



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

GB/T 41104.2-2021

**Solder wire, solid and flux cored - Specification and test
methods - Part 2: Determination of flux content**

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foreword

This document is in accordance with the provisions of GB/T 1:1-2020 "Guidelines for Standardization Work Part 1: Structure and Drafting Rules of Standardization Documents" drafted:

This document is part 2 of GB/T 41104 "Specification and Test Methods for Solid and Flux-cored Solder Wires", GB/T 41104 has been issued

The following parts are distributed:

- Part 1: Classification and performance requirements;
- Part 2: Determination of flux content;
- Part 3: Wetting balance test method for the efficacy of flux-cored solder wire:

This document is modified to adopt ISO 12224-2:1997 "Specification and test methods for solid and flux-cored solder wires - Part 2: Flux content measurement":

Compared with ISO 12224-2:1997, this document has many structural adjustments: Appendix A lists this document and ISO 12224-2:1997:

The chapter number comparison list:

The technical differences between this document and ISO 12224-2:1997 and their reasons are as follows:

--- Added Chapter 2 "Normative Reference Documents" to adapt to the technical conditions of our country, and the specific adjustments are as follows:

* Added reference to GB/T 687 (see 5:8);

* Added references to GB/T 3131 and GB/T 20422 (see 5:6):

--- Added "5:6 Soldering Solder Bath" containing solder that meets the requirements of GB/T 20422 to adapt to our technical conditions (see 5:6):

The following editorial changes have been made to this document:

--- In formula (1) in Chapter 7, calculate the flux content in the flux-cored solder wire sample, expressed as "w" (mass fraction);

--- Deleted informative Appendix A:

Please note that some content of this document may be patented: The issuing agency of this document assumes no responsibility for identifying patents:

Introduction

Solid and flux-cored solder wires are used as the base material in the soldering process and have a decisive influence on the quality of soldered joints:

The strong foundation project being implemented in my country, the national science and technology major project "core electronic devices, high-end general-purpose chips and basic software products" and

The core electronic devices, high-end chips and integrated circuit complete sets of technology in the "Special Project on VLSI Manufacturing Equipment and Complete Sets of Technology"

In the research and development of technology, solid and flux-cored solder wires are the key basic materials, and the formulation of standards for their products and test methods is of great significance:

Since:2001, my country has successively promulgated and implemented "Tin-Lead Soldering Materials", "Lead-Free Soldering Materials", "Solder Flux Classification and Performance Requirements" and "Solder Soldering Materials":

Solid and flux-cored solder wire, as an important product in solder, has a high impact on the environment and the reliability of solder joints:

Performance and application are critical: GB/T 41104 "Specification and test methods for solid and flux-cored solder wires" is a general product for solder wires:

The standard for products and test methods is intended to consist of the following parts:

--- Part 1: Classification and performance requirements;

--- Part 2: Determination of flux content;

--- Part 3: Wetting balance test method for the efficacy of flux-cored solder wire:

This document serves as the standard for test methods for solid and flux-cored solder wires and specifies two methods for the determination of flux content:

With the advantages of simple operation, strong applicability, accurate and reliable results, etc., it has become an important detection method in flux-cored solder wire products:

Specification and test methods for solid and flux cored solder wires

Part 2: Determination of flux content

1 Scope

This document specifies two methods for the determination of flux content in flux-cored solder wires, including principles, instruments and materials, test procedures, and test numbers:

Data processing, test reports, etc:

This document is applicable to flux-cored solder wires of tin-lead solder alloys and lead-free solder alloys:

2 Normative references

The contents of the following documents constitute essential provisions of this document through normative references in the text: Among them, dated citations

documents, only the version corresponding to that date applies to this document; for undated references, the latest edition (including all amendments) applies to this document:

GB/T 687 Chemical Reagent Glycerol (GB/T 687-2011, ISO 6353-3:1987, NEQ)

GB/T 3131 Tin-lead solder

GB/T 20422 Lead-free solder (GB/T 20422-2018, ISO 9453:2014, MOD)

3 Terms and Definitions

There are no terms and definitions that need to be defined in this document:

4 Principles

Put a certain mass of flux-cored solder wire sample into a beaker or crucible, and separate it by heating and melting it in a solder bath or by dissolving the reagent:

Weigh out the flux: The flux content is expressed as a percentage of the flux mass to the original mass of the solder wire:

5 Instruments and materials

5:1 Degreasing agent, isopropyl alcohol or solvent recommended by the manufacturer:

5:2 Balance, accuracy 0:001g:

5:3 Ceramic crucible with a capacity of 30mL:

5:4 Scraper, stainless steel:

5:5 Crucible tongs for holding crucibles or beakers:

5:6 The solder bath contains solder that meets the requirements of GB/T 3131 or GB/T 20422: The temperature of the solder bath should be kept at the temperature of the solder to be tested:

Material alloy liquidus temperature above 50 degrees C +/- 5 degrees C:

5:7 Tissue, used during sample cleaning:

5:8 Glycerol, an analytical reagent that meets the requirements of GB/T 687:

5:9 Glass beaker, heat-resistant glass, with a capacity of 100mL~150mL: