Thursday, October 23, 9:55 am • Testing Expo Open Technology Forum Stage • Presenter: Dr. Stephen Miller

ABSTRACT

Improving results of engine emissions testing while avoiding downtime and regulatory noncompliance: Accuracy counts!

Rising manufacturing costs and other economic factors are changing how many companies in the automotive industry approach engine emissions testing. Smart companies are beginning to regard the specialty gases needed to calibrate test instrumentation to be less of a cost of doing business and more of an *investment*— in greater productivity and a healthier bottom line. As a supplier to the EPA Automotive Emissions Test Laboratory and also as the sole source provider of gaseous Standard Reference Material (SRM) candidates to NIST, Team SCOTT™ at Air Liquide is uniquely qualified to present a dollarized added-value approach to engine emissions analysis.

Major players within the automotive industry, as well as manufacturers of gasoline and diesel engines in other industries, are learning that the true value of a cylinder of calibration gas cannot be measured in terms of the cost of the gas itself. With the cost of test bench operations averaging $1,500/hour, and labor at $60/hour, downtime can be hugely expensive. One company recently lost over $90,000 when three test cells were down for almost 20 hours due to a single cylinder of a bad NO_X mixture. Considering legislative and social pressures to improve Earth's atmosphere and stop global warming, the cost of a recall because engines do not comply with EPA or state mandates could easily tally into the tens if not hundreds of millions of dollars.

Contributing factors to bad gas and subsequent downtime include: 1) Pure gas impurity levels that may be higher than acknowledged on a cylinder's tag; 2) A mixture whose tag value misrepresents the accuracy because it was inaccurately analyzed during preparation; 3) Failure to use mixtures that were not prepared using NIST reference standards; 4) Use of an analyzer that has been damaged by contaminated gas. Additional factors that can lead to a recall or fines for regulatory violations include: 5) Using a calibration gas that has exceeded its expiration date; 6) Inability to present a cylinder's Certificate of Accuracy during an audit.

Air Liquide maintains a unique engine emissions testing offering designed to eliminate all six contingencies that directly affect productivity. Pure gases and SCOTT brand mixed gases feature performance that is becoming an industry benchmark for value in engine emissions testing. Guaranteed low impurity levels, precision mixture accuracy and cylinder-to-cylinder repeatability protect sensitivity of expensive analyzers while improving analysis reliability. Online certificates streamline recordkeeping and provide 24/7 product validation. Online ordering reduces administrative costs while automatic cylinder expiration alerts minimize the likelihood of accidentally calibrating instruments with expired gases.

As the world's largest producer of EPA protocol gases, Air Liquide maintains 39 facilities throughout North America and serves the automotive industry primarily from its ISO/IEC 17025 accredited facility located in Troy, Michigan. Specialty gases for calibrating all analyzers and detectors used in engine emissions testing are available. Gas handling equipment and custom distribution systems that protect gas purity and integrity are also a specialty.

AIR LIQUIDE™
SPECIALTY GASES
Molecules that Matter™

1315PDF