

Cleaning, Coating, and Analytical Services

For Parts that Require Ultra-High-Purity and Extended Longevity

UCT SERVICES DIVISION

The UCT Services Division is a global leader in ultra-high-purity (UHP) semiconductor chamber parts cleaning, performance coatings, and analytical verification. As semiconductor process-node complexity increases, fabs must improve device performance, while also controlling manufacturing cost, which drives higher expectations for chamber uptime, longer maintenance cycles, and consistent part performance. With one of the largest global footprints for companies of its kind that support the semiconductor industry, the UCT Services Division offers:

12

Advanced Technology Cleaning Centers located in Asia, North America, Europe, and the Middle East (cleaning/coating/analytical verification)

6

Analytical testing laboratories, part of UCT's ChemTrace suite of solutions

30+

Years of experience developing customized cleaning, coating, and analytical verification solutions for the largest semiconductor manufacturers in the world

CORE CLEANING AND ANALYTICAL CAPABILITIES

UCT offers the following core cleaning and analytical capabilities that are optimized to remove deposition and contaminants without damaging part surfaces, including verification of adherence to customer ultra-high-purity specifications. UCT offers:

- UHP cleaning and coatings for both new and recycled chamber hardware, supporting critical wafer-fab processes including:
 - **ALD**: selective deposition removal, large/heavy-part handling, and analytical validation (e.g., ICP-MS, IC)
 - **CVD**: showerhead cleaning expertise and automated optical hole inspection
 - **Etch**: minimally abrasive/non-contact cleaning, plasma re-coating options, and advanced quartz cleaning recipes
 - **PVD**: environmentally safer deposit/coating removal (e.g., TWAS/deposit removal) and proprietary coatings such as C-Coat™ to improve performance and extend part life
- Cleaning process development and optimization based upon substrate type (aluminum, steel, quartz, etc.), as well as deposition and coating type
- Ultra-high-pressure DI water jet cleaning (ECP) to remove contaminants in an environmentally friendly way, and reclaim high-value metals from removed deposition
- Copy-exact process transfers across Advanced Technology Cleaning Centers and ChemTrace analytical laboratories to deliver the same UHP process, worldwide
- Robust metrology capability (CMM, SEM/EDS, Profilometry, ICPMS, TOC, Ion Chromatography, RGA, LPC, DPC, CPC, Optical)

CORE COATING CAPABILITIES

UCT designs and applies coatings tailored to customer requirements, balancing performance and cost through a broad portfolio of advanced materials, deposition methods, and process expertise.

UCT offers Suspension Plasma Spray (SPS) coatings, Atmospheric Plasma Spray (APS) coatings, Twin Wire Arc Spray (TWAS) coatings, and Atomic Layer Deposition (ALD) coatings. These coatings are applied using computer-controlled robotic systems and monitored via SPC (statistical process control) to ensure repeatability and consistent specification performance.

COATING SOLUTIONS

C-Coat™ double-layer twin wire arc spray (TWAS) coating, which creates a robust barrier on PVD kits, specifically engineered to minimize defect excursions and extend kit life

Atmospheric Plasma Spray (APS) YAG, Yttrium Oxyfluoride (YOF), Yttrium Oxide (Y_2O_3) and Suspension Plasma Spray (SPS) Y_2O_3 coatings (each is designed to withstand aggressive chamber environments and maintain kit integrity)

Kits coated by UCT for semiconductor customers are proven in high-volume manufacturing, operating at more than one million wafer passes per month. This durability results in fewer part replacements and lower overall costs for our customers.

WHY PARTNER WITH UCT?

The UCT Services Division offers cleaning, coating, and analytical services often at a single location, leading to lower cost, faster lead time, and better operational control. UCT's technology leadership and robust R&D and engineering capabilities deliver innovative, optimized solutions to **achieve high-purity cleaning and coating specifications** at a **lower cost through increased part longevity and performance**.

For more information about UCT's latest technologies and customer success stories, please contact the UCT Services team at servicesinforequest@uct.com or visit our website at www.uct.com.

UCT SERVICES LOCATIONS

United States

- Hillsboro, OR
- Phoenix, AZ
- Carrollton, TX
- Fremont, CA
- Scarborough, ME
- Colorado Springs, CO

International

- Tainan, Taiwan
- Singapore
- Pyeongtek, Republic of Korea
- Cavan, Ireland
- Glenrothes, Scotland
- Qiryat Gat, Israel

