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Arconic Unveils Advanced Titanium Alloy for Higher Temperature Aerospace Applications

As next generation aero engines run hotter, ARCONIC-THOR™ delivers a lighter, more cost-effective titanium alternative to incumbent nickel-based superalloys

- Patented ARCONIC-THOR is nearly 50 percent lighter than incumbent nickel-based superalloys for higher temperature applications in aero engines and adjacent structures—driving cost savings and fuel efficiency for customers
- ARCONIC-THOR offers three times improved oxidation resistance which enables it to operate at service temperatures higher than any other conventional titanium alloy available on the market
- Company has completed successful development projects with commercial aerospace and defense customers, including a U.S. Air Force Research Laboratory project with partners Boeing and Honeywell

NEW YORK, July 16, 2018 – Arconic (NYSE: ARNC) today announced the commercial availability of an advanced titanium alloy— called ARCONIC-THOR— that is designed for higher temperature applications in next generation aero engines and adjacent structures. Patented ARCONIC-THOR is nearly 50 percent lighter than incumbent nickel-based superalloys, driving cost savings and fuel efficiency for customers and helping Arconic capture growing demand for advanced aero engine and airframe materials.

“ARCONIC-THOR is a breakthrough aerospace material that goes where conventional titanium alloys cannot,” said Jeremy Halford, President, Arconic Engineered Structures. “Next generation fuel-efficient aero engines are running hotter, presenting a materials challenge for the exhaust systems and adjacent structures. Drawing on our materials science expertise, our engineers

formulated ARCONIC-THOR—a powerful titanium solution that can take the heat and unlock significant weight and cost savings for our customers.”

Within Arconic’s patented alloy ranges, ARCONIC-THOR’s specific proprietary formulation demonstrates three times improved oxidation resistance compared to existing high temperature titanium alloys. This improved oxidation resistance protects against deterioration at elevated temperatures and enables ARCONIC-THOR to operate at service temperatures higher than any other conventional titanium alloy available on the market.

Arconic already has completed successful development projects of ARCONIC-THOR with customers. These include a U.S. Air Force Research Laboratory-funded project with aircraft manufacturer Boeing and aircraft engine manufacturer Honeywell in which we produced full-scale components from ARCONIC-THOR sheet. The joint Materials Affordability Initiative (MAI) project validated ARCONIC-THOR as a production-ready, superior oxidation resistant titanium alloy at temperatures as much as 200°F above previously available high temperature titanium alloy products with acceptable oxidation resistance. The project further concluded that ARCONIC-THOR significantly reduced weight and improved component performance.

The Society of Automotive Engineers - Aerospace Material Specification Titanium and Refractory Metals Committee (SAE-AMS) recently approved the standard Aerospace Material Specification (AMS) 6953 for ARCONIC-THOR sheet.

ARCONIC-THOR can be produced as sheet, plate, foil, billet, rolled rings, forgings and extrusions. It is formable (cold, hot, superplastic), heat treatable, forgeable and weldable.

About SAE

SAE International is a global association of more than 138,000 engineers and related technical experts in the aerospace, automotive and commercial-vehicle industries. Standards from SAE International are used to advance mobility engineering throughout the world. The SAE Technical Standards Development Program is among the organization’s primary provisions to the industries it serves. Today’s SAE standards product line includes almost 10,000 documents created through consensus standards development by more than 240 SAE Technical Committees with 450+ subcommittees and task groups. These works are authorized, revised and maintained by the volunteer efforts of more than 9,000 engineers, and other qualified professionals from around the world. The SAE Aerospace Materials Specifications database includes the more than 3,250 current standards issued by SAE’s aerospace materials committees.

About Arconic

Arconic (NYSE: ARNC) creates breakthrough products that shape industries. Working in close partnership with our customers, we solve complex engineering challenges to transform the way we fly, drive, build and power. Through the ingenuity of our people and cutting-edge advanced manufacturing techniques, we deliver these products at a quality and efficiency that ensure

customer success and shareholder value. For more information: www.arconic.com. Follow @arconic: [Twitter](#), [Instagram](#), [Facebook](#), [LinkedIn](#) and [YouTube](#).

Dissemination of Company Information

Arconic intends to make future announcements regarding Company developments and financial performance through its website on www.arconic.com.

Forward-Looking Statements

This release contains statements that relate to future events and expectations and as such constitute forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Forward-looking statements include those containing such words as "anticipates," "estimates," "expects," "may," "plans," "projects," "should," "will," "would," or other words of similar meaning. All statements that reflect Arconic's expectations, assumptions or projections about the future, other than statements of historical fact, are forward-looking statements, including, without limitation, forecasts and expectations relating to products and markets; and statements about Arconic's strategies, outlook, business and financial prospects. Forward-looking statements are not guarantees of future performance and are subject to risks, uncertainties, and changes in circumstances that are difficult to predict. Although Arconic believes that the expectations reflected in any forward-looking statements are based on reasonable assumptions, it can give no assurance that these expectations will be attained and it is possible that actual results may differ materially from those indicated by these forward-looking statements due to a variety of risks and uncertainties. Such risks and uncertainties include, but are not limited to: (a) deterioration in global economic and financial market conditions generally; (b) unfavorable changes in the markets served by Arconic, including the aerospace market; and (c) the other risk factors discussed in Arconic's Form 10-K for the year ended December 31, 2017 and other reports filed with the U.S. Securities and Exchange Commission. Arconic disclaims any obligation to update publicly any forward-looking statements, whether in response to new information, future events or otherwise, except as required by applicable law. Market projections are subject to the risks discussed above and other risks in the market.

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