

Press Release

Rigaku Publishes Method for Analysis of Chromium Coating on Aluminum

Austin, TX— July 26, 2016. [Applied Rigaku Technologies, Inc.](#) has published a new application report detailing the measurement of chromium (Cr) conversion coating on aluminum.

Rigaku Application Note #1605 describes a method using energy dispersive X-ray fluorescence (EDXRF) for the measurement of chromium conversion coating, and demonstrates the effectiveness and utility of the [Rigaku NEX QC](#) benchtop EDXRF analyzer in the quality control (QC) process during the production of coated product.

Aluminum and steel are often coated with a protective conversion coating to provide resistance to oxidation and corrosion of the base metal. Chromium is commonly used for such coatings, and the use of chromated aluminum covers a wide range of applications, including use in aircraft parts, window frames and other applications where the aluminum can be exposed to weathering.

The method described in the report employs EDXRF spectrometry as an affordable means of optimizing quality while minimizing costs and reducing waste. Information regarding sample preparation, calibration and repeatability is presented in the application note.

For the analysis detailed in the report, a test coupon is placed flat in the analysis chamber with the coated side facing down towards the X-ray beam. An empirical calibration was built using a set of standards assayed by a careful weigh-strip-weigh process. The bare, uncoated aluminum sample was measured to generate a special background correction. To demonstrate precision, the low and high calibration standards were each measured in static position for ten repeat analyses.

Measurements were performed using the Rigaku NEX QC low-cost EDXRF analyzer. The results shown in the report demonstrate that the instrument provides excellent sensitivity and performance for the measurement of chromium conversion coatings on aluminum.

A copy of this report may be requested at:
http://www.rigakuedxrf.com/edxrf/app-notes.html?id=1605_AppNote

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 1,400 people globally and its products are in use in more than 70 countries – supporting research, development, and production control and quality assurance activities. Throughout the world, Rigaku continuously promotes partnerships, dialog, and innovation within the global scientific and industrial community.

For further information, contact:
Scott Fess
Product Manager
Applied Rigaku Technologies, Inc.
tel: +1. 512-225-1796
info@RigakuEDXRF.com

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*The Rigaku NEX QC
benchtop EDXRF analyzer*