

**EVALUATION OF X-RAY FLUORESCENCE SPECTROMETERS FOR  
POSSIBLE IMPLEMENTATION IN A MANUFACTURING LABORATORY –  
METALS IN ALUMINA**

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X-ray fluorescence (XRF) spectrometry is often used in manufacturing laboratories to monitor elemental composition of materials for process and quality control. There are many types of wavelength and energy dispersive XRF spectrometers available for these types of applications including hand-held, bench-top, on-line and fully equipped floor models. This paper will describe the results of a three vendor application study that was done to assist in the selection of an XRF spectrometer that would be implemented in a manufacturing laboratory for determination of metals in alumina. The Bruker S4 Explorer, PANalytical Mini-Pal 4 and Rigaku ZSX Mini II spectrometers were evaluated in this study. The performance of the spectrometers will be compared for quality of the fit of the standard calibration, precision, accuracy and detection limit. Other factors considered important for installation in a manufacturing lab will also be discussed.