

XRF Analysis Overview

Foresite now has the capability to analyze lead free processed assemblies for RoHS directive compliance utilizing XRF (X-ray Fluorescence) analysis. Utilizing a Fischerscope XRF XDAL system, Foresite can examine assemblies with 0.2 mm focal distance. This system is capable of performing both quantitative elemental analysis and thickness measurements in an integrated fashion. It is able to examine each component on an assembly individually through a small spot analysis method. Looking at each layer individually, our XRF XDAL system is able to provide a meaningful and accurate measure of the RoHS compliancy of a product.



System Specifications

- X-ray tube with adjustable high voltage: 10; 30; 50kV
- Measures in element range Z=13 (Al) to Z=92 (U)
- Large, high energy resolution & programmable XYZ-stage
- Interior Dimensions: 460 mm W; 500 mm D; 146 mm H
- Four Collimators
- 0.2mm minimum size of measuring spot
- 0-20mm usable focal range
- Autofocusing
- Video microscope with up to 184x magnification

Applications of XRF Analysis

- Quantitative analysis of solid, powder or paste-like materials as well as liquids
- Thickness & element composition measurements of individual coatings in coating systems with up to 24 different elements
- Substrate materials analysis through coating systems

Advantages of XRF Analysis

- Non-destructive analysis method
- Analyzes small solder joints
- Focal distance of .2mm spot analysis
- Able to differentiate layer thickness
- With known stack-up structure, we are able to program system to examine each layer
- Automated system to look at one joint of every component to ensure RoHS compliance
- System designed to exclude interval leaded constituents and does not include the interfacial aspects of the components, but only the external solder surfaces, joint and board layers

Follow-up verification

If you would prefer to verify the results of XRF analysis, Foresite can provide cross sectional or SEM / EDX analysis (*note: cross sectioning & SEM / EDX are destructional testing methods).