

INTERNATIONAL STANDARD

ISO
3900

Second edition
1995-12-15

Rubber — Nitrile latex — Determination of bound acrylonitrile content

*Caoutchouc — Latex de nitrile — Détermination de la teneur en
acrylonitrile lié*



Reference number
ISO 3900:1995(E)

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.

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.

International Standard ISO 3900 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 second edition cancels and replaces the first edition (ISO 3900:1976), which has been technically revised.

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International Organization for Standardization

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WARNING — Persons using this 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.

1 Scope

This International Standard specifies a method for the determination of the bound acrylonitrile content of emulsion-polymerized NBR latices having a bound acrylonitrile content, expressed as a percentage of the polymer content, of between 18 % and 45 %. The method is also applicable to, for example, carboxylic-nitrile-butadiene (XNBR) latices and nitrile-isoprene (NIR) latices.

NOTE 1 The determination includes any water-insoluble nitrogen-containing additives present in the latex.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 123:1985, *Rubber latex — Sampling*.

ISO 124:—¹⁾, *Latex, rubber — Determination of total solids content*.

1) To be published. (Revision of ISO 124:1992)

2) To be published. (Revision of ISO 1656:1988)

ISO 1407:1992, *Rubber — Determination of solvent extract*.

ISO 1656:—²⁾, *Rubber, raw natural, and rubber latex, natural — Determination of nitrogen content*.

3 Principle

A film is prepared from the latex and then extracted with water to remove water-soluble nitrogen-containing material, and finally dried to constant mass. The dry film is analysed by the method laid down in ISO 1656. A known mass of the film is digested with a mixture of sulfuric acid, potassium sulfate and catalyst to convert the nitrogen present into ammonium hydrogen sulfate. The mixture is made alkaline and the liberated ammonia distilled and absorbed in a solution of boric acid. The bound acrylonitrile content is calculated from the volumes of standard volumetric solution required in the test and blank titrations.

NOTE 2 Some automatic analysers utilize the micro-Dumas method to analyse for nitrogen; at present this is not published as an ISO method. It is also noted that, while automatic analysers generally have a high repeatability, there is often poor reproducibility between instruments.

4 Reagents

The reagents specified in ISO 1656 for the semi-micro method shall be used, except that sulfuric acid