

LUBRICANT DEVELOPMENT AND PERFORMANCE EVALUATION

SCIENTIFIC SUPPORT SERVICES

Intertek is your lubricant product support partner, helping to:

- Accelerate your product development cycle
- Evaluate product performance
- Provide scale-up, regulatory, and post-market evaluation services



From raw material qualification to product performance evaluation and scale-up support, Intertek's advanced analytical problem-solving and breadth of testing capabilities can help get your lubricant product or additive to market faster.

Companies that produce lubricants and additives face many challenges from early product development to commercial product support.

Questions relating to raw material variability, formulation performance, product stability, process development needs, post-market support, and regulatory needs require both routine testing and advanced scientific support services.

The Challenge

Faced with creating differentiated products while maintaining costs has driven the need for sophisticated analytical testing and problem-solving throughout the product lifecycle. Maintaining the necessary expertise and test resources in-house is increasingly challenging and cost prohibitive.

Our Solutions

Intertek, a unique scientific services partner, provides expertise in methods development relating to chemicals, polymeric additives, formulated systems, product stability, tribology test evaluation, contamination identification, litigation support, and more. Using a diverse array of analytical capabilities we are a powerful partner for the lubricant industry, raw material suppliers and formulators, alike.

CASE STUDY

Metal Surface Protection

A lubricant's performance is determined by its ability to create protective films on metal surfaces with the application of pressure and heat. Correlating component chemistry and treat rates in a formulation, to changes in metal surface modulus, protective film thickness, roughness and film chemistry all guide the formulator as they seek to improve the protective properties of the lubricant package. Advanced analytical techniques such as nanoindentation, x-ray photoelectron spectroscopy (XPS), time-of-flight secondary ion mass spectrometry (ToF-SIMS) and atomic force microscopy (AFM) are used to evaluate surface chemistry and wear. Intertek's combined advanced analytical and metallurgical expertise provides an invaluable partner to those developing new lubricants.

CASE STUDY

Additive Structure/Property Development

Developing an understanding of the impact of a performance additive (antioxidant, friction modifier, detergent, dispersant, etc.) on the final lubricant efficacy requires the use of advanced analytical techniques such as nuclear magnetic resonance (NMR), size exclusion chromatography (SEC), and/or mass spectrometry (MALDI, ESI-MS, etc.) to understand subtle chemical structural differences in a pure raw material, or additive package. This expertise enables new additive development formulators and suppliers in understanding how to better engineer their products.



Customers benefit from:

- Technical consulting: Intertek scientists are multidisciplinary problem-solvers. Consulting services range from short discussions to milestone-based program planning relating to test plan development, material/chemical identification, and data interpretation services.
- Advanced analytical testing and integrated problem-solving: When presented a problem, Intertek will develop a test plan and methods development scope to investigate the issue. An integrated report then summarizes the project, providing answers as well as data.

Specific areas of expertise include:

- Raw material evaluation
- Chemical/polymer analytical analysis
- Metal surface film characterization (modulus, chemical composition, and film thickness)
- Engine residue evaluation
- Regulatory support (REACH, safety data sheet) and TSCA
- Scale-up support
- Product stability
- Reverse engineering
- Intellectual property defense

The Intertek Advantage

Intertek is a leading Total Quality Assurance provider to industries worldwide. Our network of more than 1,000 laboratories and offices and over 42,000 people in more than 100 countries delivers innovative and bespoke Assurance, Testing, Inspection and Certification solutions for our customers' operations and supply chains. Intertek Total Quality Assurance expertise, delivered consistently with precision, pace and passion, enables our customers to power ahead safely.

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