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

GB/T 29493.6-2013

**Determination of harmful substances in textile dyeing and
finishing auxiliaries -- Part 6: Determination of isocyanate
groups in polyurethane prepolymers**

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Quarantine of the People's Republic of China, Standardization
Administration of the People's Republic of China**

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Foreword

GB/T 29493 "textile dyeing and finishing auxiliaries of harmful substances Determination" is divided into nine sections.

--- Part 1. Determination of polybrominated biphenyls and polybrominated diphenyl ethers by gas chromatography - mass spectrometry;

--- Part 2. perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA) High performance liquid chromatography - mass

Spectroscopy;

--- Part 3. organotin compounds by gas chromatography - mass spectrometry;

--- Part 4. polycyclic aromatic compounds (PAHs) by gas chromatography - mass spectrometry;

--- Part 5. Determination of the formaldehyde content of the emulsion polymer free;

--- Part 6. polyurethane prepolymer isocyanate determination of the ester group content;

--- Part 7. polyurethane coating finishing agent diisocyanate determination ester monomer;

--- Part 8. Determination of acrylic products in the residual monomers;

--- Part 9. Determination of acrylamide.

This is Part 6 GB/T 29493 of.

This section drafted in accordance with GB/T 1.1-2009 given rules.

This section uses redrafted Law Amendment uses ISO 11909.2007 "Paints and varnishes polyurethane resin binder Common test

method".

This part of ISO 11909.2007, compared with more adjustment in the structure, listed in Appendix A of this standard and ISO 11909.2007

The reg number control list.

This part of ISO 11909.2007 technical differences exist compared to the terms of these differences has been involved through its outer margin bits

Opposed to a single vertical line (|) have been marked, in Appendix B gives the corresponding list of technical differences and their causes.

This section also made the following editorial changes.

--- Use the "standard" instead of "this International Standard";

--- Deleted international standards foreword.

This part is proposed by the China Petroleum and Chemical Industry Association.

This part of the National Standardization Technical Committee of dye auxiliaries Technical Committee (SAC/TC134/SC1) centralized.

This section is drafted. Biography of Hangzhou Fine Chemical Co., Ltd. Zhejiang Chuan, Donghua University.

1 Scope

GB/T 29493 provisions of this part of the textile dyeing and finishing auxiliaries polyurethane prepolymer isocyanate ester group content determination.

This section applies to the toluene diisocyanate (TDI), methylene diphenyl diisocyanate (MDI) and other diisocyanate monomer synthesis

Polyurethane prepolymer isocyanate ester group content determination.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein

Member. For undated references, the latest edition (including any amendments) applies to this document.

Preparation of GB/T 601-2002 Chemical Reagent standard titration solution

GB/T 6682 analytical laboratory use specifications and test methods (GB/T 6682-2008, ISO 3696. 1987, MOD)

GB/T 8170-2008 revised value represents about rules and limit values

judgment

Principle 3

Urethane prepolymer with an excess of di-n-butylamine. An excess of di-n-butylamine with hydrochloric acid standard solution titration to do bromophenol blue indicator

Display the titration end point. Reaction is as follows.

$R-NCO (C_4H_9)_2NH \rightarrow$

$RNHCON (C_4H_9)_2$

$(C_4H_9)_2NH HCl \rightarrow$

$(C_4H_9)_2NH \cdot HCl$

4 Reagents and solutions

Unless otherwise specified, use water only confirm three analytical grade reagents and GB/T 6682 stipulated.

4.2 ethanol.

4.3 di-n-butylamine solution, $c [(C_4H_9)_2NH] = 2.0mol/L$ or $0.2mol/L$. Weigh 6.5g or 65g redistilled anhydrous di-n-butyl

Amine, (when 1.033kPa, a boiling point of 157 degrees C ~ 162 degrees C), diluted with anhydrous toluene to 250mL, and mix.

4.4 hydrochloric acid standard solution, $c (HCl) = 1mol/L$ or $0.1mol/L$. according to GB/T 601-2002 requirements Preparation and calibration.

4.5 bromophenol blue indicator. Weigh 1g of bromophenol blue in a mortar, add 1.5mL concentration of 1mol/L NaOH solution of finely L, then

Added 20mL of ethanol and 10mL of water to dissolve.