

Technological Solutions for Aerospace Systems



Precise. Reliable. Efficient.

Optimization of complex manufacturing processes

Our highly developed technologies can be flexibly integrated into a wide range of industrial processes - even in sensitive areas of the aerospace industry. They meet the highest requirements for precision, reliability and efficiency and enable the optimization of complex manufacturing processes and compliance with strict quality standards.

Growth of high-performance crystals

Materials such as CdTe, GaN, Ge or SiC are key components of modern aerospace systems. They enable powerful IR detectors, radar technology, optoelectronic sensors and robust electronics - for example in surveillance drones, satellites or air defense systems. With innovative systems for all common crystal growing technologies and over 60 years of experience, we are the global market leader in the production of high-purity crystals.



Purification of Graphite & CFC products

Graphite and CFC products used in aerospace, defense, semiconductor, and battery applications require specialized thermal treatment to achieve their exceptional properties. Whether a higher degree of graphitization or ultra-pure purification is needed, our high-temperature furnaces offer tailored solutions to meet your requirements. Treatment with reactive gases enables the production of ultra-pure graphite with impurity levels as low as 15 ppm.



Plasma treatment for functional surfaces

Plasma treatment ensures optimal surface properties for coatings, markings, and adhesion on metals, PCBs, and composites, increasing process reliability in demanding areas such as aviation and aerospace. It also plays a key role in the production and optimization of MEMS-based sensor systems for civil and military use. Plasma treatment supports the reliability and performance of sensitive microscale sensors, including bolometers for infrared detection in missiles and jets, by improving adhesion, material properties, and reducing contamination.



Vacuum brazing in cryotechnology

Vacuum brazing is a crucial manufacturing process in cryogenics, especially in the production of highly sensitive infrared sensors. The non-porous, metal-tight connection technology produces reliable brazed joints with excellent heat and signal transmission. This technology is used in high-performance applications - wherever thermal stability and precision are required.



Plasma nitriding of wear-stressed components

Plasma nitriding increases the resistance of metallic components to wear and corrosion - even in titanium materials. The process is used, for example, in aerospace components or mechanically highly stressed systems in the defense sector.



Gas phase infiltration for the production of fiber composites

CMCs manufactured using chemical vapor infiltration (CVI) combine high temperature resistance, strength and toughness with low density and excellent corrosion resistance. These properties make them ideal for applications in which materials have to function reliably even under extreme conditions - for example in engines, heat shields or high-performance components in the aerospace industry.



Diffusion bonding for highly stressed complex component structures

Diffusion bonding enables the seamless joining of complex components with maximum strength and corrosion resistance - ideal for extreme thermal and mechanical loads. It is suitable for a wide range of materials and is used in compact heat exchangers, cooling structures and structural components in aviation and aerospace electronics, among others.



Vacuum sintering of heavy metals

Vacuum sintering is a key process for manufacturing high-density components from heavy metals such as tungsten or molybdenum. The process at high temperatures under vacuum produces a homogeneous, low-porosity microstructure with excellent mechanical and thermal properties. The combination of high density, dimensional stability and temperature resistance makes vacuum-sintered heavy metals an indispensable material.



Vapor phase deposition of ceramic protective coatings

The CVD process can be used to produce extremely adhesive and temperature-resistant ceramic coatings. These reliably protect components against wear, corrosion and thermal stress - ideal for use in aerospace systems, such as heat shields, sensors or engine components.



Material and system analysis using non-destructive ultrasonic detection

Ultrasonic microscopy solutions for the non-invasive analysis of material structures and encapsulated components guarantee highly efficient quality assurance, especially in ongoing production processes. This technology is suitable as an analysis option for quality testing of materials used in aerospace, but also particularly for fault analysis of encapsulated electrical and electronic components in the series production of small satellites.



Our promise

We combine deep consulting expertise, solution-oriented thinking, and the highest quality standards across all technology fields. By leveraging innovative materials and advanced production technologies, we develop future-proof high-tech systems with industry-leading process technology and top-tier quality – Made in Europe.

Our solutions are designed to meet the highest requirements, especially for safety-critical systems, ensuring long service life and reliable performance. Throughout the entire project, we support our customers with expert, personalized service – from the initial consultation to reliable after-sales support. Our flexibility is valued by our customers and is backed by the financial strength of the publicly listed PVA TePla AG.

This is how we consistently fulfill our promise: the best system technology for even better materials.



PVA TePla AG
Im Westpark 10 - 12
D-35435 Wettenberg, Germany
T: +49 641 68690-0
info@pvatepla.com
www.pvatepla.com

Your direct contact
Danny Kirmse
Business Development Aerospace
T: +49 641 68690-941
danny.kirmse@pvatepla.com