

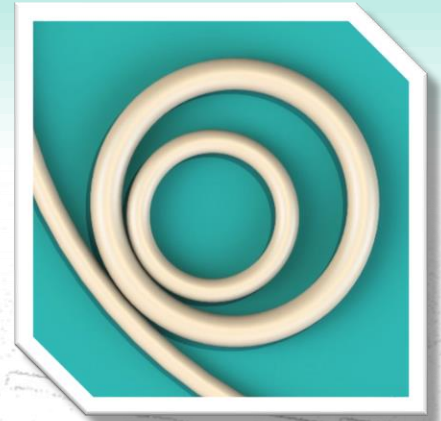
# ASNA PERFREZ® XL12

Excel chemical resistance and purity for semiconductor applications

Technical Data Sheet (Oct 2023)

## Purity solution for both static and dynamic applications

PERFREZ® XL12 features superior physical properties with exceptionally low particle generation. XL12 offers a low Coefficient of Thermal Expansion (CTE) that mitigates risk of extrusion, while offering outstanding plasma resistance and erosion, especially with aggressive fluorine based process.



## Features and Benefits

- Excellent oxygen and fluorine compatibilities
- Exceptional plasma resistance
- Superior physical properties and low CTE
- Low out-gassing
- Ultra-low particle

## Compatible Semiconductor Process

- ✓ Deposition: CVD, APCVD, HDPCVD, RPCVD, SACVD
- ✓ Plasma Etch: oxide and metal
- ✓ Ashing
- ✓ Ion Implant
- ✓ Etch

## Applications:

- ✓ Chamber Lid Seals
- ✓ Door Seals
- ✓ End Point Windows
- ✓ Gas Inlet Seals
- ✓ Isolator Valve Seals
- ✓ KF-Fittings
- ✓ Slit Valves
- ✓ Window Seals

## Typical Physical Properties<sup>1</sup>

Color <sup>2</sup>	Light Beige
Hardness, (Shore A)	78 (+/-5)
Elongation at break <sup>3</sup> , %	200
Tensile Strength, psi(MPa)	2474(17.06)
Modulus @100%, psi(MPa)	985(6.79)
Coefficient of Thermal Expansion, /°C	2.61x10 <sup>-4</sup>
Min. Operating Temperature, °C(°F)	-20(-4)
Max. Operating Temperature, °C(°F)	260(500)

<sup>1</sup>Not to be used for specification purposes

<sup>2</sup>Color variations may be observed in actual product. They are considered to be cosmetic and inherent as a result of curing process, not indicative for foreign matter and is not expected to have an adverse effect on the performance of the part in service.

<sup>3</sup>Even though elongation property is indicated, most perfluoroelastomer materials should not be stretched for optimal performance.

## Applied Seals NA, Inc.

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## CASE STUDY: Outperforms incumbent seal in various locations

**Process:** PECVD

**Temperature:** <150°C

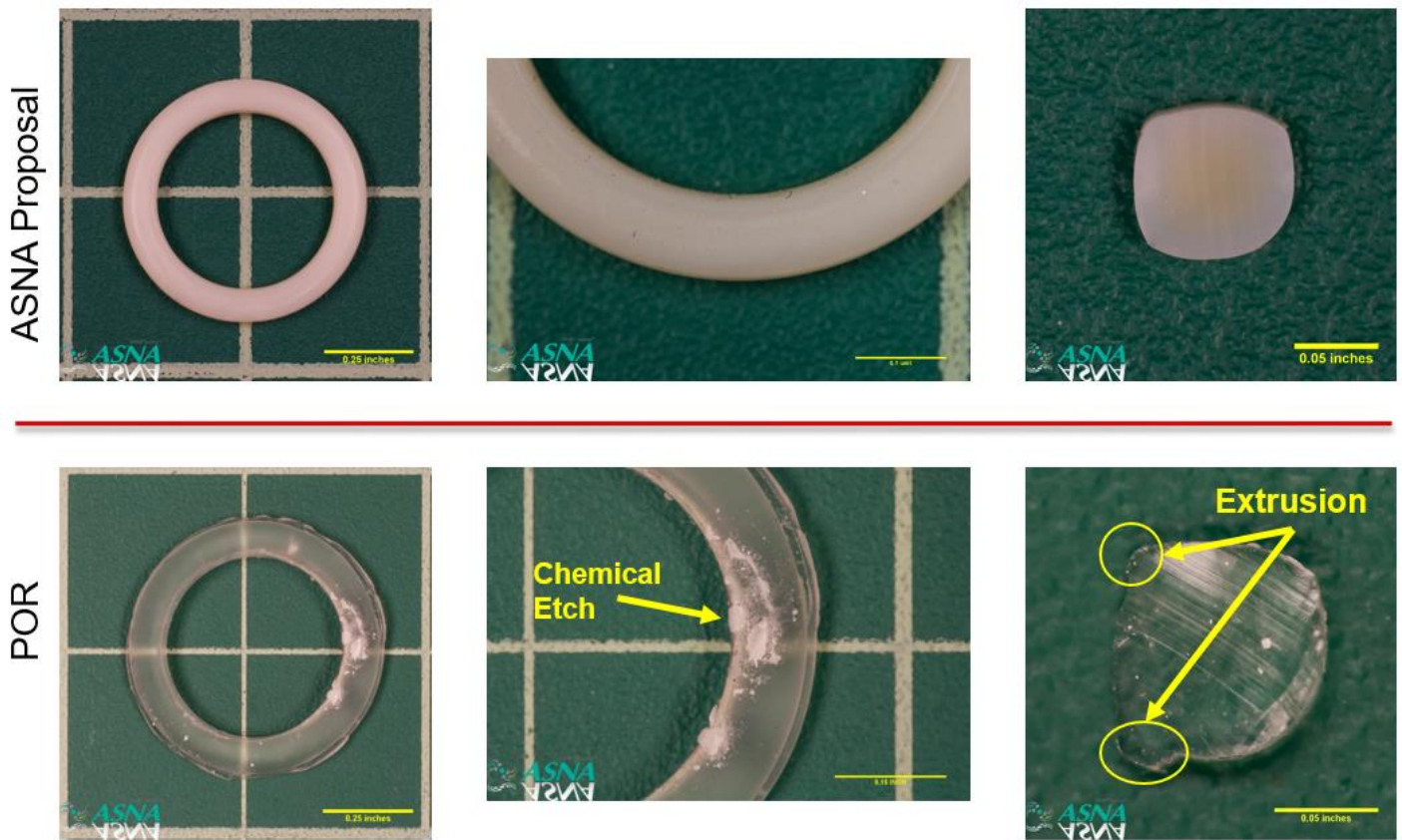
**Chemistry:** Monatomic Fluorine

**Current life:** Various

**Desired life:** 3 months to 1 year depending on the user.

- Current seal materials tested at OEM showed variability and reduced sealing life.
- PERFREZ® XL12 exceeded sealing life expectations and exhibited compatibility with harsh process environment including Monoatomic Fluorine.

### Comparison between ASNA proposal and POR seal



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