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

GB/T 38265.3-2022

**Test methods for soft soldering fluxes - Part 3: Determination of
acid value - Potentiometric and visual titration methods**

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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 for Standardization Documents" drafting.

This document is part 3 of GB/T 38265 "Test Methods for Soldering Flux". GB/T 38265 has released the following parts.

- Part 1. Gravimetric method for the determination of non-volatile matter content;
- Part 2. Determination of non-volatile matter content boiling point method;
- Part 3. Determination of acid value Potentiometric titration and visual titration;
- Part 5. Copper mirror test;
- Part 6. Determination of content of halides (excluding fluorides);
- Part 8. Determination of zinc content;
- Part 9. Determination of ammonia content;

- Part 10.Solder wetting performance spreading test method;
- Part 11.Solubility of flux residues;
- Part 13.Determination of flux splashing;
- Part 14.Evaluation of the adhesiveness of flux residues;
- Part 15.Copper corrosion test;
- Part 16.Solder wetting performance Wetting balance method;
- Part 17.Flux residue surface insulation resistance test and electrochemical migration test.

This document is modified to adopt ISO 9455-3.2019 "Test methods for soldering flux - Part 3.Determination of acid value by potentiometric titration and purpose

Visual Titration".

Compared with ISO 9455-3.2019, this document has more structural adjustments.

Comparison overview of structure number changes between two files

See Appendix A for the table.

The technical differences between this document and ISO 9455-3.2019 and their reasons are as follows.

- Increase the reference to GB/T 684 (see 5.1) to adapt to the technical conditions of our country and increase operability;
- Increase the reference to HG/T 2892 (see 5.2) to adapt to the technical conditions of our country and increase operability;
- Increase the reference to GB/T 678 (see 5.3) to adapt to the technical conditions of our country and increase operability;
- Changed the calibration method of potassium hydroxide ethanol solution (see 5.5) to increase operability and facilitate the application of this document;
- Changed the preparation method of phenolphthalein indicator solution (see 5.6) to adapt to the technical conditions of our country;
- Added "laboratory analytical balance" instrument (see 6.1) to facilitate the application of this document.
- Changed the solution used to titrate the solder solution in method A, and the corresponding solder sample mass (see 7.1.2, 7.2.1.2), add
Increase operability and facilitate the application of this document;
- Added references to GB/T 38265.1 and GB/T 38265.2 (see 8.1) to adapt to my country's

technical conditions and increase operability;

---Changed the calculation formula (see Chapter 8) to improve the accuracy of the calculation and facilitate the application of this document;

--- Increase the reference to GB/T 6379 (all parts) (see 9.1, 9.2) to adapt to my country's technical conditions and increase operability.

The following editorial changes have been made to this document.

--- In order to coordinate with the existing standard, the name of the standard is changed to "Test method for soldering flux - Part 3.Determination of acid value by potentiometric titration

method and visual titration";

--- Replaced ISO 9454-1 with the informative referenced GB/T 15829 (see Chapter 1).

Please note that some contents of this document may refer to patents. The issuing agency of this document assumes no responsibility for identifying patents.

Introduction

As the key supporting combination material in the soldering process, soldering agent has a decisive influence on the quality of soldered joints.

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

Technology research and development of core electronic devices, high-end chips and integrated circuit complete sets of technology in the Special Project of Modular Integrated Circuit Manufacturing Equipment and Complete Processes

Among them, solder is the key basic material, and the formulation of test method standards for its quality performance evaluation is of great significance.

Since 2001, my country has promulgated and implemented GB/T 3131 "Sn-Lead Solder", GB/T 20422 "Lead-Free Solder",

GB/T 15829 "Classification and Performance Requirements of Solder Fluxes" and GB/T 28770 "Test Methods for Solder Materials" and other supporting standards, solder

As an important component of solder, solder not only has an important impact on the solderability and manufacturability of solder, but also affects the environment, the reliability of solder joints and

And application is also very important. GB/T 38265 "Test Methods for Soldering Fluxes" is the general test method standard for soldering fluxes. It is proposed to be composed of the

following parts

constitute.

- Part 1.Gravimetric method for the determination of non-volatile matter content;
- Part 2.Determination of non-volatile matter content boiling point method;
- Part 3.Determination of acid value Potentiometric titration and visual titration;
- Part 5.Copper mirror test;
- Part 6.Determination of content of halides (excluding fluorides);
- Part 8.Determination of zinc content;
- Part 9.Determination of ammonia content;
- Part 10.Solder wetting performance spreading test method;
- Part 11.Solubility of flux residues;
- Part 13.Determination of flux splashing;
- Part 14.Evaluation of the adhesiveness of flux residues;
- Part 15.Copper corrosion test;
- Part 16.Solder wetting performance Wetting balance method;
- Part 17.Flux residue surface insulation resistance test and electrochemical migration test.

This document uses potentiometric titration and visual titration to determine the acid value of solder. This method has the advantages of simple operation, strong applicability, and accurate results.

With the advantages of reliability and reliability, it has become an important detection method in soldering flux products.

--- Part 1.Gravimetric method for the determination of non-volatile matter content. The purpose is to specify the use of gravimetric method to determine the non-volatile

Test method for substance content.

--- Part 2.Determination of non-volatile matter content Boiling point method. The purpose is to stipulate the determination of the non-volatile oil in solder by the boiling point method.

Test method for substance content.

--- Part 3.Determination of acid value potentiometric titration and visual titration. The purpose is to specify the use of potentiometric titration and visual titration

Standard test method for the determination of acid value in solder.