QUESTEK'S *FERRIUM*® M54™ ALLOY ACHIEVES SAE AMS 6516 SPECIFICATION

Key Industry Specification for Ultra-High-Strength, High-Toughness, Computationally-Designed Alloy Issued Less Than Four Years After Material Property Design Goals Established

EVANSTON, IL, August 3, 2011 – SAE International has issued Aerospace Material Specification 6516 for *Ferrium*® M54™, an ultra-high-strength, high-toughness steel designed by QuesTek Innovations LLC that is also highly resistant to Stress Corrosion Cracking (SCC). SAE AMS 6516 covers the procurement of bars, forgings and forging stock of M54 as a double-vacuum-melted (*i.e.*, VIM/VAR) aircraft-quality alloy, and defines chemistry, thermal processing, properties and other material requirements.

QuesTek designed and developed M54 to be a lower-cost, drop-in replacement for *AerMet*® 100 (AMS 6532) under Small Business Innovation Research (SBIR) Phase I and II projects sponsored by the U.S. Navy Naval Air Systems Command (NAVAIR). The rapid results of QuesTek's *Materials by Design*® approach to computationally design, develop and qualify new materials are illustrated in SAE's issuance of AMS 6516 less than 48 months after the specific material property design goals were set under the Phase I project. Under their license from QuesTek, Latrobe Specialty Steel Company began commercially producing and selling M54 less than 32 months after the material design goals were set.

The S-basis procurement minimums for M54 are: 240 ksi yield strength; 285 ksi tensile strength; and 100 ksi-√in fracture toughness. M54 has also demonstrated superior resistance to SCC than competing steels such *AerMet* 100 and 300M. For economy, M54 contains about 50 percent less cobalt than *AerMet* 100.

Applications for M54 can include aircraft landing gear, aircraft arresting tailhooks and components, power transmission driveshafts, jet engine shafts and shrouds, drilling equipment, actuators, fasteners, blast tolerant containers, ordnance, sporting goods and other demanding products.

Charlie Kuehmann, President and CEO of QuesTek, commented: "The issuance of SAE AMS 6516 represents an important industry milestone for aerospace applications of *Ferrium* M54, accelerating the adoption of M54 to reduce costs and improve performance. We thank NAVAIR for their support of M54, and thank SAE's committee and council members for their diligent efforts to issue specifications for new high-performance, engineered materials such as M54."

For more information see http://standards.sae.org/ams6516/, www.questek.com/ferrium-m54.html or www.latrobesteel.com/assets/documents/datasheets/Ferrium_M54.pdf.

ABOUT QUESTEK

QuesTek Innovations LLC (www.questek.com) is a global leader in computational materials design, serving commercial and governmental clients. QuesTek uses its proprietary *Materials by Design*® expertise to rapidly develop new materials that reduce capital, processing, operating or maintenance costs, or improve environmental protection or competitive supply. QuesTek has been highlighted in many leading business and technical publications, and has more than 30 patents awarded or pending worldwide. For more information, contact Rich Kooy at 1-847-425-8213 or rkooy@questek.com.