

ICS 83.080

CCS G 32



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

GB/T 4612-2008

Replacing GB/T 4612-1984

**Plastics -- Epoxy compounds -- Determination of epoxy
equivalent**

塑料 环氧化合物 环氧当量的测定

(English Translation)

Issued on: August 4, 2008

Implemented on: April 1, 2009

Issued by: Standardization Administration of China

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Foreword

This standard is identical with ISO 3001:1999 "Plastics --- epoxy compounds epoxy equivalent determination" (in English).

For ease of use, this standard made the following editorial changes.

- a) to the "international standards" be replaced by "this standard";
- b) Delete the ISO 3001:1999 Foreword;
- c) increasing the preface of this standard;
- d) the use of symbols instead of a decimal point in the decimal symbol of international standards " , . " , " ;
- e) to the International Standard "(m1/m1)" to "quality score."
- f) increase the informative appendix NA, included in Chapter 8 of the precision of the content.

This standard replaces GB/T 4612-1984 "Determination of epoxy equivalent epoxy compounds." this standard and GB/T 4612-1984 compared to the main changes are as follows.

- Increasing the definition of an epoxy index;
- Units from the "mole" to "mole";
- Provisions of the acetic anhydride purity > 96%;
- Preparation of the standard perchloric acid in glacial acetic acid was added to the 300mL and 500mL acetic anhydride by the 20mL to 30mL;
- Perchlorate standard solution by the addition of glacial acetic acid 50mL to 20mL, also joined 10mL of chloroform;
- Increase the results of rounding;
- Increasing the blank test;

- Instrument increases the titrator;
- Weighed accurately to 0.2mg to 0.1mg;
- Increased under a high molecular weight, the amount of chloroform to 30mL;
- Increase the informative appendix.

Appendix A of this standard is a normative appendix, Appendix NA informative appendices.

The standard proposed by China Petroleum and Chemical Industry Association.

This standard by the National Standardization Technical Committee of plastic (SAC/TC15) centralized.

1 Scope

This standard specifies all epoxy compounds epoxy equivalent determination. For epoxy-amine, the need to amend the provisions of Appendix A method.

2 Terms and definitions

The following terms and definitions apply to this standard.

A resin containing a mass of moles of epoxy groups.

1kg number of moles of the epoxy group-containing resin.

Principle 3

0.1mol/L standard solution of perchloric acid with nascent hydrogen bromide and tetraethylammonium bromide specimen formed by the reaction of the epoxy groups in the reaction, Crystal violet indicator or potentiometric titration method to determine the end point.

4 Reagents

Unless otherwise specified, the reagents used were of analytical grade.

4.1

glacial acetic acid.

4.2

of acetic anhydride, purity > 96%.

4.3

chloroform.

4.4

potassium hydrogen phthalate.

4.5

crystal violet indicator solution.

100mg crystal violet dissolved in 100mL of glacial acetic acid (4.1) in.

4.6

perchloric acid, 0.1mol/L of standard solution.

4.6.1 Preparation

The 8.5mL mass fraction of 70% perchloric acid solution was added by a 500mL glacial acetic acid (4.1) and 30mL acetic anhydride (4.2) group into a mixed solution diluted to 1000mL with glacial acetic acid and mix well.

4.6.2 Calibration

200mg potassium hydrogen phthalate (4.4) (if necessary, dried at 120 °C 2h) was dissolved in 20mL glacial acetic acid (4.1) and 10mL Chloroform mixture, with crystal violet indicator solution (4.5) or potentiometric titration (5.1) of the calibration solution.

4 to 6 drops with drops of crystal violet solution endpoint determination, titrated to a stable green, or potentiometric titrator performs the same operation Make. If measured by potentiometric titration method epoxy equivalent, apply the same method of calibration perchlorate. Record titration standard solution temperature

NOTE: Recommended use of safety goggles and safety nets.

GB/T 4612-2008/ISO 3001:1999