Press Release

Analysis of Sulfur in Automotive Fuels by ASTM D2622-10 using the Rigaku Mini-Z Sulfur WDXRF

The Woodlands, TX – February 28, 2013. Rigaku Corporation today announced the publication of a new application report describing the analysis of low concentration sulfur in automotive fuels using wavelength dispersive X-ray fluorescence (WDXRF) spectrometry. Rigaku Application Note #XRF 5035 adheres to the American Society for Testing and Materials method ASTM D2622-10 ("Standard Test Method for Sulfur in Petroleum Products by Wavelength Dispersive X-ray Fluorescence Spectrometry") and highlights the capabilities of the Rigaku Mini-Z Sulfur analyzer.

Recent developments in ultra-low sulfur diesel (ULSD) fuel have improved fuel efficiency and created cleaner emissions. The allowable limit of sulfur in fuel oils has been reduced by as much as 15 ppm in many countries, with the likelihood of further restrictions still to come.

Rigaku Mini-Z Wavelength dispersive X-ray fluorescence sulfur (S) analyzer

For compliance verification, X-ray fluorescence (XRF) spectrometry is the preferred analysis tool for use at distribution terminals, as well as at mobile or stationary testing laboratories. Application Note #XRF 5035 details sample preparation, method calibration and repeatability. For the analysis described in the report, 4 ml of each sample was poured into a special liquid cell with a 2.5 µm Mylar® analysis film. "Number 2 diesel fuel" standards and isooctane-based standards were used for calibration for diesel fuel and gasoline respectively.

Measurements were carried out using the Mini-Z Sulfur analyzer, a benchtop single fixed-channel WDXRF spectrometer designed to minimize installation requirements such as cooling water, power supply and floor space. It has a built-in control panel designed for easy operation. The Mini-Z Sulfur analyzer is equipped with an air-cooled 40 W Cr-target X-ray tube. The RX-9 analyzing crystal is optimized for sulfur analysis.

The results show that low concentration sulfur in petroleum-based fuel can be routinely analyzed with high precision using the Mini-Z Sulfur analyzer, meeting the requirement of the current ASTM D2622-10 method.

A copy of this application report may be requested on Rigaku's official website at http://www.rigaku.com/products/xrf/minizsulfur/app5035

About Rigaku

Since its inception in Japan in 1951, Rigaku has been at the forefront of analytical and industrial instrumentation technology. Rigaku and its subsidiaries form a global group focused on general-purpose analytical instrumentation and the life sciences. With hundreds of major innovations to their credit, Rigaku companies are world leaders in X-ray spectrometry, diffraction, and optics, as well as small molecule and protein crystallography and semiconductor metrology. Today, Rigaku employs over 1,100 people in the manufacturing and support of its analytical equipment, which is used in more than 70 countries around the world supporting research, development, and quality assurance activities. Throughout the world, Rigaku continuously promotes partnerships, dialog, and innovation within the global scientific and industrial communities.

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