Press Release

From Steel to Digital Manufacturing

GMH Gruppe launches the ProMateria start-up to pioneer metal powder production and additive manufacturing with high-nitrogen steel

Georgsmarienhütte, 19 February 2026 – GMH Gruppe is strengthening its position as an industrial innovator with the launch of ProMateria, a start-up focused on advanced metal powder production and additive manufacturing. The company aims to pioneer the use of high-nitrogen alloyed steel in powder metallurgy and serial 3D printing — opening new possibilities for high-performance components in aerospace, medical technology, the luxury goods industry, mechanical engineering, and the energy sector.

Shaping the future with high-nitrogen alloyed steel

ProMateria combines GMH Gruppe's expertise and innovative strength with new technologies. Its core focus lies in the use of high-nitrogen alloyed steels (High Nitrogen Steel / HNS) in powder metallurgy and additive manufacturing. Through tailored solutions and a broad materials portfolio, ProMateria opens up a new dimension of industrial manufacturing freedom.

"Metal 3D printing is ready for serial production. With ProMateria, we combine in-house powder production, additive manufacturing, and final processing to unlock new potential in terms of performance, design, and sustainability," says Philip Stöhr, Commercial Managing Director of ProMateria.

Investment in targeted innovation

ProMateria was created by engineers striving to push the application boundaries of steel in the 21st century. ProMateria serves as a strategic hub with a strong focus on performance and sustainability: High Nitrogen Steel combines excellent corrosion resistance with hardness, strength, and biocompatibility, offering both economic and environmental advantages.

The start-up also supports internal demand: ProMateria expands spare-parts production capacity within GMH Gruppe and meets the growing market demand for additively manufactured, ready-to-install components.

"We are investing in a rapidly growing future market. Our steel expertise meets state-of-the-art manufacturing technology. The result: new standards in precision, design freedom, and sustainability," says Dr. Alexander Becker, CEO of GMH Gruppe.

Two focus areas – one goal: high-performance components for demanding applications

Metal powder production

ProMateria produces metal powders made from high-nitrogen alloyed steel using a unique high-throughput process specifically designed for powder metallurgy. Production volumes range from 25 to 10,000 kilograms, making them ideal for both prototyping and serial production. Variable process parameters ensure optimal yields for use in various additive manufacturing processes, and quality control is certified to ISO 9001 standards. The base

material is supplied by GMH sister company Energietechnik Essen GmbH; additional iron-based materials from GMH Gruppe are also available on request.

Additive serial production

Using the MoldJet process and proprietary metal pastes, ProMateria enables flexible production from prototypes to series on six platforms in a revolver system, each with dimensions of 375 × 210 × 110 mm (L × W × H). Even highly complex geometries, undercuts, fine details, or hollow structures can be produced with ease. ISO 9001 certification for this area is expected in the third quarter of 2026. The material portfolio ranges from high-nitrogen alloyed steel, stainless steel, tool steel, low-alloy steels, high-temperature alloys, and titanium alloys to ceramics, copper, and more. The technology supports mass customisation, lightweight design, and durable components — combining technical performance with cost efficiency.

Application example – medical-grade metal powder

A current project in this business area focuses on high-nitrogen alloyed metal powder as a sustainable alternative to cobalt- and nickel-based alloys in dental and medical technology. Cobalt poses health risks such as toxicity in cases of abrasion or fracture. ProMateria compared the properties of cobalt alloys with components made from its proprietary metal powder P2000. The material is technically equivalent, safer for patients, and does not cause nickel allergies.

Application example – customised golf clubs

In collaboration with Make Golf, ProMateria is developing customised golf clubs. Users submit their swing profiles and biometric data via an app, which is then translated into optimised designs for putters, irons, or wedges. The process demonstrates ProMateria's ability to deliver mass-personalised metal components with precise geometry and performance optimisation.

GMH Gruppe – from traditional steel to digital manufacturing

ProMateria reflects GMH Gruppe's transformation from a traditional steel producer into a driving force of modern industrial innovation. By combining advanced materials with digital manufacturing, GMH Gruppe is shaping the future of steel — flexible, sustainable, and ready for the industries of tomorrow.

About GMH Gruppe

GMH Gruppe is a full-service provider of steel products, ranging from scrap-based steelmaking to ready-to-install components. It is one of Europe's largest privately owned metal-processing companies. The group comprises more than 20 medium-sized steel, forging and casting industry sites, serving customers in over 50 countries. With around 6,000 employees, GMH Gruppe generates annual revenues of over 2 billion euros.

GMH Gruppe is a pioneer in sustainable steel production and a member of the 'German Association of Climate Protection Companies'. By recycling metal scrap, the company produces green steel and contributes to a circular economy. The use of electric arc furnaces at four sites reduces CO_2 emissions by 80% compared to the conventional blast furnace and converter route. This also reduces the carbon footprint of customers supplied by GMH. These include companies from the automotive, mechanical engineering, railway, energy, logistics, aerospace, agriculture, and construction machinery sectors.

GMH Gruppe is committed to achieving full climate-neutrality by 2039. www.gmh-gruppe.de/en/.

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