

ICS 83.060

CCS G 35



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

GB/T 30918-2022

Replacing GB/T 30918-2014

**Non-oil-extended solution polymerized isoprene rubber (IR) -
Evaluation procedures**

Issued on: December 30, 2022

Implemented on: July 1, 2023

**Issued by: State Administration for Market Regulation, China National
Standardization Administration**

Table of Contents

Preface	
1 Scope	1
2 Normative references	1
3 Terms and Definitions	2
4 Sampling and sample preparation	2
5 Physical and chemical tests of raw rubber	2
5.1 Mooney viscosity	2
5.2 Volatile matter	2
5.3 Ash content	2
6 Preparation of rubber compound samples for evaluation	2
6.1 Standard test formula	2
6.2 Procedure	3
6.2.1 Equipment and procedures	3
6.2.2 Mixing procedure of open mill	3
6.2.3 Laboratory internal mixer (LIM) mixing procedure	4
7 Evaluation of vulcanization characteristics	6
7.1 Evaluation of disc oscillating vulcanizer	6
7.2 Evaluation of rotorless vulcanizer	6
8 Tensile stress-strain performance evaluation of vulcanized rubber	7
9 Precision	7
10 Test report	7
Appendix A (Informative) Precision of Vulcanization Characteristics of Open Mixer and Laboratory Mixer	8
Appendix B (Informative) Natural Rubber Precision	10

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 replaces GB/T 30918-2014 "Evaluation method for non-oil-extended solution polymerized isoprene rubber (IR)", and

Compared with GB/T 30918-2014, except for structural adjustment and editorial changes, the main technical changes are as follows.

- Added "terms and definitions" (see Chapter 3);
- Increased the determination method of volatile matter (see 5.2);
- Increased the determination method of ash (see 5.3);
- Changed the mixing procedure of the laboratory internal mixer (LIM) as a note (see 6.2.3, 5.2.3 of the.2014 edition);
- Changed the evaluation method of vulcanization characteristics (see Chapter 7, Chapter 6 of the.2014 edition);
- Changed the symbol of the vulcanization characteristic parameters measured by the rotorless vulcanizer (see 7.2, 6.2 of the.2014 edition).

This document is modified to adopt ISO 2303.2019 "Isoprene Rubber (IR) Non-oil-extended Solution Polymerization Evaluation Method".

The technical differences between this document and ISO 2303.2019 and their reasons are as follows.

- Regarding normative reference documents, modify ISO 6502-1 to ISO 6502-3, and other normative reference documents are related to international standards

Chinese file replacement for consistency correspondence (see Chapter 2);

- Increased the normative reference to GB/T 9881 (see Chapter 3), to facilitate the search for related terms;
- Increase the normative reference to GB/T 4498.2 (see 5.3) to meet the needs of users;
- Changed the referenced documents (see 7.2) for the evaluation of vulcanization characteristics by the rotorless vulcanizer to meet the needs of users;
- Changed the symbol of the vulcanization characteristic parameters measured by the rotorless vulcanizer (see 7.2, Chapter 10).

The following editorial changes have been made to this document.

- Deleted the relevant content of "Double Conical Blender and Waring Agitator" (see the note to 6.2.3.2 in ISO 2303.2019);
- Increased the average value (see Table A.1 and Table A.2);
- Adjusted the order of the parameters in the Appendix B (informative) table (see Table B.1 to Table B.4);
- Added footnotes to the table in Appendix B (informative) (see Table B.2);

--- Added Appendix C (informative) "Precision of ASTM D3403".

Please note that some contents of this document may refer to patents. The issuing authority of this document does not assume the right to identify patents.

1 Scope

This document describes general non-oil-extended solution-polymerized isoprene rubber (IR).

---Physical and chemical test methods for raw rubber;

---Standard reference materials, standard test recipes, equipment and operating procedures used to evaluate vulcanization characteristics.

This document applies to the evaluation of non-oil-extended solution polymerized isoprene rubber (IR).

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.

GB/T 528 Determination of tensile stress-strain properties of vulcanized rubber or thermoplastic rubber (GB/T 528-2009, ISO 37.

2005, IDT)

GB/T 1232.1 Determination of unvulcanized rubber with a disc shear viscometer - Part 1.Determination of Mooney viscosity

(GB/T 1232.1-2016, ISO 289-1.2014, IDT)

GB/T 2941 Rubber Physical Test Methods Specimen Preparation and Adjustment General Procedures (GB/T 2941-2006, ISO 23529.

2004, IDT)

GB/T 4498.1 Determination of Rubber Ash Content Part 1.Muffle Furnace Method (GB/T 4498.1-2013, ISO 247.2006,

MOD)

GB/T 4498.2 Determination of Rubber Ash Content Part 2.Thermogravimetric Analysis

GB/T 6038 Rubber test compound batching, mixing and vulcanization equipment and operating procedures (GB/T 6038-2006, ISO 2393.

1994, MOD)

GB/T 9881 Rubber Terminology

GB/T 15340 Sampling of natural and synthetic raw rubber and its sample preparation method (GB/T 15340-2008, ISO 1795.2000, IDT)

GB/T 24131.1 Determination of volatile content of raw rubber - Part 1. Hot roll method and oven method (GB/T 24131.1-

2018, ISO 248-1.2011, MOD)

GB/T 24131.2 Determination of volatile content of raw rubber - Part 2. Heating loss of automatic analyzer with infrared drying unit

Heavy method (GB/T 24131.2-2017, ISO 248-2.2012, MOD)

ISO 6502-2 Measurement of vulcanization properties of rubber using a vulcanometer Part 2. Disk oscillation vulcanometer method (Rubber-Meas-

ISO 6502-3 Measurement of vulcanization properties of rubber using a vulcanometer Part 3. Rotorless vulcanometer method (Rubber-