

Key Word: ED-XRF, SEM-EDS, Foreign Substance Analysis

Test /Analysis of Foreign Substances on Resin surface by X-ray analysis

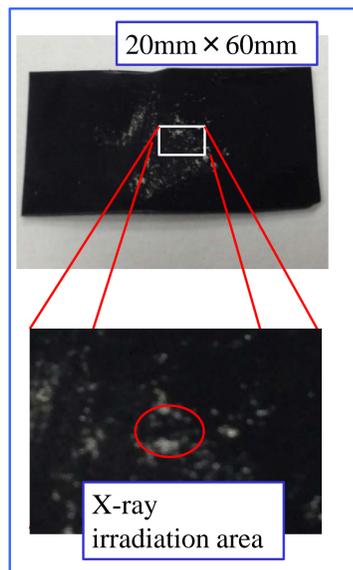
● Introduction

Analysis of contaminants contained in or adhered to products can provide important information about the route by which the foreign substance is introduced or source of failure.

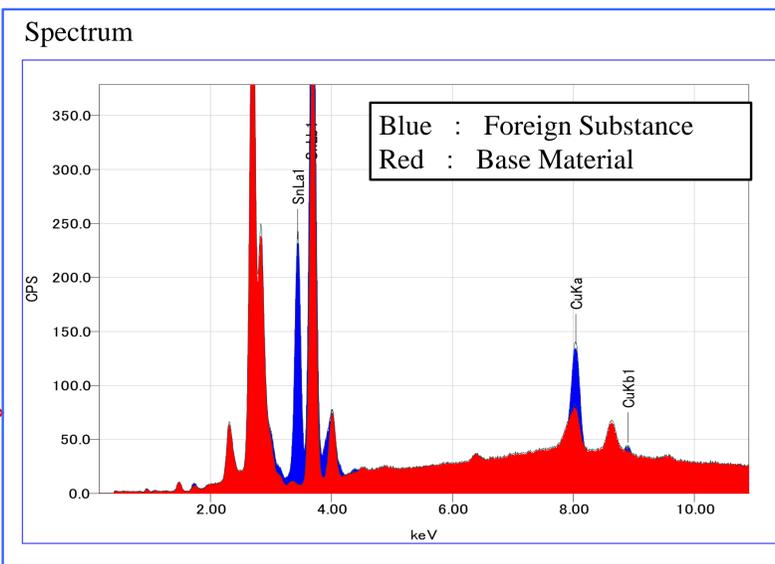
As X-ray fluorescence spectrometer (**ED-XRF**) can provide fast, non-destructive elemental analysis on any sample type, such as solid, liquid and powder, it can be utilized as an instrument for screening.

● ED-XRF

Sample



Analysis



Measurement Condition

Tube Voltage : 50kV
Tube Current : Automatic
Collimator : 2mmφ
Atmosphere : Vacuum
Measurement time : 30sec

FP Method Analysis Result

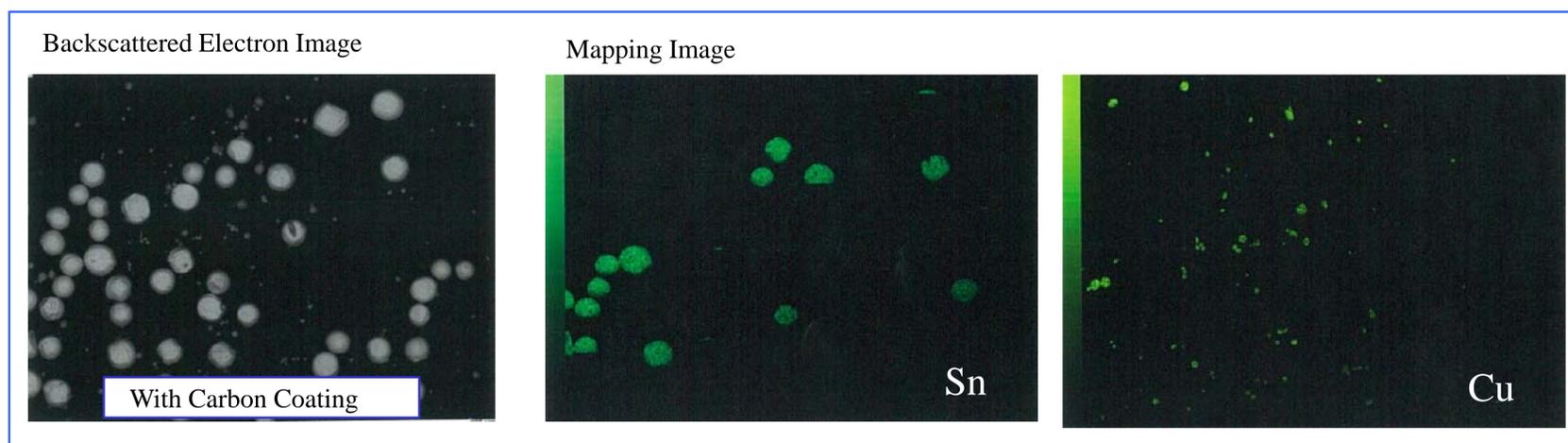
Element	Result
Cu	32.92
Sn	67.08

Unit : mass%

From the elemental analysis result, the existence of Sn and Cu can be confirmed. However, there is no steel grade which corresponds to the results obtained by easy quantitative analysis with the FP method. To make a detailed analysis of this steel grade, we conducted EDS elemental mapping by SEM-EDS.

● SEM-EDS

Analysis



The existence of two different particles can be confirmed from backscattered electron image of **SEM-EDS**. Using EDS mapping image of each particle it was found out that smaller particles were Cu, and the larger particles were Sn.

● Summary

ED-XRF can provide information on element content easily and in a short time, and it is helpful in identifying foreign substances. In case of an alloy of more than two elements like this, elemental mapping by **SEM-EDS** is a useful analysis method.

Frequent use of X-ray analysis can provide information about element types, adhesion state of foreign substances and is helpful in identifying the source of foreign substances.

Access the QR codes below for more information on the EDXRF

◆ Overview →



◆ Mechanisms →



JEOL

<http://www.jeol.co.jp/en>