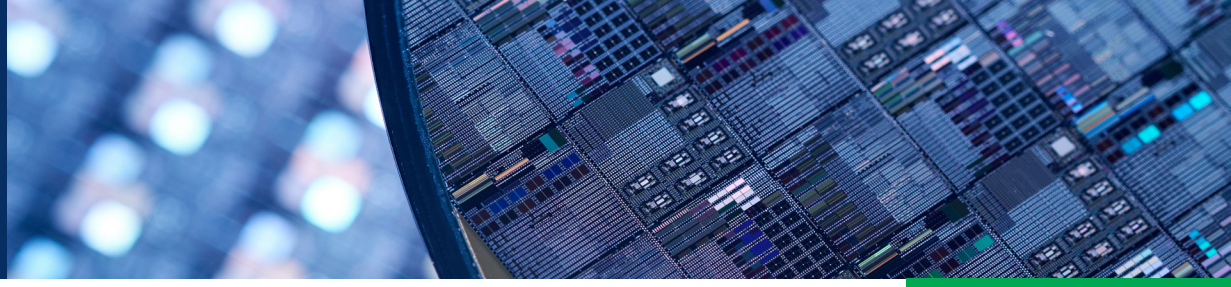


DATASHEET

Chemraz® 551

Broad Chemical Resistance at Elevated Temperatures

With its broad chemical resistance, Chemraz® 551 is ideally suited as a universal sealing material for both aqueous and dry semiconductor wafer processing and chemical/DI water distribution systems.

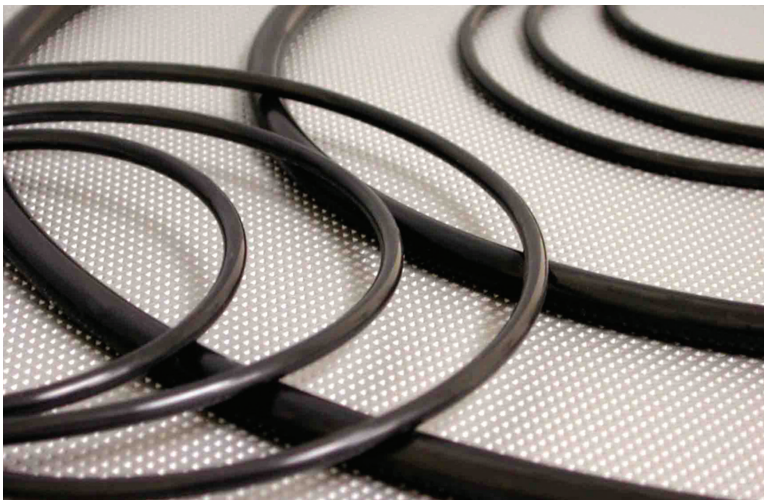
With the lowest outgassing profile for perfluoroelastomer materials in high-temperature applications, Chemraz® 551 provides a cleaner process environment. Because of its reduced surface stiction, it can be used for semi-dynamic and static applications. Chemraz® 551 remains stable at operating temperatures up to 572°F (300°C), while maintaining exceptional compression set.

Chemraz® 551 provides a significantly wider operational band and superior compression set resistance than any other broad range perfluoroelastomer on the market.

With an upper temperature limit of 600°F (316°C), it's the elastomer of choice for the most demanding applications from ozonated DI water to hot sulfuric resist strip.

Chemraz® 551 withstands the extreme thermal challenges typically found in LPCVD (low-pressure chemical vapor deposition), RTP (rapid thermal process), and epitaxial deposition systems.

Chemraz® 551's broad chemical resistance and high-temperature performance result in increased seal integrity, longer seal lifetimes, reduced downtimes, and higher wafer processing yields.

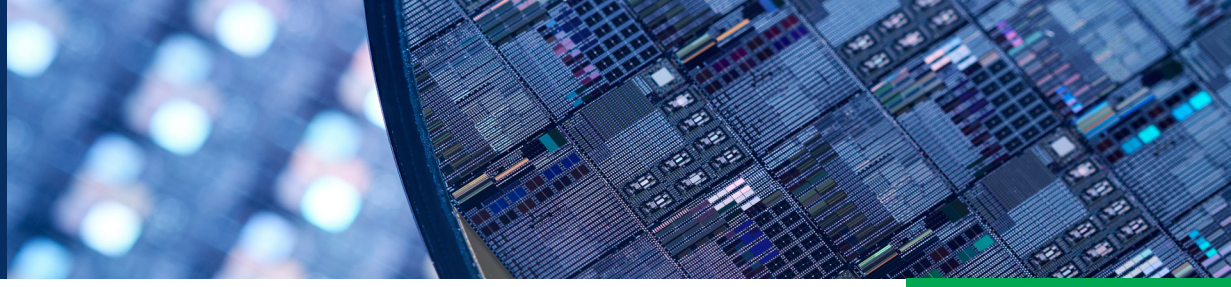


Features and Benefits

- Broad chemical compatibility
- High temperature capability (up to 600°F/316°C)
- Excellent compression set maintains seal integrity in wide temperature and pressure variations as well as vibration
- Breadth of capabilities allows for standardization on one material and reduces inventory line items
- Longer and better seal integrity in seal applications
- Lower overall equipment cost of operation
- World class cleanliness in semiconductor and wet applications

Applications

- Chamber seals
- Dispensing seals
- Fitting and union seals
- Filter seals
- Gas inlet/outlet seals
- Gaskets
- Gate valve seals
- Isolator valve seals
- Reaction chamber lid seals
- Regulator seals
- Seals in close proximity to high-temperature water heaters
- Slit valve seals
- Tube capping seals
- Valve seals



DATASHEET

Typical Properties	
Physical Properties (ASTM Standard)	**Typical**
Color	Black
Polymer Type	Perfluoroelastomer
Specific Gravity (D792)	2.00
Hardness, Shore A* (D2240)	80
Mechanical (ASTM Standard)	
Tensile Strength, psi (kPa) (D1414)	3425 (23610)
Elongation, % (D1414)	175
Tensile Modulus, psi (kPa)	
Modulus @ 50% Elongation (D1414)	450 (3103)
Modulus @ 100% Elongation (D1414)	1475 (10170)
Compression Set: 70 Hours @ 204°C @ 25% Deflection, % (D395)	20
Thermal	
Temperature Range**	10°F to 600°F (-12°C to 316°C)

Not to be used for specification purposes.

Unless otherwise indicated, all tests are performed on AS 568A (-214) o-rings.

** Test performed on button samples.*

*** Consult Greene Tweed for proper design guidelines in applications that exceed 482°F (250°C)*

Recommended Process Applications

- Atomic layer deposition
- Electrochemical plating
- Epitaxial deposition
- LPCVD (silicon nitride, silicon oxide)
- Photolithography track pre-cleaning
- RTP (annealing, oxidation, nitridation, silicidation)
- Silicon water ingot growing
- SOI annealing
- Typical etch & deposition plasma gases, including NF_3 and O_2
- Thermal CVD
- Wet cleaning (batch and single wafer)
- Wet etch (oxide, nitride, metal)
- Wet photo resist strip (acid, solvent)

Note: 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 not anticipated to adversely affect the performance of the part in service. Please contact a Greene Tweed applications engineer for additional information.

Greene Tweed
1684 South Broad Street, PO Box 1307 | Lansdale PA 19446 USA | Phone: (+1) (215) 256-9521 | **www.gtweed.com**

5/22-GT DS-US-SC-166