

ICS 77.120.60

CCS H13



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 10574.13-2017

Replacing GB/T 10574.13-2003

**Methods for chemical analysis of tin-lead solders - Part 13: Determination of
antimony, bismuth, iron, arsenic, copper, silver, zinc, aluminium, cadmium, phosphorous and
gold contents - Inductively coupled plasma atomic emission spectrometric method**

锡铅焊料化学分析方法 第13部分：锑、铋、铁、砷、铜、银、锌、铝、镉、磷和
金量的测定 电感耦合等离子体原子发射光谱法

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Quarantine of the People's Republic of China;
Standardization Administration of China**

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- 5.00 Zn 0.0010 to

Foreword

GB/T 10574 "tin-lead solder chemical analysis method" is divided into 14 parts.

- Part 1. Determination of tin content potassium iodate titration;
- Part 2. Determination of the amount of antimony Malachite green spectrophotometry and potassium bromate titration;
- Part 3. Determination of bismuth content by flame atomic absorption spectrometry;
- Part 4. Determination of iron content 1,10-phenanthroline spectrophotometry;
- Part 5. Determination of arsenic; Arsenic antimony molybdenum blue spectrophotometry;
- Part 6. Determination of copper content by flame atomic absorption spectrometry;
- Part 7. Determination of silver content flame atomic absorption spectrometry and potassium thiocyanate potentiometric titration;
- Part 8. Determination of zinc content by flame atomic absorption spectrometry;
- Part 9. Determination of aluminum content by electrothermal atomic absorption spectrometry;
- Part 10. Determination of cadmium content Flame Atomic Absorption Spectrometry and Na₂ EDTA titration;
- Part 11. Determination of phosphorus content crystal violet - vanadium molybdovanadophosphoric acid spectrophotometry;
- Part 12. Determination of sulfur content; high frequency combustion infrared absorption spectrometry;

--- Part 13. Determination of antimony, bismuth, iron, arsenic, copper, silver, zinc, aluminum, cadmium, phosphorus and gold content Inductively coupled plasma atomic emission Spectrum method

1 Scope

GB/T 10574.13-2017 is the Chinese national standard on methods for chemical analysis of tin-lead solders - part 13: determination of antimony, bismuth, iron, arsenic, copper, silver, zinc, aluminium, cadmium, phosphorous and gold contents - inductively coupled plasma atomic emission spectrometric method, in the field of metallurgy. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 14 October 2017 by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China; Standardization Administration of China, and has been in force since 1 May 2018. Classification: ICS 77.120.60, CCS H13. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

GB/T 10574 provisions of this part of the tin-lead solder antimony, bismuth, iron, arsenic, copper, silver, zinc, aluminum, cadmium, phosphorus and gold determination. This section applies to tin-lead solder antimony, bismuth, iron, arsenic, copper, silver, zinc, aluminum, cadmium, phosphorus and gold determination. The measurement range is shown in Table 1. Table 1 measurement range Element Measurement Range w /% Element Measurement Range w /% Sb

0.10 to

1.00 Bi 0.0040 ~

0.50 Al 0.0010 ~

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version applies to this article Pieces. For undated references, the latest edition (including all amendments) applies to this document.

GB/T 8012 cast tin-lead solder

3 Method summary

The sample was dissolved in hydrochloric acid and nitric acid or hydrochloric acid and hydrogen peroxide. In dilute acid medium, inductively coupled plasma atomic emission spectrometry The emission intensity was measured at the wavelength selected by each element, and the mass fraction of each element was calculated according to the standard working curve.

4 Reagent

Unless otherwise specified, only reagents that are identified as superior grade pure are used in the analysis; the water used is distilled or deionized water or equivalent Water.

4.2 Nitric acid ($\rho =$

4.3 Hydrogen peroxide (30%).