SmartEtch Clean for Etch Chamber Components

Selective etch kit cleaning that delivers up to 3x more cleans before recoating

Semiconductor manufacturers face constant pressure to improve yield, maximize uptime and reduce costs. UCT's SmartEtch Clean removes etch residue while preserving protective coatings.

Traditional mechanical cleaning is non-selective and attacks the coating along with the residue. SmartEtch Clean minimizes coating loss, extending component life and reducing recoating frequency.

THE CHALLENGE

CONVENTIONAL CLEANING CAN REDUCE COMPONENT LIFE

Traditional etch kit cleaning processes lead to:

- Protective coating loss
- Increased particle generation
- Reduced component lifetime
- More frequent recoating cycles
- Higher preventive maintenance costs
- Lower tool availability

As process nodes continue to shrink, component integrity is critical to controlling contamination and increasing yield.

THE SOLUTION

SMARTETCH CLEAN SELECTIVE CHAMBER CLEANING

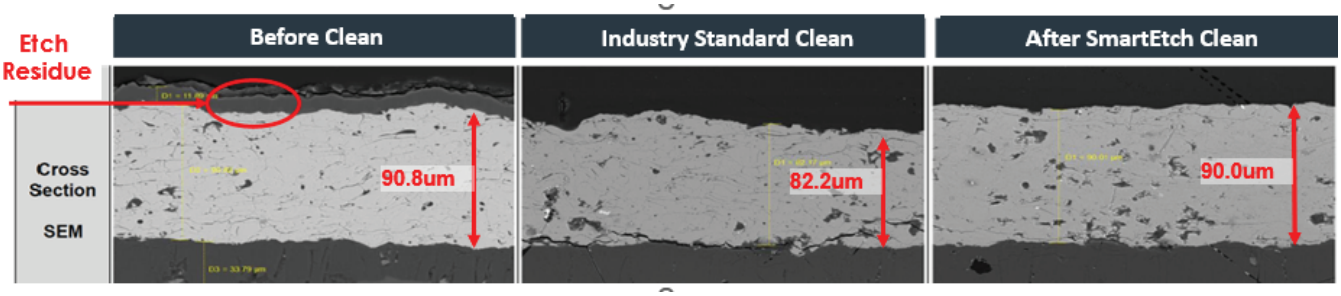
SmartEtch Clean delivers:

- ✓ Selective residue removal with coating preservation
- ✓ Minimal coating erosion
- ✓ Improved process repeatability
- ✓ Reduced chamber variability
- ✓ Extended etch component lifetime
- ✓ **Lower total cost of ownership**

Engineered for coated etch chamber hardware in both FEOL and BEOL manufacturing environments.

PROVEN PERFORMANCE: MORE CLEANING CYCLES BEFORE RECOATING

SmartEtch Clean preserves valuable chamber coatings by selectively removing etch residue while minimizing material removal from the underlying coating. UCT compared an industry-standard clean with SmartEtch Clean using SEM cross-section analysis:



~9% coating loss per clean with conventional methods

<1% coating loss per clean with SmartEtch Clean

3x more cleaning cycles before recoating

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APPLICATIONS

SmartEtch Clean supports coated etch chamber hardware across a range of etch processes and device types.

Semiconductor Etch Process Support

- Plasma Etch Systems
- Dielectric Etch Applications
- Conductor Etch Applications
- Logic Device Manufacturing
- Memory Device Manufacturing
- Advanced Technology Nodes

Supported Chamber Hardware

- Etch Kits
- Chamber Liners
- Focus Rings
- Edge Rings
- Electrodes
- Coated Process Components
- Critical Chamber Assemblies

WHY SEMICONDUCTOR MANUFACTURERS CHOOSE UCT

Global leader in semiconductor cleaning and contamination control

- **Advanced semiconductor cleaning technologies**
- **Global service capability**
- **Chamber component refurbishment expertise**
- **Analytical contamination support**
- **Coating and surface engineering solutions**
- **Proven chamber performance optimization**

KEY CUSTOMER BENEFITS

- ✓ Reduced semiconductor maintenance costs
- ✓ Extended coated component life
- ✓ Improved chamber performance
- ✓ Increased tool uptime
- ✓ Lower total cost of ownership
- ✓ Enhanced yield stability

Extend coating life on your next clean

Contact your UCT representative to arrange a SmartEtch Clean evaluation.