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STA-2

SOLDER IMPURITY TESTER

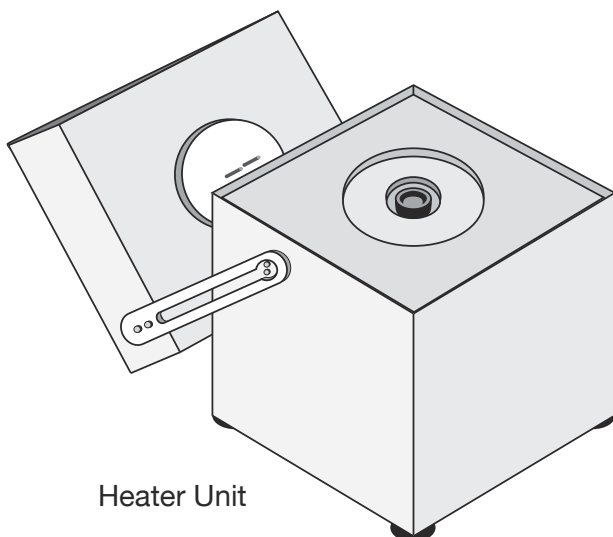
Measuring Principal

A sample heating curve is obtained by heating solder of a fixed quantity at a fixed heating rate, and a change from the first input solder composition is analyzed from the factors appearing in the curve in FIGURE 1.

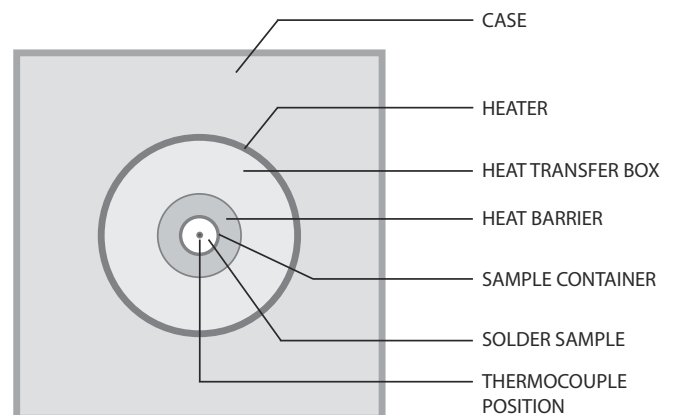
These elements are different from normal melting start temperature and solidification start temperature due to the influences of the sample quantity, heating rate, sensor sensitivity, and other factors, but the concept is the same. Since the instrument is used on-site, the heating speed is designed to be high for short-time measurement in large quantities (to a certain extent), and the sensor is designed to be durable at the sacrifice of its sensitivity.

The solidification start temperature is normally obtained from a cooling curve, but we obtain it from a heating curve. It is also presumable that the primary phase solution cannot be picked up.

A temperature sensor is mounted at the center of the sample pot. The most characteristic elements are selected and judged. The solidification of a low melting point substance occurs at the center sensor.



Heater Unit



Top View of Heater Unit

Special Features:

- On-site easy measurement of lead and copper content.
- Fast measuring time.
- Small sample measurement.
- Cost efficient
- Data analysis software included.

Pb Measurement

Range: 0–0.2%
Accuracy: +/- 0.015%

Cu Measurement

Range: 0.3–0.9%
Accuracy: +/- 0.1%

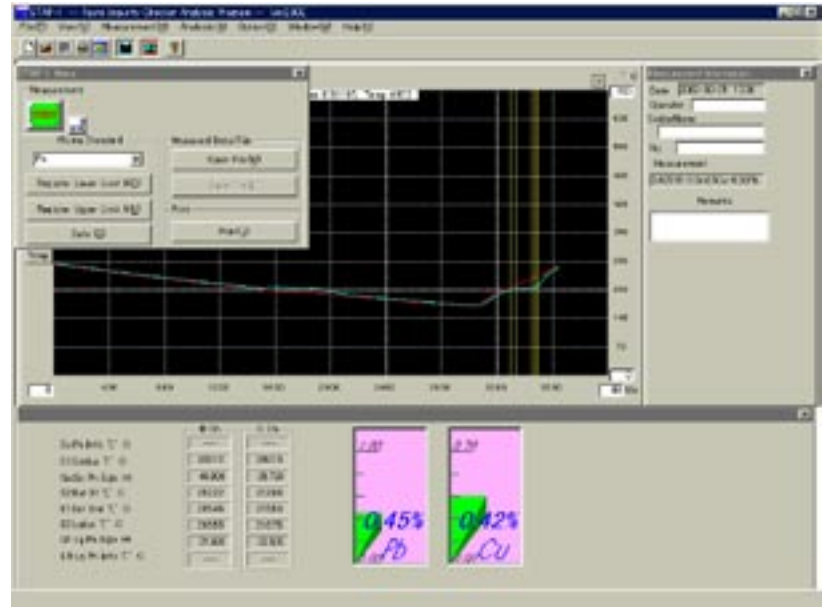


FIGURE 1

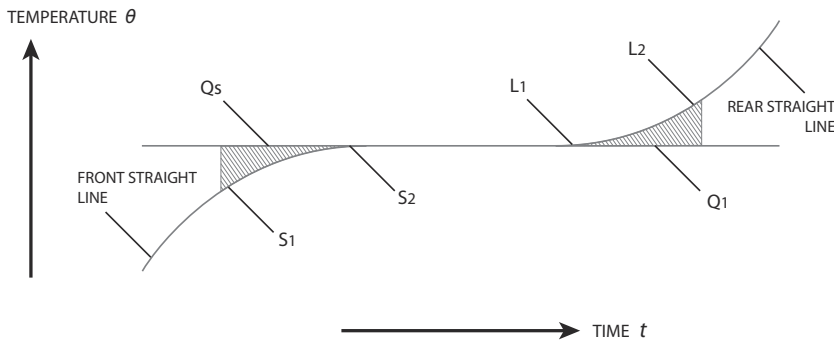
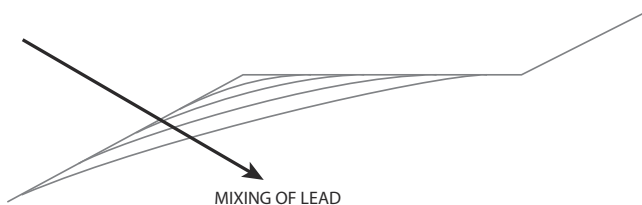


FIGURE 2



Elements To Be Obtained

- S1 : Solid phase equilibrium temperature
- Qs : Solid phase equilibrium heat
- S2 : Eutectic start point temperature
- L1 : Eutectic end point temperature
- Q1 : Liquid phase equilibrium heat
- L2 : Liquid phase equilibrium temperature

Lead Measuring Device

A lead measuring device has been made by taking notice of only the mixing of lead. Based on the result of the experiment,

The lead mixture derives the curve (FIGURE 2). With this, It is possible to make measuring instruments for the observation of a change in mixing copper and silver.

The materials employed as samples in the measuring examples were produced in small quantities by a solder maker according to our request. Data was prepared by cutting a small sample section from these materials in a solid condition.