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

GB/T 38265.17-2022

**Test methods for soft soldering fluxes - Part 17: Surface
insulation resistance comb test and electrochemical migration
test of flux residues**

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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 17 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 comb test and electrochemical migration test.

This document is modified to adopt ISO 9455-17.2002 "Test methods for soldering flux - Part 17.Surface insulation resistance of soldering flux residues

Comb test and electrochemical migration test".

Compared with ISO 9455-17.2002, this document has more structural adjustments, and the structure number changes between the two documents are compared at a glance

See Appendix A for the table.

The technical differences between this document and ISO 9455-17.2002 and their reasons are as follows.

---IEC 60068-2-20 has been deleted, the standard text has directly marked the values of temperature and humidity, and there is no need to quote IEC 60068-

2-20;

--- Added reference to HG/T 2892 (see 5.1) to adapt to the technical conditions of our country and increase operability;

---Replace ISO 5725-2 with GB/T 6379.2, which adopts international standards modified (see 6.1, Chapter 11);

--- Replace ISO 9453 with GB/T 3131 and GB/T 20422, which adopts international standards (see 6.7.1, 6.7.2);

---Replace ISO 12224-1 (see 6.7.4) with GB/T 41104.1, which adopts the modified international standard;

--- Increased the characteristic requirements of "soft brush" in the instrument equipment (see 6.11), to facilitate the application of this document;

--- Increased the characteristic requirements of "Soxhlet extractor" in the equipment (see 6.15) to adapt to the technical conditions of our country;

--- Added the reference to GB/T 11415 (see 6.15) 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 existing standards, the name of the standard was changed to "Soldering Flux Test Methods Part 17. Surface Insulation of Flux Residues

Resistance Comb Test and Electrochemical Migration Test?

--- 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 "Sn-Pb Solder", "Lead-Free Solder", "Solder Classification and Performance Requirements" and "Soft Solder".

Soldering material test method" and other supporting standards, as an important component of soldering material, soldering agent not only plays an important role in the solderability and manufacturability of soldering material

It is also critical to the environment, the reliability of the solder joints, and the application. GB/T 38265 "Test Method for Solder Flux" is the

The general test method standard of the standard is proposed to be composed of the following parts.

--- 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.

--- Part 5.Copper mirror test. The purpose of this specification is to specify a test method for evaluating the aggressiveness of solder to copper by means of the copper mirror test.

--- Part 6.Determination of halide (excluding fluoride) content. The purpose is to specify the use of three quantitative methods for the determination of solder flux

Ionic Halide Content and a Qualitative Method Test Method for the Presence of Ionic Halides in Solder Fluxes.

--- Part 8.Determination of zinc content. The purpose is to specify the test for the determination of zinc content in soldering flux by EDTA titration method method.

--- Part 9.Determination of ammonia content. The purpose of this document is to specify a test method for the determination of ammonia content in solder fluxes by distillation.

--- Part 10.Solder wetting performance spreading test method. The purpose is to specify the use of spreading method to evaluate the wetting performance of solder test method.

--- Part 11.Solubility of flux residues. The purpose is to specify a qualitative method for the evaluation of solder residues in selected solvents

Solubility test method.

--- Part 13.Determination of flux splashing. Its purpose is to specify a test method for evaluating the spattering properties of solder fluxes on steel test pieces.

--- Part 14.Evaluation of the adhesiveness of flux residues. The purpose is to specify the use of chalk powder for the evaluation of residues after soldering after soldering.

Adhesive test method.

--- Part 15.Copper corrosion test. The purpose is to specify the qualitative evaluation of the surface of copper plates using the copper corrosion test under controlled environmental conditions.