

ICS 83.080.10
CCS G 31



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

GB/T 46317-2025

**Plastics - Liquid epoxy resins - Determination of tendency to
crystallize**

塑料 液体环氧树脂 结晶倾向的测定

(English Translation)

Issued on: October 5, 2025

Implemented on: May 1, 2026

Issued by: State Administration for Market Regulation

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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 modified to adopt ISO 4895:2014 "Determination of the tendency of liquid epoxy resins in plastics to crystallize".

A new chapter on "Terms and Definitions" has been added.

This document has undergone the following structural adjustments compared to ISO 4895:2014.

---Chapters 4 through 10 correspond to Chapters 3 through 9 of ISO 4895:2014;

---The second paragraph of Chapter 8 has been deleted.

The technical differences between this document and ISO 4895:2014, and the reasons therefor, are as follows.

---The scope of application of this document has been expanded (see Chapter 1);

---ISO 6353-2:1983 (see Chapter 5) has been replaced with the normatively referenced GB/T 678-2023 to adapt to my country's technical requirements.

Add components to increase operability;

---ISO 6353-3:1987 (see Chapter 5) has been replaced with the normatively referenced GB/T 15897-1995 to accommodate my country's technical requirements.

Conditions, increasing operability;

---Increased oven temperature control accuracy (see 6.4), improving the repeatability and accuracy of test results;

---The second paragraph of Chapter 8 has been deleted to improve operability.

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed by the China Petroleum and Chemical Industry Federation.

This document is under the jurisdiction of the National Technical Committee on Plastics Standardization (SAC/TC15).

Introduction

The crystallization tendency of liquid epoxy resin depends on factors such as basic components, purity, additives, uniformity, and moisture content, as well as storage time and cyclic properties.

External factors such as ambient temperature.

It is difficult to quantitatively represent this trend through observation and comparison; therefore, it is preferable to observe the flow of samples at regular time intervals.

It is expressed through changes in sex and appearance.

Determination of the crystallization tendency of liquid epoxy resin in plastics

Warning---Personnel using this document should be familiar with standard laboratory operating procedures. This document is not intended to address all potential issues related to the use of this document.

Regarding related safety issues, users are responsible for establishing appropriate safety and health operating procedures and ensuring compliance with all regulatory requirements.

1 Scope

This document describes a method for determining the crystallization tendency of liquid epoxy resins. The crystallization tendency is determined by observing the crystals over specified time intervals.

It is determined by observing changes in resin fluidity and the onset of crystallization.

This document applies to liquid epoxy resins such as bisphenol A and bisphenol F.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included.

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

This document.

GB/T 678-2023 Chemical Reagents - Ethanol (Anhydrous Ethanol) GB/T 15897-1995
Chemical reagent - Calcium carbonate (ISO 6353-3:1987, NEQ)

3 Terms and Definitions

This document does not contain any terms or definitions that need to be defined.

4 Principles

Calcium carbonate powder is mixed with liquid epoxy resin dissolved in ethanol. The mixture is maintained at a specified temperature and for a specified time.

Observe at intervals to compare changes in fluidity and crystallization.

5 Reagents

5.1

Calcium carbonate, conforming to the technical requirements for analytical grade in GB/T 15897-1995.

5.2

Ethanol, conforming to the technical requirements for analytical grade in GB/T 678-2023.

6 Equipment

6.1

Refrigerator or freezer compartment. Keep at $(10 \pm 2)^{\circ}\text{C}$.

6.2

Glass test tube. capacity approximately 100mL, diameter 40mm, height 80mm, with polyethylene cap stopper.

6.3

Glass rod. made of hard glass, about 10mm in diameter.

6.4

Oven. Temperature control accuracy $\pm 2^{\circ}\text{C}$.

6.5

Analytical balance. accuracy 0.01g.

6.6

Constant temperature room. Maintain at $(23\pm5)^{\circ}\text{C}$.