



BSI Standards Publication

## Styrene-butadiene rubber (SBR) — Emulsion- and solution-polymerized types — Evaluation procedures

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## National foreword

This British Standard is the UK implementation of ISO 2322:2023. It supersedes BS ISO 2322:2014, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PRI/50, Raw materials (including latex) for use in the rubber industry.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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## **Styrene-butadiene rubber (SBR) — Emulsion- and solution-polymerized types — Evaluation procedures**

*Caoutchouc butadiène-styrène (SBR) — Types polymérisés en  
émulsion et en solution — Méthodes d'évaluation*



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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 45, *Rubber and rubber products*, Subcommittee SC 3, *Raw materials (including latex) for use in the rubber industry*.

This seventh edition cancels and replaces the sixth edition (ISO 2322:2014), which has been technically revised.

The main changes are as follows:

- update of the normative references in [Clause 2](#) and addition of a [Clause 3](#) for terms and definitions;
- addition of batch factor of alternative test formulations for oil-extended types in [Table 3 \(6.2\)](#);
- addition of mill-mixing procedure of the test formulations for oil-extended types ([6.3.2.2](#)).

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

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# Styrene-butadiene rubber (SBR) — Emulsion- and solution-polymerized types — Evaluation procedures

**WARNING** — Persons using this document should be familiar with normal laboratory practice. This document does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user to establish appropriate safety and health practices.

## 1 Scope

This document specifies:

- physical and chemical tests on raw rubbers;
- standard materials, standard test formulations, equipment, and processing methods for evaluating the vulcanization characteristics of emulsion- and solution-polymerized styrene-butadiene rubbers (SBRs), including oil-extended rubbers.

It applies to those rubbers listed in [Table 1](#) which are normally used in vulcanized form.

**Table 1 — Types of raw styrene-butadiene rubber**

Rubber (oil-extended or non-oil-extended)	Styrene		
	Type of copolymer	Total content % mass fraction	Block content % mass fraction
<b>Series A</b>			
Emulsion SBR	Random	≤50	0
Solution SBR	Random	≤50	0
Solution SBR	Partial block	≤50	≤30
<b>Series B</b>			
Emulsion SBR	Random	>50	0
Solution SBR	Random	>50	0
Solution SBR	Partial block	≤50	>30

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 37, *Rubber, vulcanized or thermoplastic — Determination of tensile stress-strain properties*

ISO 247-1:2018, *Rubber — Determination of ash — Part 1: Combustion method*

ISO 247-2:2018, *Rubber — Determination of ash — Part 2: Thermogravimetric analysis (TGA)*

ISO 248-1, *Rubber, raw — Determination of volatile-matter content — Part 1: Hot-mill method and oven method*

ISO 248-2, *Rubber, raw — Determination of volatile-matter content — Part 2: Thermogravimetric methods using an automatic analyser with an infrared drying unit*