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Markforged Launches Onyx ESD for the Electronics Manufacturing Industry

The new, high-strength 3D printing material enables electronics manufacturers to improve business responsiveness by producing high-quality ESD-safe parts on demand

WATERTOWN, Mass.--(BUSINESS WIRE)-- Markforged, creator of the world's largest metal and carbon fiber industrial 3D printing platform, the Digital Forge, today announced the launch of Onyx ESD, a new high-strength composite material for the electronics manufacturing industry. The release of Onyx ESD comes amid growing demand for 3D printing materials that are not only safe for electronics manufacturing, but also produce high-quality and high-strength parts.

This year, many industries have leveraged additive manufacturing to withstand unforeseen supply chain disruptions due to COVID-19. Use of this technology for the production of electronics, however, has been limited due to a unique set of barriers. Electronics manufacturers must use materials that meet electrostatic discharge (ESD) safety requirements to avoid damaging a product or critical component during production. Previously available additive manufacturing materials have been considered low quality -- having inconsistent ESD-safe properties, inadequate dimensional accuracy, poor surface finish, or low strength. As a result, adoption of 3D printing technology by electronics manufacturers has been limited.

Now, with the launch of Onyx ESD, electronics manufacturers can unleash the power of additive manufacturing. This material is a high-performance static-dissipative version of Markforged's flagship composite base material Onyx, a micro carbon fiber-filled nylon that yields accurate parts with impeccable surface finish. Onyx ESD was developed to achieve an extremely tight surface resistance range to consistently meet strict ESD-safe requirements. The material can be reinforced with continuous carbon fiber, creating the strongest 3D printed composite parts available to the electronics manufacturing industry. When printing with Onyx ESD, electronics manufacturers can safely produce strong, accurate tools and fixtures ready for the manufacturing floor, as well as high-quality customer-ready parts.

Onyx ESD has allowed Columbia Elektronik, a Swedish electronics testing equipment manufacturer, to use Markforged's Digital Forge to seamlessly produce complex, ESD-safe testing fixtures. With Markforged, Columbia Elektronik has been able to reduce costs and free up their machinists to focus on other projects while parts are printing.

"We are seeing an increase in demand for ESD-safe parts, to keep up with the advancements of the technology in the industry," said Christer Lang, Design Engineer, Columbia Elektronik. "Markforged is filling a gap in accessing those parts with Onyx ESD, enabling us to design complex parts quickly. This material, coupled with Markforged's 3D printers, eliminates the need for time-consuming assembly – freeing up our workforce and

releasing time spent on our CNC machines. Now, with Onyx ESD, we will be able to print high-strength ESD-safe parts on demand that are customer ready."

"Manufacturers choose Markforged because our Digital Forge delivers strong, high-quality parts while significantly reducing time and cost," said Michael Papish, VP of Marketing at Markforged. "Onyx ESD opens the door for electronics manufacturers to innovate across our platform, too. The launch of the new material allows our customers, who value ESD-safe properties, to remain competitive and print best-in-class parts and tools for their customers."

Joining Markforged's wide portfolio of industrial metal and composite materials, Onyx ESD also features:

- Higher strength and stiffness than the original Onyx material
- Compatibility with Markforged's full range of continuous fiber reinforcement materials

Printing with Onyx ESD is available today on Markforged's X7, X5 and X3 printers and can be accessed by existing customers via Markforged's cloud-based software, Eiger, that enables seamless over-the-air updates of new products and features to improve hardware already in the field. For more information, please visit the Onyx ESD materials page.

About Markforged
Markforged transforms manufacturing with 3D metal and carbon fiber printers, capable of producing parts tough enough for the factory floor. Engineers, designers, and manufacturing professionals all over the world rely on Markforged metal and composite printers for tooling, fixtures, functional prototyping, and high-value end-use production. Founded in 2013 and based in Watertown, Massachusetts, Markforged has about 300 employees globally, with $137 million in both strategic and venture capital. Markforged was recently recognized by Forbes in the Next Billion-Dollar Startups list, and listed as the #2 fastest-growing hardware company in the US in the 2019 Deloitte Fast 500. To learn more about Markforged, please visit: https://markforged.com.

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