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

GB/T 23296.3-2009

**Food contact materials -- Determination of 1, 3-butadiene in
plastics -- Gas chromatography**

食品接触材料 塑料中1,3-丁二烯含量的测定 气相色谱法

(English Translation)

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Table of Contents

Foreword

1 Scope

2 Normative references

4 Reagents and materials

Foreword

The standard reference European Standard EN13130-4:2004 "food contact plastic materials and products for restricted substances - Part 4. Plastic Determination of 1,3-butadiene content of feed "(in English) to develop.

Appendix A of this standard is a normative appendix, Appendix B, Appendix C is informative appendix.

This standard was proposed by the National Certification and Accreditation Administration Committee.

This standard by the National Import and Export Food Safety Inspection Standardization Technical Committee (SAC/TC445) centralized.

This standard was drafted. People's Republic of China Hubei Exit Inspection and Quarantine, Chinese Academy of Inspection and Quarantine, the State Environmental Protection production Product Quality Supervision and Inspection Center, Ningxia Hui Autonomous Region People's Republic of China Exit Inspection and Quarantine.

1 Scope

This standard specifies the method for the determination of 1,3-butadiene content of plastics.

This standard applies in N, N- dimethylacetamide solvent can be better dispersed, suspended or dissolved completely in 1,3-butadiene-containing plastic Determination of the amount.

The standard measurement of 1,3-butadiene lower limit of 0.1mg/kg.

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.

GB/T 6682 analytical laboratory use specifications and test methods (GB/T 6682-2008, ISO 3696. 1987, MOD) GB/T 23296.1 plastic food contact materials in plastics restricted substances test substance specific migration into foods and food simulants Experience and determination method and conditions of exposure to food simulants Guide selection Principle 3 1,3-butadiene in plastics by N, after N- dimethylacetamide (DMAC) extraction using headspace, 1,3-butadiene in the column and the internal standard form - pentane and other components separation, detection with hydrogen flame ionization detector. According to the standard addition method standard curve, internal standard Statutory amount.

When there is interference using the internal standard method, external standard calibration method should be used (see Appendix A).

4 Reagents and materials

Unless otherwise indicated, water GB/T 6682 provided a water, reagents were of analytical grade.

4.1 1,3-butadiene standards. than 99.5% purity.

4.2

shape - pentane standards. purity of more than 99.5%, the chromatogram with 1,3-butadiene have the same retention time of the impurity peak area or peak height does not Exceed 1%.

Pentane have the same retention time - a purity of greater than 99.0%, the chromatogram with 1,3-butadiene or shape. 4.3 N, N- dimethylacetamide (DMAC) Impurity peak area or peak height between should not exceed 1%.

4.4 1,3-Butadiene Standard stock solution (5mg/g). Take 50mL vial (5.3, with a septum and aluminum cap), weighed (accurate to 0.001g).

Moved 50mLDMAC (4.3), sealed and weighed again (accurate to 0.001g). Inserted into the hollow needle (with a mini two-way valve), weigh again (Accurate to 0.001g). In the hood, the hollow needle valve is placed in the open state, the needle will be inserted into the DMAC below the liquid level, adding to the bottle Into 0.25g1,3- butadiene (4.1), with a needle (valve in the OFF state) again weighed (accurate to 0.001g). Remove the needle, accurate calculation 1,3-butadiene concentration. Vial headspace should be as small as possible, protected from light and stored at -20 °C, valid for three months, or stored at 4 °C, there Term less than one week.

4.5 1,3-Butadiene standard solution (500µg/mL). accurate Pipette 18.0mLDMAC (4.3) in

20mL vial (5.3, containing Septum and aluminum cap), the seal. With a syringe (5.4) through the septum injection 2.0mL 1,3-butadiene standard stock solution (4.4) and mix thoroughly.