INTERNATIONAL STANDARD

ISO 17564

Second edition
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Raw hydrogenated nitrile rubber (HNBR) — Determination of residual unsaturation by iodine value

Caoutchouc nitrile hydrogéné (HNBR) brut — Détermination de l'insaturation résiduelle par l'indice d'iode

Reference number
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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 17564 was prepared by Technical Committee ISO/TC 45, *Rubber and rubber products*, Subcommittee SC 2, *Testing and analysis*.

This second edition cancels and replaces the first edition (ISO 17564:2001), which has been revised primarily to make the ranges of test portion sizes in Table 1 clearer, to correct the equation in Clause 7 and to include new precision data (now in Annex B).

Raw hydrogenated nitrile rubber (HNBR) — Determination of residual unsaturation by iodine value

WARNING — Persons using this International Standard should be familiar with normal laboratory practice. This standard 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 and to ensure compliance with any national regulatory conditions.

CAUTION — Certain procedures specified in this International Standard may involve the use or generation of substances, or the generation of waste, that could constitute a local environmental hazard. Reference should be made to appropriate documentation on safe handling and disposal after use.

1 Scope

This International Standard specifies a method using Wijs' solution to determine the iodine value (i.e. the residual unsaturation) of raw hydrogenated nitrile rubber (HNBR).

2 Normative references

The following referenced documents are indispensable for the application 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 1795, *Rubber, raw natural and raw synthetic — Sampling and further preparative procedures*

3 Principle

A sample of HNBR is dissolved in chloroform. A known excess of Wijs' solution is added to the solution and a fixed time is allowed for addition of iodine to the residual unsaturation in the HNBR. Unreacted Wijs' solution is then neutralized with potassium iodide solution, the iodine thus liberated titrated with standard sodium thiosulfate and the iodine value (residual unsaturation) calculated.

4 Reagents

During the analysis, unless otherwise stated, use only reagents of recognized analytical grade.

4.1 Water: During the analysis, use only distilled or demineralized water or water of equivalent purity.

4.2 Chloroform.

WARNING — Chloroform is a harmful solvent if swallowed or inhaled and irritating to skin. Special safety precautions should therefore be taken, including the use of a fume hood.

4.3 Wijs' solution (see Annex A).

4.4 100 g/l aqueous potassium iodide solution.