



QUESTEK'S *FERRIUM*[®] C64[™] ALLOY ACHIEVES SAE AMS 6509 SPECIFICATION

*Key Aerospace Industry Specification Issued for High-Hardness, High-Strength Alloy;
Also Supports Applications in Racing, Defense, Energy, and Industrial Sectors*

EVANSTON, IL, June 5, 2012 – SAE International has issued Aerospace Material Specification 6509 for *Ferrium*[®] C64[™], a high-hardness, high-strength, high-temperature-resistant, carburizing-grade steel that was computationally designed by QuesTek Innovations LLC, and is commercially produced and sold by Latrobe Specialty Metals, a Carpenter Company, of Latrobe, PA, USA. SAE AMS 6509 covers the procurement of bars, forgings and forging stock of C64 as a double-vacuum-melted (*i.e.*, VIM/VAR) aircraft-quality alloy, defining chemistry, thermal processing, minimum properties and other material requirements.

The case of C64 can be carburized up to 62-64 Rockwell C hardness, while the core is more than 28 percent stronger (in typical properties) than conventional premium steels such as AISI 9310 or *Pyrowear*[®] 53. This combination of high case hardness and high core strength was designed to yield lighter, more durable transmissions, gears, integrally-gear shafts, actuators, parts, and assemblies that better resist bending fatigue, contact fatigue and abrasive particulate exposure. C64 may also provide much greater performance in scoring and high-temperature service (either during normal operation or emergency “oil-out” conditions) since C64’s tempering temperature of 925°F is approximately 625°F higher than that of 9310.

Applications of C64 in service or evaluation include racing, munitions, energy and aerospace products, including helicopter gears under the Future Advanced Rotorcraft Drive System (FARDS) program cooperative agreement between Bell Helicopter and the U.S. Army, and the Enhanced Rotorcraft Drive System (ERDS) program cooperative agreement between The Boeing Company and the U.S. Army.

Processes to carburize C64 are covered by SAE AMS 2759/7. QuesTek designed C64 to have high hardenability so that it can efficiently use modern, clean, low-pressure (*i.e.*, vacuum) carburizing processes with a mild gas quench to produce hardened parts with very low distortion and which require less final machining.

For more information see <http://www.sae.org/technical/standards/AMS6509>, www.questek.com/ferrium-c64.html or www.latrobesteel.com/assets/documents/datasheets/Ferrium_C64.pdf.

ABOUT QUESTEK

QuesTek Innovations LLC (www.questek.com) is a global leader in integrated computational materials engineering (ICME), serving commercial and governmental clients. QuesTek uses its proprietary *Materials by Design*[®] technology and expertise to rapidly design new materials that reduce capital, processing, operating or maintenance costs, or improve environmental protection, competitive supply or competitive advantage. QuesTek has commercially introduced four new alloys via its licensees, has more than 10 new alloys in its design and development pipeline, and has more than 30 patents awarded or pending worldwide. For more information, contact Jeff Grabowski at 1-847-425-8241 or jgrabowski@questek.com.