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

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**Rubber, raw natural, and rubber latex, natural - Determination of
nitrogen content - Micro Dumas combustion method**

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foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for Standardization Work Part 1. Structure and Drafting Rules for Standardization Documents" drafting.

This document is equivalent to ISO 19051.2015 "Determination of Nitrogen Content in Natural Raw Rubber and Natural Latex by Micro-Dumas Combustion Method".

A chapter "Terms and Definitions" has been added to this document.

The following minimal editorial changes have been made to this document.

--- In order to coordinate with the existing standard, change the name of the standard to "Determination of Nitrogen Content in Natural Raw Rubber and Natural Rubber Latex Micro-Dumas Combustion Law".

Please note that some contents of this document may refer to patents. The issuing agency of this document assumes no responsibility for identifying patents.

Introduction

Dumas (Dumas) combustion method has been widely used in countries all over the world, it can accurately and quickly determine the nitrogen content. With wet chemical Kjeldahl (Kjel-

Dahl) nitrogen determination method, Dumas combustion method has the advantages of rapidity, safety and environmental friendliness. Representative analysis of common natural products

Larger samples of 1 g or more are required.

The nitrogen content of natural rubber is related to the protein content. The protein content of natural rubber depends on the source and the processing method used.

The nitrogen content of natural raw rubber is usually 0.3%~0.6%. The nitrogen content of general latex products is lower than that of "dry" rubber, about 0.2%. However,

The "glue clear" rubber with higher protein content has a significantly higher nitrogen content, ranging from 1.5% to 2.5%.

This test method determines the nitrogen content in the shortest time possible, and will play a helpful role in laboratory quality control tests.

Determination of nitrogen content in raw natural rubber and natural rubber latex

Micro Dumas Combustion

Caution 1 --- Personnel using this document should have practical experience in formal laboratory work. This document does not indicate all possible safety

question. It is the user's responsibility to take appropriate safety and health measures and ensure compliance with the relevant national laws and regulations.

Warning 2 --- Some steps specified in this document may involve or generate substances or wastes that may cause harm to the local environment. should refer to

Appropriate safe handling and disposal documentation.

1 Scope

This document describes a test method for the determination of the nitrogen content of natural raw rubber and latex latex using the micro-Dumas combustion method.

This method is applicable to the determination of the nitrogen content of natural raw rubber and natural latex.

2 Normative references

The contents of the following documents constitute the essential provisions of this document through normative references in the text. Among them, dated references

For documents, only the version corresponding to the date is applicable to this document; for undated reference documents, the latest version (including all amendments) is applicable to

this document.

ISO 123 latex sampling (Rubberlatex-Sampling)

Note. GB/T 8290-2021 latex sampling (ISO 123.2001, MOD)

Note. GB/T 8298-2017 Determination of total solid content of latex (ISO 124.2014, MOD)

Note. GB/T 15340-2008 Natural and synthetic raw rubber sampling and sample preparation method (ISO 1795.2000, IDT)

Note. GB/T 25269-2010 Guidelines for Calibration of Rubber Test Equipment (ISO 18899.2004, IDT)

3 Terms and Definitions

This document does not have terms and definitions that need to be defined.

ISO and IEC have established terminology databases for standardization purposes. The websites are as follows.

4 principles

Nitrogen in rubber samples is converted to nitrogen/nitrogen oxides during combustion (furnace temperature about 1000 °C). If other elements are present, this

These elements are also transformed into different combustion products. These additional combustion products are removed using a range of absorbents.

The combustion products are carried out of the combustion chamber by an inert carrier gas (such as helium) and passed through the heated (about 600°C) high-purity copper. high purity copper

Place in the bottom of the firebox or another furnace. The role of high-purity copper is to remove unconsumed oxygen during the initial combustion stage and to transfer all nitrogen