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

GB/T 3510-2023

Replacing GB/T 3510-2006

**Rubber, unvulcanized - Determination of plasticity -
Rapid-plastimeter method**

未硫化橡胶 塑性的测定 快速塑性计法

(English Translation)

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents" Drafting:

This document replaces GB/T 3510-2006 "Rapid Plastometer Method for Determination of Plasticity of Unvulcanized Rubber" and is consistent with GB/T 3510-2006 in addition to structural adjustments and editorial changes, the main technical changes are as follows:

---Added schematic diagrams of parallel plate plastometer and cutting machine punch (see Figure 1 and Figure 2);

---Added provisions for heating devices and temperature control systems (see 5.1:6);

--- Added regulations on the type and cutting size of pad paper for testing (see 5.3);

---Changed the regulations on specimen thickness (see Chapter 6, Chapter 5 of the:2006 edition);

---Added relevant provisions for sample conditioning (see Chapter 6);

---Changed the relevant provisions for calibration (see Chapter 7, Chapter 6 of the:2006 edition):

This document is equivalent to ISO :2007:2018 "Rapid plastometer method for determination of plasticity of unvulcanized rubber":

Please note that some content in this document may be subject to patents: The publisher of this document assumes no responsibility for identifying patents:

1 Scope

This document describes a rapid method for determining the plasticity of raw and unvulcanized rubber:

This document also applies to the determination of plasticity retention (PRI) (see ISO 2930):

2 Normative reference documents

The contents of the following documents constitute essential provisions of this document through normative references in the text: Among them, the dated quotations for undated referenced documents, only the version corresponding to that date applies to this document; for undated referenced documents, the latest version (including all amendments) applies to this document:

Note: GB/T 15340-2008 Natural and synthetic raw rubber sampling and sample preparation methods (ISO 1795:2000, IDT) Note: GB/T 25269-2010 Rubber testing equipment calibration guide (ISO 18899:2004, IDT)

3 Terms and definitions

The following terms and definitions apply to this document:

Plasticity value plasticity number the plasticity result is expressed as the thickness value of the specimen after deformation under specified compression force, time and temperature conditions:

4 Principles

The disc-shaped sample is quickly compressed between two small parallel pressing plates to a fixed thickness of 1 mm and held for 15 seconds to achieve the desired thickness with the pressing plates:

temperature balance between them: Then apply a constant compression force of $100\text{N} \pm 1\text{N}$ to the sample and maintain it for 15s: The specimen measured at the end of this period thickness as a result of plasticity:

5 Instruments

5.1

The parallel plate plastometer consists of the following components:

5.1.1

Pressure plate

Two parallel circular plates with flat and smooth surfaces, one of which can move parallel to the other: Comes with both pressure plates Equipped with appropriate heating devices and a jacket to maintain the test sample and the surrounding area at the specified test temperature: