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

GB/T 15904-2018

Replacing GB/T 15904-1995

Rubber - Determination of polyisoprene content

橡胶 聚异戊二烯含量的测定

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009. This standard replaces GB/T 15904-1995 Determination of Polyisoprene in Rubber. Compared with GB/T 15904-1995, the main technical changes are as follows:

- Modified the standard name;
- Added warnings;
- Modified normative references (see Chapter 2, Chapter 2 of the.1995 edition);
- Removed the reagent "Trichloromethane (GB/T 682)" (1995 version 4.2);
- Modify "100mL single-mouth digestion flask" to "100mL three digestion flask" (see Figure 1,.1995 version of Figure 1);
- Increased analytical balance (see 5.4);
- Increased recommended temperature for distillation (see note in 6.4.2);
- Increased titration endpoint determination method (see 6.6.1);
- Modify the "acetone-trichloromethane (32.68) mixed solvent" as "acetone solvent" (see 7.2,.1995 version 7.2). This standard is proposed by China Petroleum and Chemical Industry Federation. This standard is sub-committee of the General Test Method for National Rubber and Rubber Products Standardization Technical Committee (SAC/TC35/SC2) In the mouth. Drafters of this standard. Fushun Yi Kesi New Materials Co., Ltd., Xishuangbanna Comprehensive Quality and Technical Supervision Center, Beijing Municipal physical and chemical analysis and testing center, Beijing Rubber Industry Research and Design Institute, Shenyang City Chemical School. The main drafters of this standard. Lin Qingju, Wang Longqing, Li Baowei, Bi Xuerui, Fan Yijing, Zhao Jianye, Cang Feifei, Zhang Cuicui, Niu Huafeng, Xiao Rui, Ding Xiaoying, Wang Chunlong. The previous versions of the standard replaced by this standard are.
- GB/T 15904-1995. Rubber polyisoprene content determination Warning-People using this standard should be familiar with regular laboratory practices. This standard does not indicate all safety issues related to it question. It is the user's responsibility to take

appropriate safety and health measures and to ensure compliance with the relevant provisions of national laws and regulations.

Note. Some of the steps specified in this standard may generate some substances or waste, which may bring danger to the local environment harm. After use, these substances should be handled safely and disposed of with reference to appropriate documents.

1 Scope

GB/T 15904-2018 is the Chinese national standard on rubber - determination of polyisoprene content, in the field of rubber and plastic industries. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 15 March 2018 by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China; Standardization Administration of China, and has been in force since 1 October 2018. Classification: ICS 83.060, CCS G40. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

1.1 This standard specifies the determination method for the content of polyisoprene in rubber, ie natural rubber, isoprene, balata, and gutta-percha. Including natural, isoprene latex solids, solid rubber and vulcanized rubber or unvulcanized rubber.

1.2 The complexing agents in soft glue, such as carbon black, mineral oil and sulfur, have no interference effect (see Tables 1 and 7.2). If there is vinyl acetate polymerization This method does not apply.

1.3 This method is applicable to the combination of rubber and butylbenzene, butadiene and nitrile rubber described in 1.1. If halogenated rubber is available, the measurement procedure must be corrected according to 6.6.3. Because the halogenated rubber can also react with chromic acid and cause some interference, if It is the main body of the combined glue that may hinder the reaction of polyisoprene with chromic acid. Therefore, check and eliminate with a known mixture containing interfering rubber Is it complete?

1.4 This method is also suitable for the determination of polyisoprene content in reclaimed rubber, but the measured value is always lower than the estimated value.

1.5 In addition to the various rubbers described in 1.3, if there are other rubbers (eg. chlorosulfonated polyethylene rubber, ethylene propylene diene rubber, butyl rubber, chlorine Butyl rubber and brominated butyl rubber), the digestion time needs to be adjusted. The measured value needs to be similar and corrected by comparison with the results obtained by using glue, otherwise Method does not apply. The difference in the polysulfide rubber used in the rubber composition was greatest (see Table 2).

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only dated versions apply to this article. For undated references, the latest version (including all amendments) applies to this document.

GB/T 601 Chemical Reagent Standard Titration Solution

GB/T 3516 Determination of Rubber Solvent Extracts

GB/T 4497.1 Determination of total sulfur content of rubber - Part 1. Oxygen cylinder combustion method

GB/T 6682 Analysis Laboratory Water Specifications and Test Methods

GB/T 8290 concentrated natural rubber latex sampling

GB/T 15340 Natural and synthetic raw rubber sampling and sample preparation method

3 Principle

The polyisoprene in the sample is digested with a mixture of sulfuric acid and chromic acid, and the formed acetic acid is distilled off with steam, and the gas is distilled to remove the distillate. Carbon dioxide. Then acetic acid was titrated with sodium hydroxide solution. Under the specified test conditions, the yield of acetic acid from isoprene units was 75%, and the results were calculated accordingly.