

## Press Release

# Rigaku publishes method for measurement of lead in lead-free solder

*A new application report from Rigaku demonstrates the analysis of lead in solder by rapid XRF screening for RoHS, WEEE and ELV directives.*

**Austin, TX— June 8, 2017.** [Applied Rigaku Technologies, Inc.](#) today announced a new empirical method for the analysis of lead (Pb) in lead-free solder by rapid X-ray fluorescence (XRF) screening. The method adheres to the Restriction of Hazardous Substances ([RoHS](#)), Waste Electrical and Electronic Equipment (WEEE) and End of Life Vehicles ([ELV](#)) Directives.

Rigaku Application Note #1550 describes a method employing energy dispersive X-ray fluorescence (EDXRF) for the measurement of lead in lead-free solder, and highlights the performance of the [Rigaku NEX DE VS](#) variable spot EDXRF analyzer.

Lead content is controlled in most solder applications according to regulations that limit the maximum allowable lead in solder to no greater than 0.1000% (1000 ppm). EDXRF is an accepted analysis technique for rapid screening to ensure that lead is below allowable limits.



**Rigaku NEX DE VS Variable Spot  
Energy Dispersive X-ray  
Fluorescence Spectrometer**

The analysis described in the report was carried out using the Rigaku NEX DE VS variable spot EDXRF spectrometer, the newest addition to the Rigaku NEX DE series of high-performance, direct excitation EDXRF elemental analyzers. The combination of a 60 kV X-ray tube, high-throughput Silicon Drift Detector (SDD) detector and special tube filters gives the analyzer exceptional sensitivity for lead, along with other middle and heavy elements.

The NEX DE VS system offers a camera view and automatic small spot collimators, enabling rapid screening to ensure regulatory compliance. For this application, solder joints on two loaded printed circuit boards (PCB) were tested using the analyzer's 1 mm collimator. When testing solder joints on circuit boards

and other small samples such as wires and cables, the camera view can be used to position the spot of interest and adjust the spot size.

The results detailed in the report show that the NEX DE VS system provides exceptional sensitivity and reliable precision for rapid screening by XRF for compliance with RoHS, WEE and ELV initiatives.

A copy of this report may be requested at:

[https://www.rigakuedxrf.com/app-notes.php?id=1550\\_AppNote](https://www.rigakuedxrf.com/app-notes.php?id=1550_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 90 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.

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