



# **CHEMRAZ® XTR**

## Superior Resistance to Corrosive CIF<sub>3</sub> Cleaning Environments

#### FFKM INCREASES MANUFACTURING PRODUCTIVITY

Chemraz® XTR, a perfluoroelastomer, is specifically designed to withstand the highly corrosive environments that commonly occur from using CIF<sub>3</sub> as a cleaning gas. Chemraz XTR addresses application challenges typically found in ALD (Atomic Layer Deposition) of titanium nitride and other nitride-based film deposition. With its unique molecular composition combined with fillers, it provides the highest available chemical resistance to thermal cleaning processes utilizing CIF<sub>3</sub>, resulting in minimal contamination, minimal weight loss and longer seal lifetime. This means less downtime and higher wafer-processing yields.

Chemraz XTR is recommended for both static and semi-dynamic applications in systems used for film deposition and etching, specifically for ALD of new barrier layers for advanced devices. These layers consist of materials that are difficult to etch; therefore, CIF<sub>3</sub> is employed for cleaning. Chemraz XTR has high chemical resistance to corrosive fluorine-based chemistries at elevated temperatures. In addition, Chemraz XTR remains stable to service temperatures exceeding 300°C (572°F) while demonstrating exceptional compression set resistance. This combination of excellent chemical resistance and low compression set in the extremely elevated temperatures found in process chambers extends seal longevity.

#### FEATURES & BENEFITS

- Exceptional resistance to fluorine-based plasma environments for increased productivity
- Outstanding resistance to CIF<sub>3</sub> "thermal cleans" in ALD equipment results in extended PM (preventative maintenance) cycles
- Very low extraneous metallic ion content for reduced contamination
- Minimal compression set at elevated temperatures ensures sealing integrity
- Extended production performance with added reliability increases equipment operational time
- Reduced stiction simplifies PM

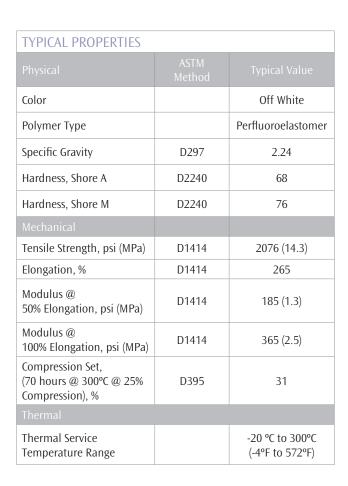


#### **APPLICATIONS**

- Process chamber seals including:
  - Gate valve seals
  - Isolator valve seals
  - Lid seals
  - Gas inlet/outlet seals
  - Slit valve seals
  - Chamber wall seals
- Systems employing remote delivery of ionized fluorine

#### RECOMMENDED PROCESS APPLICATIONS

- Systems depositing barrier layers of TiN, TaN and other refractory metal-based films
- Thermal environment with both high temperature (>300°C) and high concentration of ionized fluorine, ionized by plasma or thermal methods
- Delivery tubing seals for remotely generated fluorine-based gaseous cleans or thermally ionized CIF, gas



Chemraz® XTR, collaborative innovation from GREENE, TWEED & CO., INC., and DAIKIN INDUSTRIES, LTD.

Statements and recommendations in this publication are based on our experience and knowledge of typical applications of this product and shall not constitute a guarantee of performance nor modify or alter our standard warranty applicable to such products.

Prior to actual use it is recommended compatibility tests be run to determine suitability in a specific application. This is critical where failure could result in injury or damage. A regular program of inspection and replacement should be implemented. Greene, Tweed technical personnel are available to help with a recommendation.

### Contact Us

**Greene, Tweed** Semiconductor Kulpsville, PA, USA

Our Distributor

Banner Industries

High Purity Flow

Component Distribution

USA & Asia Pacific

Tel: +1.215.256.9521 Fax: +1.215.256.0189

Tel: +1.800.705.0016 Web: www.bannerindustries.com

