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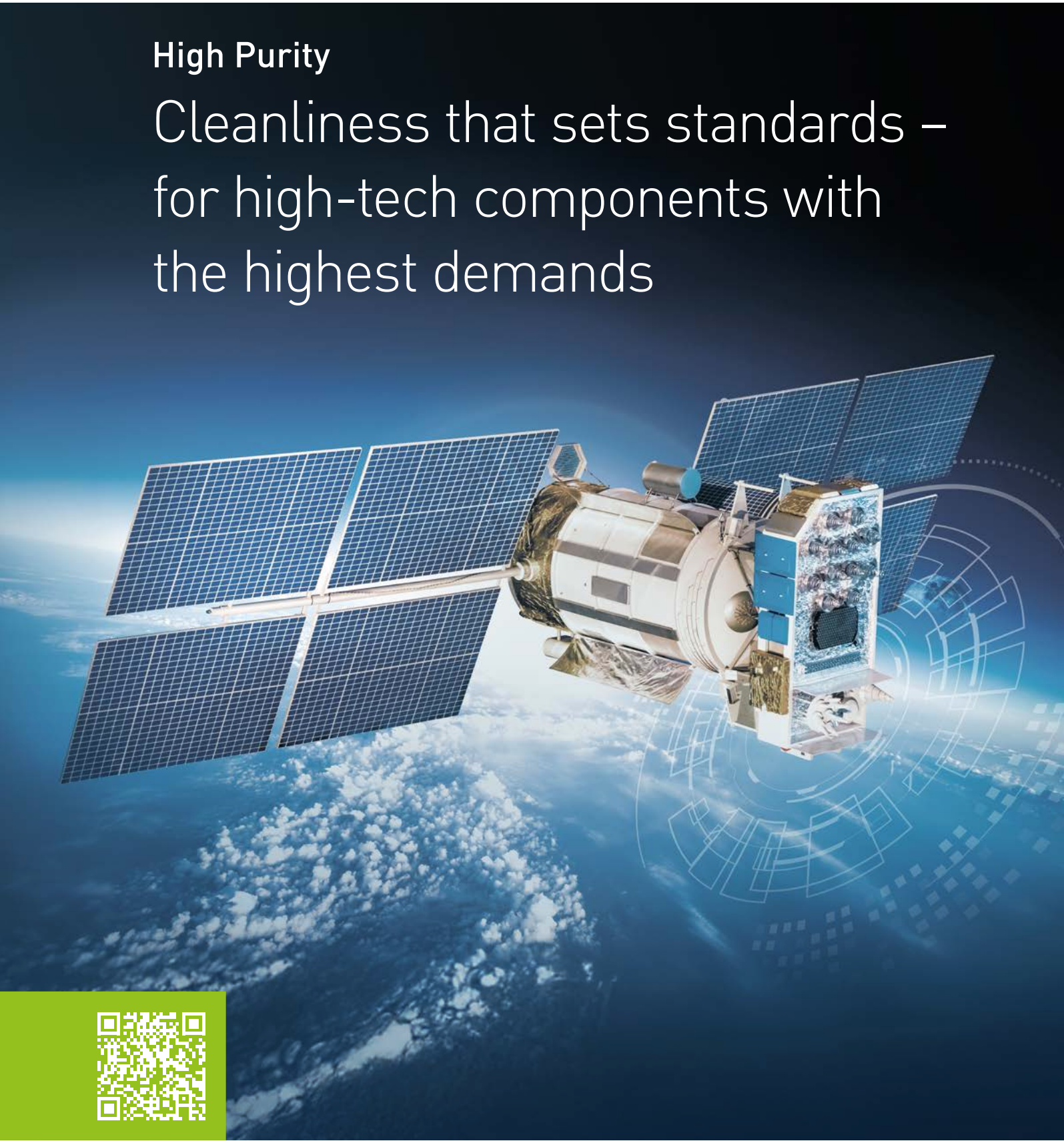
High Purity

Cleanliness that sets standards – for high-tech components with the highest demands



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Parts Cleaning of High Purity Components

The cleaning of high-vacuum components (UHV, XHV, UCV) which are used for example in production equipment for the semiconductor industry (e.g. EUV and DUV technology), vacuum technology solutions for science, research and industry, or also high-power laser systems, place extremely high demands on the cleanliness of the components used. For these tasks in high-tech industries, Ecoclean develops and manufactures cleaning solutions that are optimally tailored to the application. They ensure that the required cleanliness levels are achieved in a stable, sustainable and efficient manner.

AT A GLANCE

Parts and components

- Components for EUV and DUV lithography
- Wafer scanner
- Depositing systems
- High-vacuum pumps and valves
- Components for high-power lasers (High-Power Ultra-Short-Wavelength)
- Components for high-power measurement and analysis systems, e.g. gas chromatographs, electron scanning microscopes, mass spectrometers

Requirements (GRADE I-IV)

- General: free of processing agents, free of stains
- Particular requirements in the µ range or below
- Extreme limit values in relation to residual organics or residual moisture
- Atomic/molecular limits

System Technology:

- Aqueous cleaning systems, e.g. single and double chamber systems, immersion-type systems
- Ultrasonic immersion-type systems as standard and special solutions
- Solvent cleaning systems as single and double chamber systems
- Special systems for aqueous and solvent cleaning, e.g. for very large components
- Spray cleaning systems
- Flexible process engineering, e.g. spraying, immersion, pressure flooding, injection flood washing, ultrasonic cleaning – also with several frequencies, Ultrasound Plus, Pulse Pressure Cleaning (PPC), low-pressure plasma
- Flexible movement of goods, e.g. turning, swiveling, oscillating, lifting movements
- Vacuum drying after solvent or aqueous cleaning, infrared and/or high purity hot air drying – also combined with vacuum drying (aqueous)
- Media treatment tailored to the cleaning technology, process, contamination, cleanliness requirement and throughput, e.g. distillation, vacuum evaporator, ultra-filtration, deionized water system, deionized ultra-pure water systems, osmosis, desalination solution
- Partial and full automation including goods transport via roller conveyors, robots or loading portal

Solution Concepts

Pre-cleaning "free of oil and grease"

Cleaning after machining or finishing
- Oil, emulsion, particles, rub off, ...

Final cleaning "Grade II"

After pre-cleaning
- Removal of residual organics, particles and atomic/ionic contamination

Final cleaning "Grade I"

After pre-cleaning
- Removal of residual organics, particles and atomic/ionic contamination

Applications, Processes & Expertise

In high-tech industries such as semiconductor manufacturing, vacuum technology, and laser technology, the requirements for cleanliness and precision are extremely high—and just as diverse. Meeting these requirements calls for not only in-depth technological expertise, but also a thorough understanding of the respective applications and physical relationships.
Our many years of expertise in high purity cleaning, coupled with projects successfully implemented worldwide, form the basis for tailor-made solutions. Specially developed processes such as Ultrasound Plus, vacuum-based Pulsated Pressure Cleaning (PPC), low-pressure plasma, and various drying technologies are used. This is complemented by intelligent media treatment systems that ensure consistent cleaning results. The systems themselves are consistently designed for maximum purity: from the selection of suitable materials and optimized surface qualities to precise processing technologies – everything is tailored to the most demanding specifications of our customers.

Insights into our applications and processes (video)

Ecoclean High Purity Test Center

At our High Purity Test Center, we conduct cleaning trials and feasibility studies for a wide variety of system and process solutions under cleanroom conditions.
Our cleanroom-based Customer and Test Center has two cleaning areas with different cleanliness classes. The first area is a cleanroom connected to a solvent and an aqueous chamber system. Components with medium to high cleanliness requirements are cleaned in this area. Depending on the requirements, this can be final cleaning or pre-cleaning for the highest cleanliness requirements. The second area is housed in a validated ISO 7 class cleanroom. This area is designed for cleaning tests on components with the highest cleanliness requirements, such as those required for grades 1 and 2. The components (e.g., for use in the semiconductor, laser, or optics industries) are always pre-cleaned.

Services

- Cleaning trials with original components
- Feasibility studies (verification of achievable cleanliness classes)
- Process development and definition
- Cleaning services (e.g., prototypes, small series, etc.)

Insigts into our High Purity Test Center (video)

Cleaning Service Provider

In industrial component manufacturing, technical cleanliness is crucial for the quality and functionality of products. With more than 60 years of experience in industrial parts cleaning, the Ecoclean team is among the experts in the industry. Our expertise in the construction of state-of-the-art cleaning systems, cleaning trials, and experience in the development of cleaning processes form the basis for offering you customized contract cleaning services for your cleaning tasks, including high purity components.

Thanks to our in-depth process know-how and our wide range of available systems, we achieve maximum cleanliness results for your components in accordance with industry-specific cleanliness standards. We support you in delivering the quality you need for your subsequent processes or for your end customers.

Insigts into our Services (video)

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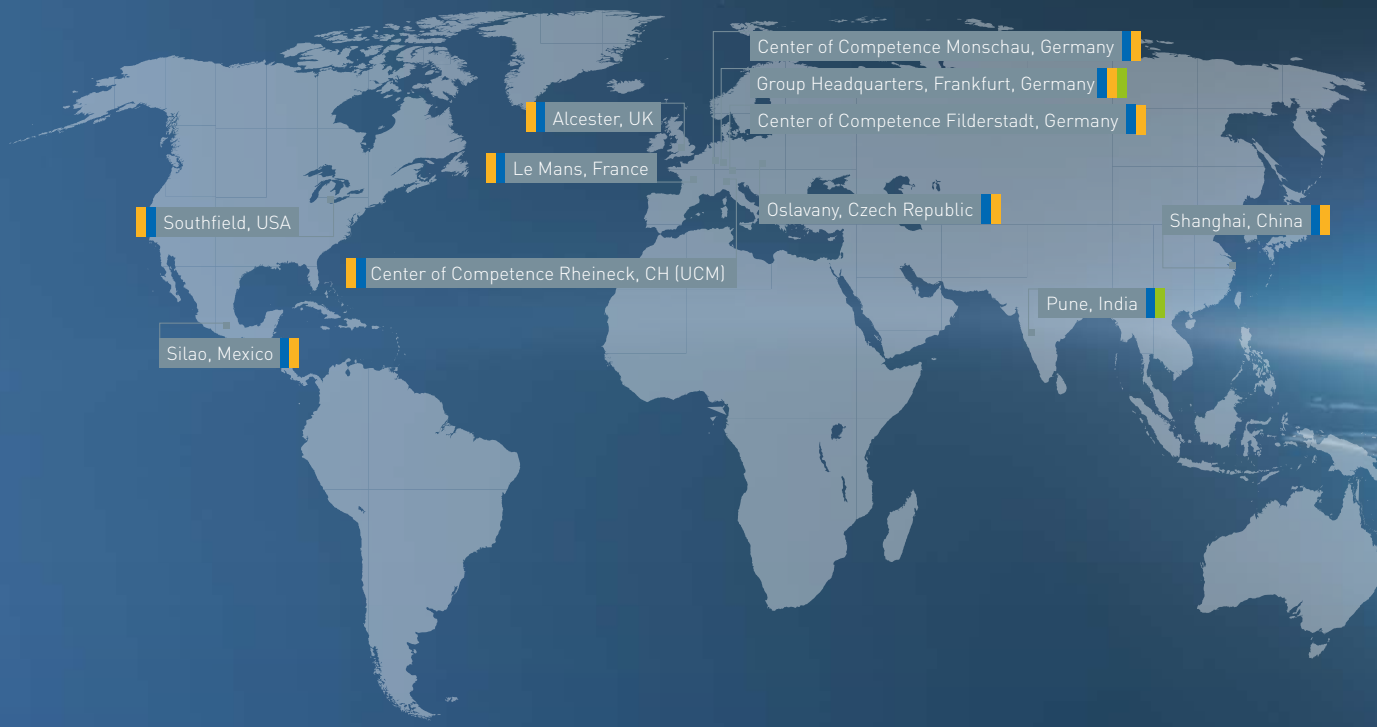
Our Loations Worldwide



CONTACT

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