

EOS Metal Material Portfolio Expands with EOS Aluminum Al5X1: High-Strength, Anodizable Aluminum Alloy for Industrial 3D Printing

A superior combination of strength, elongation and cost compared to other aluminum alloys with similar properties for additive manufacturing

- **New, innovative aluminum alloy: lightweight, high strength, elongation and corrosion resistance**
- **Single-step heat treatment without water quench**
- **Ideal for aviation, space, electronics and transportation industries**

Krailling, Germany, October 18, 2023 – EOS, a leading supplier of responsible manufacturing solutions for industrial 3D printing, today announced the addition of its new [EOS Aluminum Al5X1](#), an aluminum alloy engineered specifically for additive manufacturing (AM), but at a more competitive cost than other aluminum alloys with similar strength and elongation properties. EOS Aluminum Al5X1 delivers excellent performance and material properties with a combination of high strength and elongation, around 410 MPa UTS and 14% elongation.

Requiring only a **single-step heat treatment with no HIP (Hot Isostatic Pressing)**, organizations manufacture parts faster and at a lower total cost. 3D printed applications using EOS Aluminum Al5X1 can also be electropolished and anodized (Type II and Type III) for both cosmetic (colored) and corrosion resistant protective properties. There are no limits to potential color choices, which could be important to consumer-facing products.

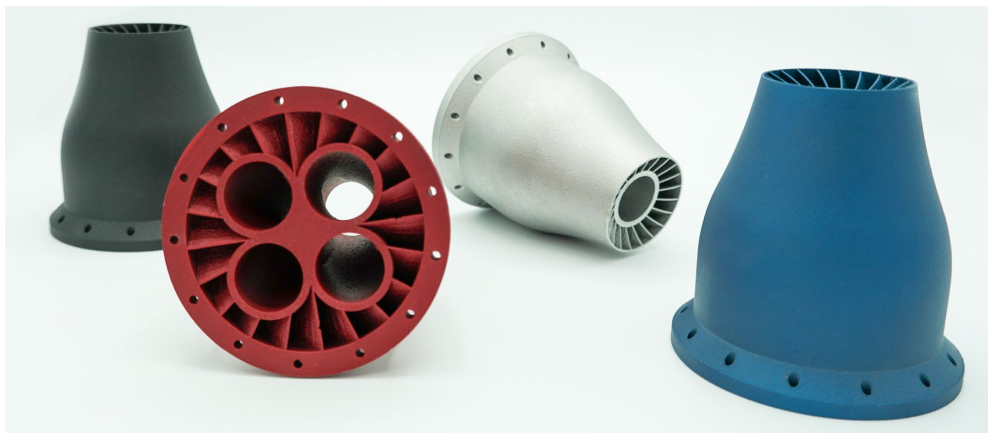


Figure 1 EOS Al5X1 anodized example parts



Press Release

EOS Aluminum Al5X1 was tested by multiple organizations including world-leading semiconductor, aerospace and defense companies. Early adopters have noted that the material's exceptional performance combined with the competitive cost-per-part (CPP) has created a strong business case for production implementation.

"Since early 2023, we have been working to develop Al5X1 performance data and material allowables on behalf of our prime customers," said Brian Neff, founder & CEO of [Sintavia, LLC](#), a designer and additive manufacturer of mechanical systems for the aerospace and defense industry. "Preliminary results are very promising, and we look forward to introducing Al5X1 across our thermodynamic product lines. Developing a higher performing aluminum alloy is of critical importance not only to us, but also to the industry as a whole."

"A combination of high strength and high elongation for an aluminum alloy is critical for manufacturers in industries like aerospace, but equally crucial is delivering the property combination at a reasonable cost," said Dr. Ankit Saharan, senior manager of metals technology at EOS. Also interesting is that since the material can be anodized, this makes it very attractive to OEMs in areas like consumer electronics who are seeking to produce different colored products to suite customers preferences, with the added bonus of corrosion resistance."

EOS Aluminum Al5X1 for the [EOS M 290](#) will be commercially available in November 2023, followed by commercial availability for the [EOS M 400-4](#) in 2024.

About EOS

[EOS](#) provides responsible manufacturing solutions via industrial 3D printing technology to manufacturers around the world. Connecting high quality production efficiency with its pioneering innovation and sustainable practices, the independent company formed in 1989 will shape the future of manufacturing. Powered by its platform-driven digital value network of machines and a holistic portfolio of services, materials and processes, EOS is deeply committed to fulfilling its customers' needs and acting responsibly for our planet.

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