



## **PUSHING THE LIMITS**

Exploit the full potential of additive manufacturing with special metals

# THE ADDITIVE REVOLUTION: THE NEXT STEP

Where others retreat, we go a step further. With our broad expertise, we ensure the highest level of process reliability at every stage in the development of high-tech applications. Our experience allows us to take full advantage of the potential of additive manufacturing to meet your needs. While the printing process offers new degrees of freedom, we confront a high level of complexity. Conducting our own research and development gives us a great deal of freedom to address individual needs. As a partner and independent specialist with a wide range of expertise, we offer solutions that ensure efficiency, reliability, and success.

## **Powders, processes, printing: three pillars, one partner**

As part of the Heraeus Group, we are not merely a recognized expert in the production of high-quality metal powders. More than practically any other provider, we combine this capability with expertise in 3D printers and printing processes. We provide the three essential pillars of successful additive manufacturing – and produce flawless results.

## **Additive manufacturing with Heraeus: indispensable in numerous industries**

- › Mobility
- › Aerospace
- › Hydraulics
- › Robotics
- › Electronics
- › Medical components

## **For sophisticated applications: impressive materials**

- › Scalmalloy®
- › Amorphous Metals
- › Refractory Metals
- › Copper
- › Precious Metals
- › Titanium Alloys



# OUR RECIPE FOR SUCCESS: **EFFICIENCY GUARANTEED**

From the design of your components to the post-processing of finished elements, you will benefit from the full range of our expertise. We provide advice every step of the way, ensuring the best possible results.

## **Support from the very beginning: our expertise benefits your component design**

With additive manufacturing, you have a great deal of design freedom. Depending on the material, successful 3D printing requires you to apply specific design rules. Our team of engineers, researchers and material experts provides support – from the initial idea to a print-ready draft.

## **Quality down to the smallest detail: our metal powders**

The quality of the metal powder plays a crucial role in print quality. Because it is so important, the composition of the powder needs to be adjusted to suit each application. Whichever application you choose, our metal powders are of the highest purity, with optimal particle size distribution – and they are consistent from batch to batch.

## **Programmed for success: optimal printing parameters**

To achieve the best results, the selected parameters must be appropriate for the metal powder and the printing system used. Our experts provide the optimal parameters, for example for energy density and build speed. This lowers your costs while also improving the mechanical properties of your printed components.

## **Lowering costs, boosting quality: simulations, prototypes and small series production**

We can simulate the 3D printing of your components before you go into production. Using our own systems (laser beam melting, LBM, or electron beam melting, EBM), we determine whether it is possible to use additive manufacturing to produce your components. We also offer prototypes and small series print-jobs.



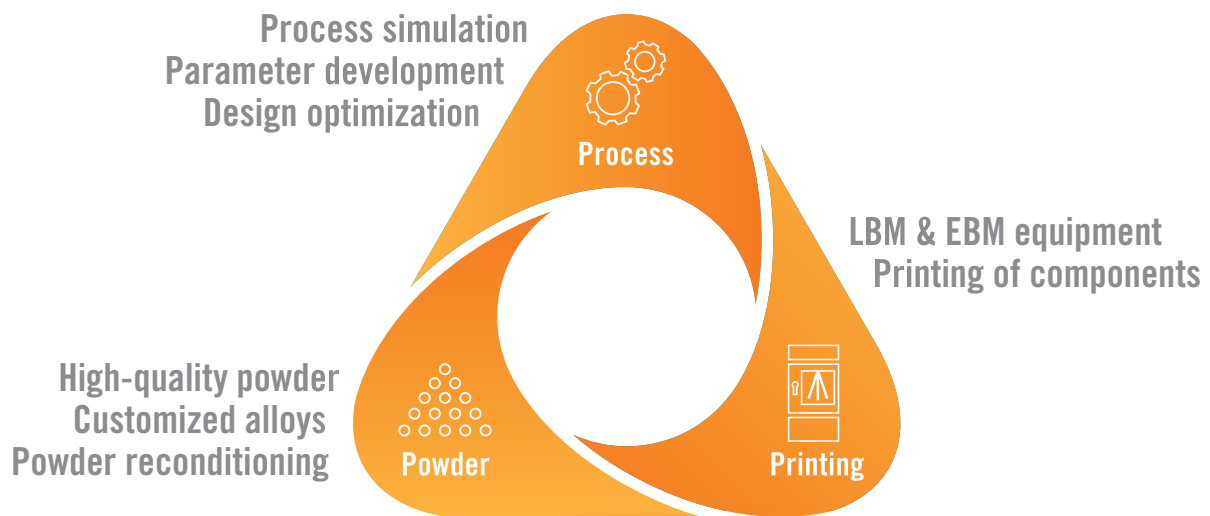


**When you're satisfied, we're satisfied:  
post-processing**

The quality of our powders reduces the need for surface post-processing. When post-processing is required, we offer the whole spectrum from thermal treatment to HIP treatment.

**Sustainability that pays off:  
our powder cycle**

Excess powder cannot be reused indefinitely. Impurities and changes in particle shape can negatively affect printed components. However, leftover powder has significant material value – particularly in the case of precious metals. The same holds true for waste, for example from misprints or support structures. Here, too, our many years of experience in processing and recycling metals yield benefits for you. We create a seamless, documented powder cycle that eliminates the need for costly disposal. Additionally, we offer powder reconditioning to ensure a stable powder quality within your specification. Our customers can focus on manufacturing and not on powder quality control.




# MAKING IT POSSIBLE: **OVER 160 YEARS OF EXPERIENCE**

Heraeus is a global technology group, known for its high-quality solutions based on a combination of material and technological expertise. Since the company was established in 1851, the innovative processing of a wide variety of metals has been one of Heraeus' most important core competencies.

As part of the Heraeus Group, we carry this expertise in our DNA. Through a unique combination of material experience and manufacturing know-how, we develop solutions that give our customers a competitive edge. We draw from a virtually inexhaustible range of experience gained by the Heraeus Group over more than 160 years.



 Countries with Heraeus sites

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