

ASNA PERFREZ® 5033

Special hybrid with high-grade cleanliness and chemical compatibility

Technical Data Sheet (Jul 2019)

Ideal and economic solution for better performance

PERFREZ® 5033 solves the problem where an FKM (known as Viton™ in all their many mixes and grades) cannot handle the process chemistries but a FFKM (perfluoroelastomer) is an overkill.

Features and Benefits

- Best in class of materials
- Nano-composition/special TFE filler
- Superior physical properties
- Higher temperature capabilities
- Low out-gassing
- Low particle generation



Compatible Semiconductor Process

- ✓ Various CVD
- ✓ Poly Etch
- ✓ Metal Etch
- ✓ Ion Implant
- ✓ MEMS
- ✓ LCD
- ✓ Solar

Applications:

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

Typical Physical Properties¹

Color ²	Beige
Hardness, (Shore A)	80 (+/-5)
Elongation at break ³ , %	268
Tensile Strength, psi(MPa)	2263(15.6)
Modulus @100%, psi(MPa)	943(6.5)
Coefficient of Thermal Expansion	2.31x10 ⁻⁴
Min. Operating Temperature, °C(°F)	-25(-13)
Max. Operating Temperature, °C(°F)	230(446)

¹Not to be used for specification purposes

²Color 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.

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

⁴ASTM D395-03, Method B

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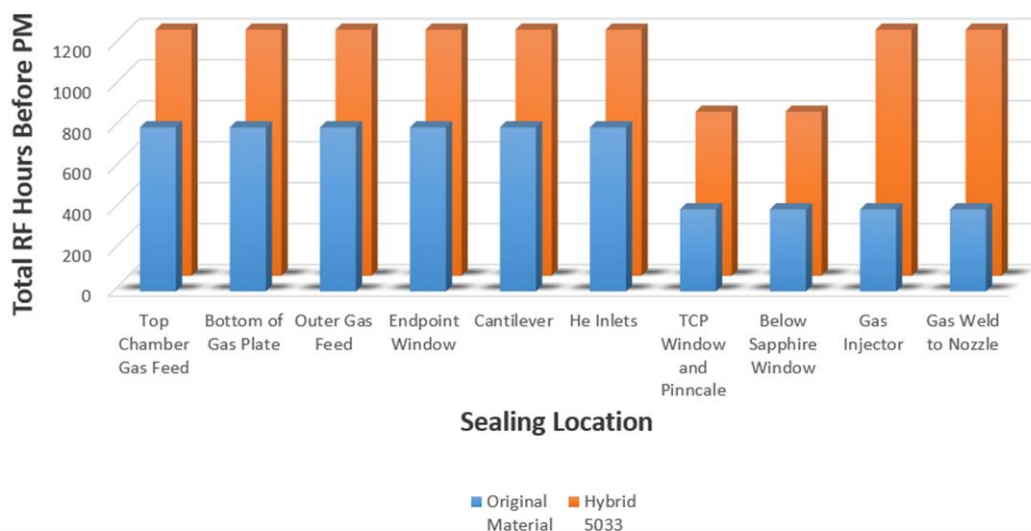


In advance technologies where killer defects are becoming a substantial issue, FKM's can produce particles that are caused from the use of industrial grade materials that are not clean room quality. This "special hybrid" offers the answer to production that requires longer sealing life, longer PM cycles, and confidence such materials can offer without harsh cost implications. Even more, our specialty materials are compounded in such a way that produces best capabilities with highest chemical resistance possible. Nano-composition and improvements in manufacturing as well as clean-room steps make 5033 most ultimate, highest-grade of its class along with strong physical properties.

CASE STUDY: Outperforms incumbent seals in various locations

Description	Description
O-RING, HYBRID ID 21.300" CSD 0.139"	Top Chamber
O-RING, HYBRID ID 0.296" CSD 0.143"	Inner Gas Feed
O-RING, HYBRID ID 21.171" CSD 0.142"	Bottom of gas plate/Top of Housing
O-RING, HYBRID ID 1.046" CSD 0.139"	Outer Gas Feed
O-RING, HYBRID ID 1.698" CSD 0.142"	Endpoint Window
O-RING, HYBRID ID 15.879" CSD 0.142"	Cantilever
O-RING, HYBRID ID 0.671" CSD 0.139"	He Inlets
O-RING, HYBRID ID 1.237" CSD 0.103"	Endpoint window
O-RING, HYBRID ID 17.955" CSD 0.139" W/Tail	TCP Window and Pinnacle
O-RING, HYBRID ID 0.671" CSD 0.139"	Below Sapphire Window
O-RING, HYBRID ID 1.049" CSD 0.095"	Window Injector Gasket
O-RING, HYBRID ID 1.049" CSD 0.103"	Gas Injector
O-RING, HYBRID ID 0.609" CSD 0.139"	Gas Weld to Nozzle

PERFREZ® 5033 Seal Performance vs. Incumbent Material



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