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

GB/T 7717.10-2008

Replacing GB/T 7717.10-1994

**Acrylonitrile for industrial use -- Part 10: Determination of
content of peroxides -- Spectrophotometric method**

工业用丙烯腈 第10部分: 过氧化物含量的测定 分光光度法

(English Translation)

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Foreword

GB/T 7717 "Acrylonitrile for industrial use" is expected to be divided into the following sections.

- Part 1. Specification;
- Part 5. Determination of acidity, pH and titration values;
- Part 8. Determination of total aldehyde content spectrophotometry;
- Part 9. Determination of total cyanide titration;
- Part 10. Determination of the peroxide content spectrophotometry;
- Part 11. Determination of iron and copper content spectrophotometry;
- Part 12. Determination of purity and impurity gas chromatography;
- Part 15. Determination hydroxyanisole content spectrophotometry.

This section GB/T Part of 107,717.

The partial modification using ASTM E1784:1997 (2002) "Standard Test Method for Determination of acrylonitrile in total peroxide content of" (English Version), this portion ASTM E1784:1997 (2002) of the structural differences in Appendix A.

This portion ASTM E1784:1997 (2002) of the main differences are.

- Normative documents used in current national standards;
- Applicable concentration range was revised to 0.05mg/kg ~ 1.0mg/kg;
- In the preparation of peroxide-free acrylonitrile, remove the ion exchange resin; distillation of the caustic alkali concentration is reduced to 7% (Mass fraction), remove the water, increasing the anhydrous calcium chloride dehydration step; and clearly the conditions for preparation of activated alumina adsorption method;

- Adjust the color reaction order of addition of reagents;
- Shaking clearly defined time after potassium iodide was 3min, coloration time to 40min;
- Absorption cell specifications from 1cm adjusted 2cm;
- Change the calibration curve method of preparation of each concentration point;
- Increase the use of standard potassium permanganate titration solution of hydrogen peroxide stock solution calibration method;

This Part replaces GB/T 7717.10-1994 "industrial use - Determination of acrylonitrile content of peroxides spectrophotometry." this portion of the GB/T 7717.10-1994 main changes are as follows.

- Applicable concentration range was revised to 0.05mg/kg ~ 1.0mg/kg;
- Distillation of the caustic alkali concentration to 7% (mass fraction), anhydrous calcium chloride to reduce the drying time of 4h; increase Using activated alumina prepared without peroxide acrylonitrile;
- Shaking time after potassium iodide was added to 3min;
- Absorption cell specifications from 1cm adjusted 2cm;
- Changing the preparation method and the calibration curve standard solution prepared in the way of each concentration point;
- Increase the use of sodium thiosulfate standard titration solution of hydrogen peroxide stock solution calibration method;

Appendix A of this section is an informative annex.

This part is proposed by the China Petroleum and Chemical Corporation.

This part of the National Standardization Technical Committee Petrochemical Chemical Technical Committee (SAC/TC63/SC4) centralized.

This section is drafted. Shanghai Research Institute of Petrochemical.

1 Scope

1.1

part specifies the determination Acrylonitrile for industrial use spectrophotometric peroxide content.

This section applies to a peroxide (hydrogen peroxide) content of 0.05mg/kg ~ 1.0mg/kg industrial acrylonitrile sample.

1.2

section is not intended to illustrate its use of all safety-related issues. Responsibility of the user to establish appropriate safety and health measures Facilities, to ensure compliance with the provisions of the relevant national regulations.

2 Normative references

The following documents contain provisions by GB/T 7717 reference in this part of the provisions of this section. For dated reference documents Member, all subsequent amendments (not including errata content) or revisions do not apply to this section, however, encouraged to reach under this section Parties to research agreement to use the latest versions of these documents. For undated reference documents, the latest versions apply to this section.

Preparation of GB/T 601 chemical reagent standard titration solution GB/T 603 chemical reagent in test methods - Preparations with GB/T 3723 Sampling of chemical products for industrial use General Safety (GB/T 3723-1999, idt ISO 3165. 1976) GB/T 6680 General rules for sampling liquid chemical products GB/T 6682 analytical laboratory use specifications and test methods (GB/T 6682-2008, ISO 3696. 1987, MOD) GB/T 8170 numerical rounding rules

3 Method summary

Under the action of acetic anhydride, the peroxide sample with potassium iodide, to form a yellow triiodide ions (I_3^-). Using a spectrophotometer to Determination of absorbance at a wavelength of 365nm of the solution, according to the standard solution of hydrogen peroxide calibration curve sample Richard peroxide (in H_2O_2 meter) content.

4 Instrument

4.1

Spectrophotometer. Accuracy $\pm 0.001A$, configuration 2cm quartz absorption cell;

4.2

Electronic balance. a sense of the amount of 0.1mg;

4.3

Timer;

4.4

pH meter. accuracy 0.1pH;

4.5

stoppered conical flask. 100mL;

4.6

iodine bottle. 250mL;

4.7

Buret. 25mL, brown;

4.8

flask. 50mL, 100mL and 500mL brown;

4.9

Graduated pipettes. 1mL; 5mL;

4.10

Single-marking pipette. 0.5mL, 2mL, 5mL and 25mL;

4.11

separatory funnel. 1000mL;