Chinastandards.org

ICS 77.120.60
CCS H13

NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

chinastandards.org - PREVIEW

GB/T 10574.8-2017

Replacing GB/T 10574.8-2003

Methods for chemical analysis of tin-lead solders - Part 8: Determination of zinc content - Flame atomic absorption spectrometric method

锡铅焊料化学分析方法 第8部分：锌量的测定 火焰原子吸收光谱法

Issued on: October 14, 2017 **Implemented on: May 1, 2018**

Issued by: General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China;
Standardization Administration of China

Preview: page 1 of 4 shown, 8 in the full document. Complete English PDF, instant download:
https://chinastandards.org/standards/gb-t-10574-8-2017

Table of Contents

chinastandards.org · PREVIEW

Foreword

GB/T 10574 "Chemical analysis method for tin-lead solders" is divided into 14 parts.

--- Part 1. Determination of tin content Potassium iodate titration;

--- Part 2. Determination of barium content - Malachite green spectrophotometric method and potassium bromate titration method;

--- Part 3. Determination of helium content by flame atomic absorption spectrometry;

--- Part 4. Determination of iron content 1,10-Phenanthroline spectrophotometric method; Part 5 . Determination of arsenic content ; Arsenic molybdenum blue spectrophotometric method ;

--- Part 6 . Determination of copper content 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 Flame atomic absorption spectrometric method;

--- Part 9 . Determination of aluminium content by electrothermal atomic absorption spectrometry ; Part 10 . Determination of cadmium content Flame atomic absorption spectrometry and Na2EDTA titration ; Part 11 . Determination of phosphorus content Crystal violet - phosphorus vanadium molybdenum heteropolyacid spectrophotometric method ;

--- Part 12. Determination of sulfur content - High-frequency combustion infrared absorption spectrometry;

---Part 13. Determination of the amounts of ruthenium, rhodium, iron, arsenic, copper, silver, zinc, aluminum, cadmium, phosphorus, and gold Inductively coupled plasma atomic

Preview: page 2 of 4 shown, 8 in the full document. Complete English PDF, instant download:
https://chinastandards.org/standards/gb-t-10574-8-2017

emission Spectral method;

---Part 14. Determination of tin, lead, antimony, bismuth, silver, copper, zinc, cadmium, and arsenic - Photoelectric emission spectroscopy. This part is part 8 of GB/T 10574. This section was drafted in accordance with the rules given in GB/T 1.1-2009. This part is an amendment to GB/T 10574.8-2003 "Determination of zinc in chemical analysis methods for tin-lead solders." Compared with GB/T 10574.8-2003, the main technical changes are as follows:

--- Increased reference standards;

--- The lower limit of measurement was revised from 0.00003% to 0.00025%;

Chinastandards.org · PREVIEW

1 Scope

GB/T 10574.8-2017 is the Chinese national standard on methods for chemical analysis of tin-lead solders - part 8: determination of zinc content - flame atomic absorption 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.

This part of GB/T 10574 specifies the method for the determination of zinc in tin-lead solders. This section applies to the determination of zinc in tin-lead solder. The measurement range is 0.00025% to 0.0050%. This section is an arbitration analysis method.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only dated versions apply to this article Pieces. For undated references, the latest version (including all amendments) applies to this document.

GB/T 8012 cast tin-lead solder

3 Method summary

The sample was dissolved with hydrobromic acid, hydrochloric acid, and hydrogen peroxide. The hydrochloric acid-hydrobromic acid volatilized to remove tin and bismuth. In a

Preview: page 3 of 4 shown, 8 in the full document. Complete English PDF, instant download:
https://chinastandards.org/standards/gb-t-10574-8-2017

dilute hydrochloric acid-hydrobromic acid medium, The absorbance of zinc was measured with an air-acetylene flame at an atomic absorption spectrometer wavelength of 213.9 nm.

4 Reagents

Unless otherwise stated, only reagents identified as superior grade and first grade water were used in the analysis.

4.2 Hydrochloric acid (rho=

4.3 Hydrochloric acid (5 95).

4.4 Hydrogen peroxide (1 2), analytically pure.

4.5 Zinc standard storage solution. Weigh 0.1250g of metal zinc (wZn>=99.99%) into a.200mL PTFE beaker. 8.0mL of hydrobromic acid (4.1), 12.0mL of hydrochloric acid (4.2), heated to complete dissolution at low temperature, cooled to room temperature, transferred to a 500mL volumetric flask, Dilute with water to the mark and mix. 1mL of this solution contains 250μg of zinc.

4.6 zinc standard solution. Pipette 5.00mL zinc standard stock solution (4.5) in 500mL volumetric flask, add 2.0mL hydrobromic acid (4.1),

4.0 mL of hydrochloric acid (4.2), dilute with water to the mark and mix. 1mL of this solution contains 2.5μg of zinc.

5 Instruments

Atomic absorption spectrometer with zinc hollow cathode lamp. Under the best working conditions of the instrument, anyone who can achieve the following indicators can be used. Sensitivity. The characteristic concentration of zinc should not be greater than 0.008 μg/mL.

chinastandards.org · PREVIEW

Preview: page 4 of 4 shown, 8 in the full document. Complete English PDF, instant download:
https://chinastandards.org/standards/gb-t-10574-8-2017