to + 260°C	✓	✓	✓				✓	✓	✓	Beige	Low CTE
CZ85CK45	UHP FFKM	XL11	85	-20 to + 260°C	✓	✓	✓				✓	✓	✓	Beige	Low CTE & low outgassing
CZ75C391	FFKM	6022	80	-20 to + 280°C	✓	✓	✓				✓	✓	✓	Off-white	Sub-Fab applications. Foreline & Abatement.
CZ80C457	FFKM	6021	80	-30 to + 300°C	✓	✓	✓	✓			✓	✓	✓	Black	High temperature capability
CZ80C458	FFKM	6012	80	-20 to + 260°C	✓	✓	✓	✓			✓	✓	✓	White	Oxygen & fluorine compatibility
CZ77CK39	FFKM	6153D	77	-20 to + 310°C	✓	✓	✓		✓		✓			Brown	High temperature capability
CZ76CK48	FFKM	XHT	76	-20 to + 310°C	✓	✓	✓		✓		✓	✓		Grey	High temperature capability
CZ70CK49	FFKM	XT	70	-20 to +240°C	✓	✓	✓	✓	✓		✓	✓	✓	Black	Good chemical compatibility
CZ75CK50	FFKM	PXC	75	-10 to + 260°C				✓				✓	✓	Black	Broad chemical resistance
TFECK46	Hybrid TFE	5033	80	-25 to + 230°C	✓				✓	✓			✓	Beige	Low particle generation
V80CK47	PTFE Fill	5002	80	-20 to + 230°C	✓		✓		✓	✓			✓	White	Good plasma resistance

\*CTE - Coefficient of thermal expansion

## SMARTSeal Prism One Kit

Smart, simple solution for SubFab applications

- Materials to suit your application
- Clean room pre-assembled seal system
- Colour coded outer ring for easy identification
- Consistent quality, reliable performance
- Cost effective solution



## Bonded Gates & custom designs

In addition to high performance seals and O-rings we can offer bonded gate seals and custom seal designs for demanding applications.

Sealing materials made with Perfrez® are available for door seals, gate valves and pendulum valves.

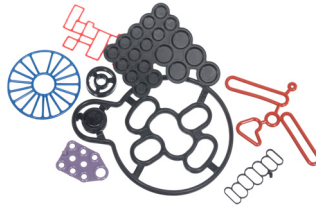


# Product overview



## O-Rings

Standard size ranges include; AS568, DIN 3771, ISO 3601 and JIS B2401. Customer sizes available on request.



## Moulded Seals & Gaskets

Available in virtually any range of shape and cross section. We design and manufacture engineered elastomeric shapes, both homogenous and inserted, for sealing systems and isolation applications.



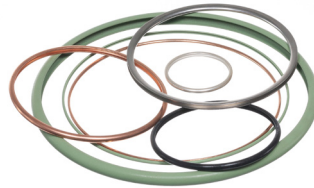
## Precision Elastomer Seals

Bio-compatible precision-elastomeric medical components manufactured in USP Class VI and ISO 10993 compliant materials.



## PTFE Seals

Our full line of spring-energised PTFE lip seals are used in rod, piston, face and rotary sealing applications.



## Metal Seals

Allows integration of several functional aspects to give cost, ease of assembly and product reliability advantages. Material combinations are optimised to meet application demands.



## Composite Seals

Rubber-to-metal or rubber-to-plastic custom engineered sealing solutions allow for the integration of multiple components with unique sealing geometries.

# Cleanroom capabilities



	FS209E	ISO14644
Production step	Clean room Class	
Vulcanisation	100 000	8
Deflashing	100 000	8
Washing and Cleaning	10 000	7
Inspection	10 000	7
Packaging & special inspection	100	5

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