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

GB/T 4074.4-2024

Replacing GB/T 4074.4-2008

**Test methods of winding wires - Part 4: Chemical properties
(English Translation)**

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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 4 of GB/T 4074 "Test methods for winding wires": GB/T 4074 has been published in the following parts:

--- Part 1: General provisions;

- Part 2: Dimensional measurement;
- Part 3: Mechanical properties;
- Part 4: Chemical properties;
- Part 5: Electrical properties;
- Part 6: Thermal properties;
- Part 7: Test method for determining the temperature index of enameled winding wire;
- Part 8: Test method for determination of temperature index of enameled winding wire - Rapid method;
- Part 21: High frequency pulse voltage resistance:

This document replaces GB/T 4074.4-2008 "Test methods for winding wires Part 4: Chemical properties" and is compatible with GB/T 4074.4-2008 Compared with the previous version, in addition to structural adjustments and editorial changes, the main technical changes are as follows:

- Added general principles for refrigerant resistance test (see 5.1);
- Added other refrigerants in the refrigerant resistance test (see 5.1);
- Changed the test procedure for refrigerant resistance test (see 5.2:4, 4:1:4 of the:2008 edition);
- Added an overview of direct solderability test (see 6.1);
- Changed the free length between the holding points in the direct solderability test equipment (see 6.2, 5:1 of the:2008 edition);
- Deleted the sample preparation for direct solderability test (see 5.2 in the:2008 edition);
- Added an overview of hydrolysis resistance and transformer oil resistance tests (see 7.1);
- Changed the test equipment in "hydrolysis resistance and transformer oil resistance test" (see 7.2:1, 6:1:1 of the:2008 edition);
- Changed the test procedure for hydrolysis resistance of flat wire (see 7.3:3:1, 6:2:3:1 of the:2008 edition):

This document is equivalent to IEC 60851-4:2016 "Test methods for winding wires - Part 4: Chemical properties":

A new chapter "Terms and Definitions" has been added to this document:

The following minimal editorial changes were made to this document:

- In order to coordinate with the existing standards, the name of the standard is changed

to "Test methods for winding wires Part 4: Chemical properties":

Introduction

Winding wire is one of the main raw materials for power, motor, electrical appliances, home appliances, electronics, communications, transportation, power grid, aviation and other fields:

It has a wide range and covers many fields, and has become an important mechanical industrial product:

GB/T 4074 Winding Wire Test Methods is the only test method standard for measuring winding wire products in China: It is very important for product testing and market regulation:

It plays an important role in both market and product improvement:

GB/T 4074 aims to establish the test method standards for the performance of different types of winding wire products and is intended to consist of the following 9 parts:

--- Part 1: General provisions: The purpose is to establish the terms, definitions and general test principles for winding wire test methods:

--- Part 2: Dimensional measurement: The purpose is to establish test methods for measuring the dimensions of different products of winding wire:

--- Part 3: Mechanical properties: The purpose is to establish test methods for the mechanical properties of different types of winding wire products:

--- Part 4: Chemical properties: The purpose is to establish the test methods for the chemical properties of different types of winding wire products:

--- Part 5: Electrical properties: The purpose is to establish test methods for the electrical properties of different types of winding wire products:

--- Part 6: Thermal properties: The purpose is to establish test methods for the thermal properties of different types of winding wire products:

--- Part 7: Test method for determining the temperature index of enameled winding wire: The purpose is to establish a method for determining the temperature index of enameled winding wire:

Test procedures:

--- Part 8: Test method for determining the temperature index of enameled winding wire: Rapid method: The purpose is to establish the determination of the temperature index of enameled winding wire:

Rapid test procedure for the sensitivity index:

--- Part 21: High-frequency impulse voltage resistance performance: The purpose is to establish the test method for the high-frequency impulse voltage resistance performance of winding wires:

Winding wire test methods Part 4: Chemical properties

1 Scope

This document describes the following test methods for winding wires:

---Test method 12: Solvent resistance

---Test method 16: Refrigerant resistance

---Test method 17: Direct solderability

---Test method 20: Transformer oil resistance for terms, definitions, general principles for test methods and a catalogue of test methods for winding wires, see IEC 60851-1:

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document:

For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to this document:

GB/T 4074.3-2024 Winding wire test methods Part 3: Mechanical properties (IEC 60851-3:2023, IDT) Note: There is no technical difference between the referenced content of GB/T 4074.3-2024 and the referenced content of IEC 60851-3:2009:

GB/T 4074.5-2024 Winding wire test methods Part 5: Electrical properties (IEC 60851-5:2019, IDT) Note: There is no technical difference between the referenced content of GB/T 4074.5-2024 and the referenced content of IEC 60851-5:2008:

Note: GB/T 20422-2018 Lead-free solder (ISO 9453:2014, MOD) Note: GB 2536-2011 Unused mineral insulating oils for electrical fluid transformers and switches (IEC 60296:2003, MOD) Note: GB/T 20628.1-2006 Specification for cellulose paper for electrical use Part 1: Definitions and general requirements (IEC 60554-1:1977, MOD)

3 Terms and definitions

There are no terms or definitions that require definition in this document: