ICS 83.080.10
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# NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA



# GB/T 1630.2-2023

## Plastics - Epoxy resins - Part 2: Preparation of test specimens and determination of properties of crosslinked epoxy resins

**Issued on: September 7, 2023** **Implemented on: April 1, 2024**

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

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## Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1.Structure and Drafting Rules of Standardization Documents"

Drafting.

This document is Part 2 of GB/T 1630 "Plastic Epoxy Resins". GB/T 1630 has published the following parts.

---Part 1.Naming;

---Part 2.Sample preparation and performance determination of cross-linked epoxy resin.

This document is modified from ISO 3673-2.2012 "Plastic epoxy resins Part 2.Specimen preparation and properties of cross-linked epoxy resins"

Determination".

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

The technical differences between this document and ISO 3673-2.2012 and their reasons are as follows.

---Replaced ISO 2818 (see 4.4) with normatively cited GB/T 39812 to adapt to my country's technical conditions and increase operability

work nature;

---Replaced ISO 10350-1.2007 (see 5.2) with the normatively cited GB/T 19467.1-2004 to adapt to my country's technology

conditions to increase operability;

---Replaced ISO 2577 and GB/T 1040.2 with normatively cited GB/T 39818, replaced ISO 527-2 and GB/T 1034

Replaced ISO 62, GB/T 1043.1 Replaced ISO 179-1, GB/T 1043.2 Replaced ISO 179-2,

GB/T 1408.1 replaced IEC 60243-1, GB/T 1409 replaced IEC 60250, GB/T 1634.2

replaced

ISO 75-2, GB/T 2406.2 replaced ISO 4589-2, GB/T 2408 replaced IEC 60695-11-10, GB/T 4207

Replaced IEC 60112, GB/T 5169.17 replaced IEC 60695-11-20, GB 2536 replaced IEC 60296,

GB/T 9341 replaced ISO 178, GB/T 11997 replaced ISO 3167, GB/T 19466.2 replaced ISO 11357-

2.GB/T 19467.1 replaced ISO 10350-1, GB/T 36800.2 replaced ISO 11359-2, and GB/T 1410 replaced

IEC 60093 (see Table 1) to adapt to my country's technical conditions and increase operability.

The following editorial changes have been made to this document.

---Added notes on cross-linking agents and accelerators (see 4.3.3.5).

Please note that some content in this document may be subject to patents. The publisher of this document assumes no responsibility for identifying patents.



## Introduction

Epoxy resin is mainly used in adhesives, anti-corrosion coatings, electronic products, electrical insulation, wind power and new energy, aerospace, and various high-performance composites.

It is one of the most widely used and important basic products in composite material products and other fields. As the application fields of epoxy resin continue to expand, the demand for epoxy trees

The requirements related to fat are also getting higher and higher. GB/T 1630 "Plastic Epoxy Resins" aims to standardize the naming of epoxy resins and unify the sample preparation methods.

The method and performance measurement results are intended to be composed of two parts.

---Part 1.Naming. The purpose is to specify the nomenclature of epoxy resins.

---Part 2.Sample preparation and performance determination of cross-linked epoxy resin. Purpose is to specify the sample preparation and properties of epoxy resins

Determination.

Plastic Epoxies Part 2.

Sample preparation and property determination of cross-linked epoxy resins

Safety Statement---Personnel using this document should be familiar with normal laboratory operations (if applicable). This document is not intended to address issues related to its use

Use all relevant security issues (if any). It is the user's responsibility to establish appropriate safety and health procedures and ensure compliance with any regulations

Require.

Warning---Fumes from the cross-linking agent (methyltetrahydrophthalic anhydride) are irritating to the respiratory system and skin. Use ventilation equipment, wear

Protective mask, gloves and goggles.



## 1 Scope

This document describes the preparation of specimens and test methods for determining the properties of cross-linked epoxy resins. The properties measured are selected from

General test methods of GB/T 19467.1-2004.

This document applies to test methods for the properties of cross-linked epoxy resins. It does not include test methods for non-cross-linked epoxy resins. Non-cross-linked epoxy resins

For test methods, see ISO 18280.

In order to ensure the reproducibility and repeatability of the test results, it is necessary to use the sample preparation and condition adjustment methods specified in this document to

and specified specimen dimensions and test methods. Test data obtained using specimens prepared under different conditions or using specimens of different sizes can be

Can be inconsistent.

If necessary, reference may be made to other standards regarding performance measurement and sample preparation of epoxy resin products.

## 2 Normative reference documents

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

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

this document.

GB/T 1034 Determination of water absorption of plastics (GB/T 1034-2008, ISO 62.2008, IDT)

GB/T 1040.2 Determination of tensile properties of plastics Part 2.Test conditions for molded and extruded plastics (GB/T 1040.2-

2022,ISO 527-2.2012,MOD)

GB/T 1043.1 Determination of impact properties of plastic simply supported beams Part 1.Non-instrumented impact test (GB/T 1043.1-

2008,ISO 179-1.2000,IDT)

GB/T 1043.2 Determination of impact properties of plastic simply supported beams Part 2.Instrumented impact test (GB/T 1043.2-

2018,ISO 179-2.1997,IDT)

GB/T 1408.1 Test methods for electrical strength of insulating materials Part 1.Test at power frequency (GB/T 1408.1-2016,

IEC 60243-1.2013,IDT)

GB/T 1409 Measurement of permittivity and dielectric loss factor of electrical insulating materials at power frequency, audio frequency, and high frequency (including meter wave wavelength)

Recommended method (GB/T 1409-2006, IEC 60250.1969, MOD)

GB/T 1634.2 Determination of load deformation temperature of plastics Part 2.Plastics and hard rubber (GB/T 1634.2-2019,

ISO 75-2.2013,MOD)

GB/T 2406.2 Determination of combustion behavior of plastics by oxygen index method Part 2.Room temperature test (GB/T 2406.2-2009,

ISO 4589-2.1996,IDT)

GB/T 2408 Horizontal and vertical methods for determination of combustion properties of plastics (GB/T 2408-2021, IEC 60695-11-10.