

Press Release

Lubricating Oils and Ultra Low Sulfur Diesel — New EDXRF Application Reports

Austin, TX – October 17, 2010. Applied Rigaku Technologies, Inc. is pleased to publish three new application reports for the petroleum market that feature the capabilities of the advanced Rigaku NEX CG EDXRF with Cartesian Geometry. Application Notes #1003 and #1025 show performance for the elemental analysis of P, S, Ca, Zn, Mg, Ba, Cu and Cl in a typical lubricating oil formulation using respective empirical and fundamental parameters (FP) calibration methods. Application Note #1024 details performance for the measurement of sulfur in ULSD (ultra-low sulfur diesel) by ASTM D7220. In both reports, calibration summaries and typical detection limits are presented, and instrument repeatability is demonstrated.

Lubricating oils are used in on-road and off-road engines, as well as in the lubrication of mechanical machinery. Lube oils are formulated specifically for each type of use. Various additives are formulated in base lube oil to enhance lube oil performance and create the optimum lubricity properties desired for each situation. Proper and safe operation of engines and machinery depends to a large degree on the quality and formulation of the lube oil. Therefore, quality control and quality assurance during the lube oil manufacturing process is essential. A fast, simple method of analyzing lube oils is important throughout the QC/QA process. The analytical technique must be simple enough for use by non-technical operators, yet powerful enough for expert use in the research & development of new lube oil formulations.

Regulations around the world have limited the amount of sulfur in various fuels oils with particular attention to diesel fuel. For many years road diesel has been limited to a maximum sulfur concentration between 10-15 ppm, depending on the region. Now these limits are expanded to all diesel fuel, including use in large engines and off-road diesel engines. In many regions ULSD is also mandated for back-up electricity generation in coal-fired power plants and nuclear power plants. Regulations limiting sulfur concentration affects all levels of the petroleum industry, from the price of crude oil, to blending and refining, pipelines, transportation and storage, the refinery level and as fuel is delivered to the pump. A fast, reliable method of sulfur concentration all throughout the petroleum industry is of vital importance.

A copy of these reports may be requested at: <http://www.rigakuedxrf.com/edxrf/app-notes.html>

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 life sciences and general purpose analytical instrumentation. With hundreds of major innovations to its credit, Rigaku and its subsidiary companies are world leaders in the fields of small molecule and protein crystallography, X-ray spectrometry and diffraction, X-ray optics, as well as semiconductor metrology. Rigaku employs over 1,100 people globally and its products are in use in more than 70 countries – supporting research, development, production control and quality assurance activities. Throughout the world, Rigaku continuously promotes partnerships, dialog, and innovation within the global scientific and industrial community.

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