

Chemraz® G20

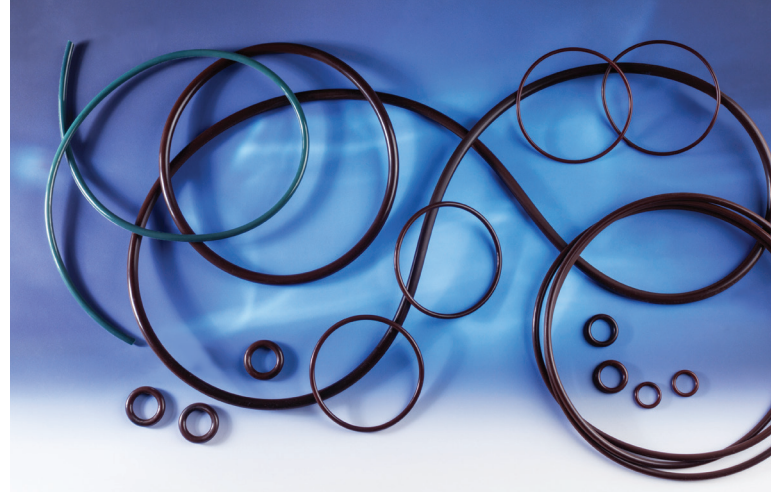
Unequaled Cleanliness and Unmatched Performance

Chemraz® G20 is a best-in-class, plasma-resistant material for use in all processes used in DRAM, NAND, and Logic IC manufacturing down to 7 nm and beyond.

Chemraz® G20 provides vacuum seals for static applications in the chamber, typically used in o-rings.

Product Performance

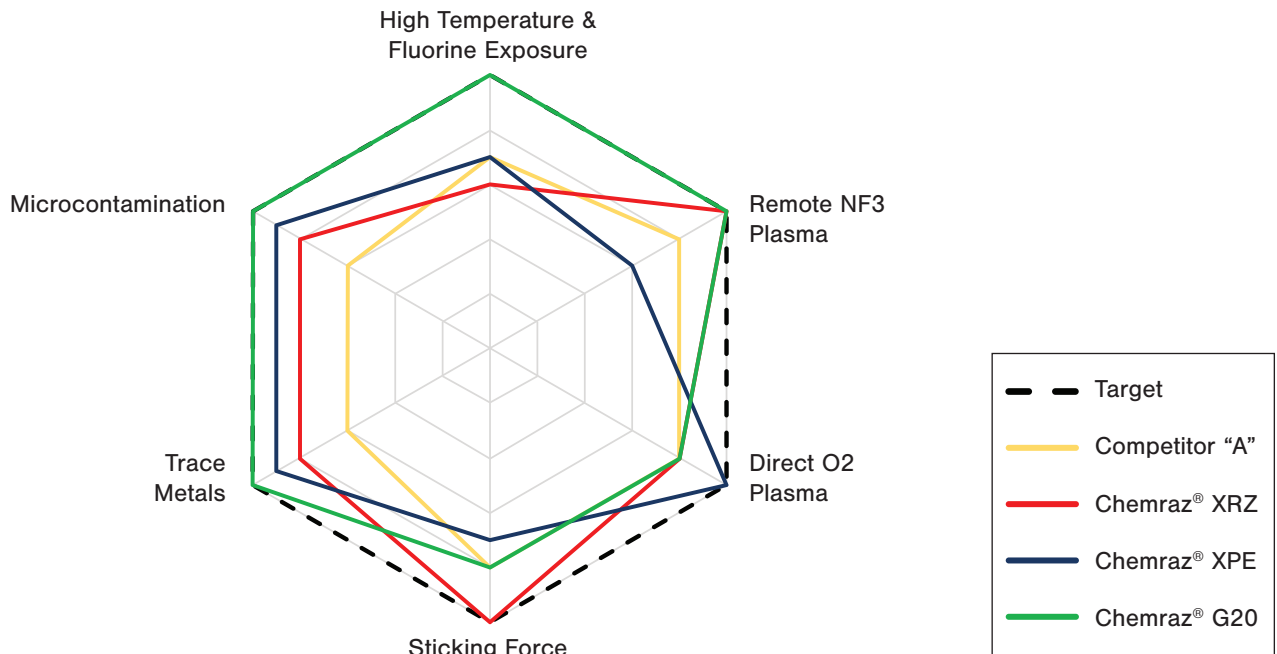
- Superior fluorine resistance at high temperatures
- Higher plasma resistance – Etch, Deposition, Cleans, Ash environments and more.
- Lower CTE provides a simple gland design
- Maximum service temperature of 293°C (559°F)
- High purity (particulation and metals) due to organic nature of material
- Zero outgassing up to 200°C and above
- Broad chemical resistance



Seal Applications

- Chamber seals
- RPU valves
- E-seals
- Forelines
- Pendulum valves
- Flange/NW/ISO fittings
- Static o-rings

Note: Due to the nature of the material, slight variations in this color may exist in Chemraz® G20. Darker or lighter areas may also be present on the parts. These natural variations should be considered cosmetic, and will not affect the performance of the parts.



Chemraz® G20 Properties

Compound No./Material Name: Chemraz® G20	Polymer Type: FFKM	Manufacturing Method: Compression Molded
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Description	Chemraz® G20
Physical Properties (ASTM Standard)	
Color	Dark Brown to Black
Polymer Type	Perfluoroelastomer
Hardness, Shore A (D2240)*	80
Hardness, Shore M (D1414/D2240)	78
Mechanical Properties (ASTM Standard)	
Tensile Strength, psi [MPa] (D1414/D412)	1,420 [9.8]
Elongation, % (D1414/D412)	225
Tensile Modulus @ 100% psi [MPa] (D1414/D412)	530 [3.7]
Tensile Modulus @ 50% psi [MPa] (D1414/D412)	340 [2.3]
Thermal (ASTM Standard)	
Compression Set, % (D1414/D395)	
70 Hours @ 200°C	25
70 Hours @ 250°C	40
70 Hours @ 300°C	60
Maximum Service Temperature (°C/°F)	293/559
Minimum Service Temperature (°C/°F)	-14/7
Microcontamination (ASTM Standard)	
Outgassing (Total, PPW – 200°C, 30 minutes)	0.0
Permeability Constant	
Helium @ 100°C, cm ³ cm/(cm ² s ATM (D1434)	6.04 x 10 ⁻⁶

Notes:

- Not for specification purposes.
 - Unless otherwise specified, test performed on AS568A -214 o-rings.
 - Consult Greene Tweed for applications below 0°C and above 200°C.
- * Tests performed on button samples.

Color variations and dark spots that might be observed in Chemraz® parts are considered cosmetic and an inherent result of the polymer curing process. They are not foreign matter and are not anticipated to adversely affect the performance of the part in service. Please contact a Greene Tweed applications engineer for additional information.

Greene Tweed

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