

ICS 83.080
CCS G 31



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

GB/T 22312-2008

Replacing GB/T 12005.3-1989; GB/T 12005.4-1989; GB/T 12005.5-1989

**Plastics -- Polyacrylamide -- Determination for residual
acrylamide**

塑料 聚丙烯酰胺 残留丙烯酰胺含量测定方法

(English Translation)

Issued on: August 4, 2008

Implemented on: April 1, 2009

Issued by: Standardization Administration of China

Table of Contents

- Foreword
- 1 Scope
- 2 Normative references
- 3 Method A. Bromination
 - 3.1 Principle
 - 3.2 Reagents

Foreword

This standard replaces GB/T 12005.3-1989 "Polyacrylamide residual acrylamide content determination bromide method" GB/T 12005.4-1989 "Polyacrylamide residual acrylamide content determination liquid chromatography", GB/T 12005.5-1989 "Polyacrylamide residual acrylamide content determination by gas chromatography", the GB/T 12005.3-1989, GB/T 12005.4-1989 and GB/T 12005.5-1989 integration were based standard method A, Method B and Method C.

This standard is in the original standard differences are as follows.

- a) the standard name changed to "Determination of the plastic polyacrylamide residual acrylamide content";
- b) the "reference standard" to "normative references" to add a normative references;
- c) editorial changes.

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

1.1

standard specifies the method for the determination of polyacrylamide residual levels of acrylamide.

1.2

Method A specifies the use of aqueous solution and methanol - water extraction sample solution prepared to bromine addition determination polyacrylamide residual acrylamide an amide content. Suitable for different residual propylene polymerization process powder and

gum nonionic and anionic polyacrylamide Determination of acrylamide content. Residual acrylamide content higher than 0.5% polyacrylamide aqueous solution was prepared by Method adapted samples were measured, Residual acrylamide content higher than 0.05% polyacrylamide suitable for use extracts prepared samples were measured.

1.3

Method B specifies the leached residue of acrylamide from polyacrylamide and its content was determined by liquid chromatography method. Measuring a Given the residual acrylamide content of less than 0.01% polyacrylamide gel and powder.

1.4

Method C specifies the leached residue of acrylamide from polyacrylamide and its content was determined by gas chromatography method. Apply powder Determination of jelly-like and non-ionic polyacrylamide and anionic polyacrylamide residual levels of acrylamide, and acrylamide content Higher than 0.01%, especially more than 0.05% of the measured sample.

2 Normative references

The following documents contain provisions which, through reference in this standard and become the standard terms. For dated references, subsequent Amendments (not including errata content) or revisions do not apply to this standard, however, encourage the parties to the agreement are based on research Whether the latest versions of these documents. For undated reference documents, the latest versions apply to this standard.

Preparation of GB/T 601-2002 Chemical Reagent standard titration solution GB/T 603-2002 Chemical Reagent Test Methods - Preparations with GB/T 4946-2008 term gas chromatography Laboratory use specifications and test methods GB/T 6682-1992 Analysis GB/T 12005.2-1989 polyacrylamide solid content determination

3.1 Principle

An excess of potassium bromate in the sample solution - a solution of potassium bromide, potassium bromide and potassium bromate reaction of bromine in acidic medium with the sample Acrylamide double bond. After completion of the reaction, an excess of potassium iodide and reduction of unreacted bromine is generated iodo, with sodium thiosulfate standard Precipitated iodine solution back drop.

3.2 Reagents

Unless otherwise specified in this standard, the purity of the reagents used should be more analytical, test water should be consistent with GB/T 6682-1992 Three or above the water specifications.

3.2.1

hydrochloric acid.

3.2.2

methanol - water extract. volume ratio of 8.2.

3.2.3

bromate - potassium bromide solution. $\text{Ba} (1/6\text{KBrO}_3) = 0.1\text{mol/L}$. According to GB/T 601-2002 formulated.

3.2.4

KI solution. 20%.

3.2.5

aqueous hydrochloric acid. volume ratio of 1.

3.2.6

Starch indicator. Press GB/T 603-2002 formulated.