

## SEMICONDUCTOR SOLUTIONS

# Electroplating



### Chemraz®: The Preferred Choice for Semiconductor Sealing Solutions

Greene Tweed's broad range of Chemraz® formulations are utilized by some of the world's leading semiconductor fabs because of their superior performance and reliability. Chemraz® sealing solutions provide customers with an increased MTBR (mean time between repair) to reduce downtime and maintenance costs.

#### Superior Performance

- Minimal extractable ion content
- Exceptional plasma resistance
- Low particle generation
- High dimensional stability

#### Operational Benefits

- Superior reliability
- Enhanced repeatability
- Maximum system uptime
- Lower cost of ownership

### Greater Reliability. Higher Wafer Yields.

In wafer fabrication processes such as electroplating, stringent seal integrity and contamination control are essential. Seals used in electroplating must also maintain integrity in harsh operating environments such as acids, solvents, bases and ultrapure deionized (UPDI) water applications.

Greene Tweed's sealing solutions are engineered to withstand these harsh application environments, along with providing extended performance and added reliability in a wide variety of wet processing applications.

Greene Tweed's sealing technologies have also proven to reduce plate-out and optimize edge exclusion, delivering the highest possible wafer yields while reducing downtime and maintenance costs.

Process	Typical Application Temperatures	Process Environments	Recommended Products
Electroplating, Electrochemical Deposition	25 – 100°C	Cu, SnAg, Sn, NiAu	Chemraz® 570 Enduro LF10 Coatings Technaloc Bonding

Applications	
Chip Packaging Advanced Memory Interconnect Wafer Bumping	Redistribution Layers MEMs TSVs WLP



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## Chemraz® 570

Minimal particulation and maximum plasma resistance make Chemraz® 570 ideal for a broad range of wet processing applications. It features very low contaminants, good physical properties and excellent performance history.

Compression Set @25% Deflection - %	Hardness, Shore A	Max Service Temperature
70 hours @ 204°C 35%	70	210°C



## Enduro® LF10 Coatings

A thin, conformal, PTFE-based coating that can be applied to a variety of components within manufacturing equipment – including elastomeric, thermoplastic, or metal components to enhance their performance.

- High conformality enables coating of complex surface features
- Friction and sticking force reduction extends lifetime of components, especially in dynamic and semi-dynamic applications
- Application of the coating occurs at low temperatures, allowing coating of delicate structures and temperature-sensitive materials
- Changeable surfaces from hydrophilic to hydrophobic enhance process equipment efficiencies



## Technaloc® Bonding

This enhanced bonding solution extends the life of sealing solutions in HPHT (high-pressure, high-temperature) applications, and offers a stronger and more reliable bond to a wide variety of substrates, including aluminum, thermoplastics, and stainless steel.

- Enhances bond strength to withstand harsh conditions, improves seal service life, and addresses washout concerns
- Enables improved reliability and efficiency of seals to reduce downtime and decrease maintenance costs
- Offers custom, applications-specific developments

## The Greene Tweed Advantage

Greene Tweed has been developing high-performing sealing solutions to withstand the extreme conditions in semiconductor fabs since the 1980s, and has continually evolved to meet the increasingly demanding needs of the industry.

Greene Tweed leverages decades of engineering and applications expertise to design customized solutions, including material selection and hardware design based on specific operating environments, such as acid, solvent, and ultra-pure H<sub>2</sub>O applications.

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