



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

GB/T 38265.5-2021

**Test methods for soft soldering fluxes - Part 5: Copper mirror
test**

Issued on: December 31, 2021

Implemented on: July 1, 2022

**Issued by: State Administration for Market Regulation, China National
Standardization Administration**

Table of Contents

foreword

Introduction

1 Scope

2 Normative references

3 Terms and Definitions

4 Principles

5 Reagents

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 5 of GB/T 38265 "Test Methods for Soldering Flux": GB/T 38265 has released the following parts:

- Part 1: Gravimetric method for determination of non-volatile matter content;
- Part 2: Boiling point method for the determination of non-volatile matter content;
- Part 5: Bronze mirror test;
- Part 10: Test methods for the spreading of the wetting properties of solder fluxes;
- Part 11: Solubility of flux residues;
- Part 13: Determination of flux spatterability;
- Part 14: Evaluation of the adhesiveness of flux residues;
- Part 15: Copper corrosion test;
- Part 16: Wetting balance method for wetting properties of solder fluxes:

This document uses the redrafted method to modify and adopts ISO 9455-5:2020 "Test methods for solder fluxes - Part 5: Copper mirror test":

The technical differences between this document and ISO 9455-5:2020 and their reasons are as follows:

- Regarding normative reference documents, this document has made adjustments with

technical differences to adapt to the technical conditions of our country and the circumstances of the adjustment:

The situation is reflected in Chapter 2 "Normative References", and the specific adjustments are as follows:

- * Replace ISO 9455-1 with GB/T 38265:1 which is modified to adopt international standard (see 7:1:3:3);
- * Replace ISO 9455-2 with GB/T 38265:2 which is modified to adopt international standard (see 7:1:3:3);
- * Added reference to GB/T 686 (see 5:1);
- * Added reference to GB/T 8145 (see 5:4);
- * Added reference to GB/T 11415 (see 6:3);
- * Added reference to HG/T 2892 (see 5:2):

The following editorial changes have been made to this document:

- Modify the standard name to "Solder Flux Test Method Part 5: Copper Mirror Test";
- Added references:

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

Introduction

As a key supporting material in the soldering process, solder flux has a decisive influence on the quality of soldered joints:

In the implementation of the strong foundation project, the national major science and technology projects "core electronic devices, high-end general-purpose chips and basic software products" and "super large-scale

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

Among them, solder flux is the key basic material, and it is of great significance to formulate the test method standard for its quality performance evaluation:

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

As an important component of the solder, solder flux is not only important for the

solderability and processability of the solder

It is also critical to the environment, reliability of solder joints and applications: GB/T 38265 "Solder Flux Test Method" is a

General test method standard, it is proposed to consist of the following parts:

- Part 1: Gravimetric method for determination of non-volatile matter content;
- Part 2: Boiling point method for the determination of non-volatile matter content;
- Part 3: Determination of acid value by potentiometric titration and visual titration;
- Part 5: Bronze mirror test;
- Part 6: Determination of halide (excluding fluoride) content;
- Part 8: Determination of zinc content;
- Part 9: Determination of ammonia content;
- Part 10: Test methods for the spreading of the wetting properties of solder fluxes;
- Part 11: Solubility of flux residues;
- Part 13: Determination of flux spatterability;
- Part 14: Evaluation of the adhesiveness of flux residues;
- Part 15: Copper corrosion test;
- Part 16: Wetting balance method for wetting properties of solder flux;
- Part 17: Surface insulation resistance comb brush test and electrochemical migration test of flux residues:

This document adopts the method of copper mirror test to qualitatively evaluate the corrosivity of solder flux to copper:

Accurate and reliable, it has become an important detection method in flux products:

Soldering flux test method

Part 5: Bronze mirror test

1 Scope

This document specifies the qualitative evaluation method for copper corrosion of solder flux, including principles, reagents, equipment, test procedures, test results

expression, test report, etc:

This document applies to type 1 solder fluxes as defined in GB/T 15829:

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 686 Chemical Reagent Acetone (GB/T 686-2008, ISO 6353-2:1983, NEQ)

GB/T 8145 Gum Rosin

GB/T 11415 Laboratory sintered (porous) filter pore size, classification and grades (GB/T 11415-1989, neq ISO 4793:

1980)

GB/T 38265:1 Test Methods for Soldering Flux Part 1: Determination of Non-volatile Matter Content Gravimetric Method (GB/T 38265:1-

2019, ISO 9455-1:1990, MOD)

GB/T 38265:2 Test Methods for Soldering Flux Part 2: Determination of Non-volatile Matter Content Boiling Point Method (GB/T 38265:2-

2019, ISO 9455-2:1993, MOD)

HG/T 2892 Chemical reagent isopropanol (HG/T 2892-2020, ISO 6353-3:1987, NEQ)

3 Terms and Definitions

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

4 Principles

For solid flux or paste flux, as well as flux samples in flux-cored solder wire, a solder containing 25% (mass fraction) should be prepared

test solution of the sample: For liquid flux samples, it can be directly used as the test solution: Vacuum deposition on the glass plate according to the test solution

The corrosion behavior of the formed copper film (copper mirror) was used to evaluate the flux: A rosin reference solution that should not cause copper film removal was used as a reference: test

The purpose is to evaluate the reactivity of the solder flux: