

Press Release

A New Application Report from Rigaku Describes Elemental Analysis of Aerosols in Air Filters by EDXRF

Austin, TX – February 4, 2016. [Applied Rigaku Technologies, Inc.](#) today announced a new method for the measurement of metals, particularly toxic heavy metals, in aerosols on air filters by using energy dispersive X-ray fluorescence (EDXRF). Rigaku EDXRF Application Note 1549 presents a simple linear empirical calibration and demonstrates the performance of the [Rigaku NEX DE](#) EDXRF spectrometer.

When inhaled in high concentrations, particulate heavy metals can precipitate severe toxic and carcinogenic effects in humans. Elemental analysis of aerosols and particulate matter released as industrial gas discharge from smokestacks and other outlets is essential for ensuring that environmentally unacceptable levels of toxic and hazardous elements are not improperly released into the air. Monitoring smoke and other gaseous waste is key in many areas, including industrial manufacturing, power plants, and chemical and plastics production. Such analyses are used to reduce air pollution and minimize the release of toxic metals, thereby ensuring compliance with US EPA and other world, regional and local governing regulations.

For the analysis detailed in this report, measurements were performed with the NEX DE EDXRF analyzer with 60 kV excitation source and high resolution and throughput Silicone Drift Detector. Air filter samples prepared from nucleopore polycarbonate aerosol membrane were laid flat in a 10- position autosampler covering the analysis aperture. Each calibration standard was measured in 10 repeat analyses using a total analysis time of 1200 seconds. Measurement conditions may be varied depending on overall composition of the filter loadings.

The results show the NEX DE analyzer to be an ideal tool for screening and monitoring particulate aerosol filters and for helping to ensure industrial processes are environmentally sound and comply with regulations, thereby giving the analysts and technician alike a fast, simple, yet powerful means for monitoring elemental analysis of air filters. The NEX DE analyzer also can serve as a versatile tool for elemental analysis of solids, powders and liquids.

A copy of this application report may be requested on Rigaku's EDXRF website.

<http://www.rigakuedxrf.com/edxrf/app-notes.html?id=1549> 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 1,100 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.

For further information, contact:

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



**Rigaku NEX DE - Energy
Dispersive X-ray Fluorescence
Spectrometer**