



SLOVENSKI STANDARD
SIST EN ISO 4934:2004

01-junij-2004

Nadomešča:
SIST EN 24934:1997

Steel and iron - Determination of sulfur content - Gravimetric method (ISO 4934:2003)

Steel and iron - Determination of sulfur content - Gravimetric method (ISO 4934:2003)

Stahl und Eisen - Bestimmung des Schwefelgehaltes - Gravimetrisches Verfahren (ISO 4934:2003)

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Aciers et fontes - Dosage de soufre - Méthode gravimétrique (ISO 4934:2003)

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Ta slovenski standard je istoveten z: EN ISO 4934:2003

ICS:

77.040.30	Kemijska analiza kovin	Chemical analysis of metals
77.080.01	Železne kovine na splošno	Ferrous metals in general

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 4934

December 2003

ICS 77.080.01

Supersedes EN 24934:1989

English version

Steel and iron - Determination of sulfur content - Gravimetric method (ISO 4934:2003)

Aciers et fontes - Dosage de soufre - Méthode gravimétrique (ISO 4934:2003)

Stahl und Eisen - Bestimmung des Schwefelgehaltes - Gravimetrisches Verfahren (ISO 4934:2003)

This European Standard was approved by CEN on 10 December 2003.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and United Kingdom.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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EN ISO 4934:2003 (E)

CORRECTED 2004-03-03

Foreword

Le présent document (EN ISO 4934:2003) a été élaboré par le Comité Technique ISO/TC 17 "Acier" en collaboration avec le Comité Technique ECISS/TC 20 "Analyses chimiques" dont le secrétariat est tenu par le SIS.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2004, and conflicting national standards shall be withdrawn at the latest by June 2004.

This document supersedes EN 24934:1989.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom.

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Endorsement notice

The text of ISO 4934:2003 has been approved by CEN as EN ISO 4934:2003 without any modifications.

NOTE Normative references to International Standards are listed in Annex ZA (normative).

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Annex ZA (normative)

Normative references to international publications with their relevant European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

NOTE Where an International Publication has been modified by common modifications, indicated by (mod.), the relevant EN/HD applies.

Publication	Year	Title	EN	Year
ISO 3696	1987	Water for analytical laboratory use - Specification and test methods	EN ISO 3696	1995

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ISO 14284	1996	Steel and iron – Sampling and preparation of samples for the determination of chemical composition	EN ISO 14284	2002
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INTERNATIONAL
STANDARD

ISO
4934

Second edition
2003-12-15

**Steel and iron — Determination of sulfur
content — Gravimetric method**

Aciers et fontes — Dosage du soufre — Méthode gravimétrique

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Reference number
ISO 4934:2003(E)

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Published in Switzerland

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ISO 4934:2003(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.

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 4934 was prepared by Technical Committee ISO/TC 17, *Steel*, Subcommittee SC 1, *Methods of determination of chemical composition*.

This second edition cancels and replaces the first edition (ISO 4934:1980), which has been technically revised.

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Steel and iron — Determination of sulfur content — Gravimetric method

1 Scope

This International Standard specifies a gravimetric method for the determination of the sulfur content in steels and iron, excluding steels containing selenium. The method is particularly suitable as a reference method for the standardization of samples on which certified standard values are to be established.

The method is applicable to a sulfur content between 0,003 % (mass fraction) and 0,35 % (mass fraction).

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 565, *Test sieves — Metal wire cloth, perforated metal plate and electroformed sheet — Nominal sizes of openings*

ISO 3696, *Water for analytical laboratory use — Specification and test methods*

ISO 5725-1, *Accuracy (trueness and precision) of measurement methods and results — Part 1: General principles and definitions*

ISO 5725-2, *Accuracy (trueness and precision) of measurement methods and results — Part 2: Basic method for the determination of repeatability and reproducibility of a standard measurement method*

ISO 5725-3, *Accuracy (trueness and precision) of measurement methods and results — Part 3: Intermediate measures of the precision of a standard measurement method*

ISO 14284, *Steel and iron — Sampling and preparation of samples for the determination of chemical composition*

3 Principle

Dissolution of a test portion in dilute nitric acid in the presence of bromine, or in the mixed acid of nitric acid and hydrochloric acid in the presence of bromine (with the aid of an appropriate device to prevent sulfur losses).

Addition of perchloric acid and evaporation of the solution until white fumes of perchloric acid are evolved.

Filtration of the solution and removal of the dehydrates of silicon, tungsten, niobium, etc.

Addition of a determined quantity of sulfate ions to aid precipitation.

Chromatographic separation of the sulfate ions from the test solution by adsorption on an alumina column, and elution using an ammonium hydroxide solution.

Precipitation of the sulfate ions as barium sulfate under controlled conditions and filtering, washing, heating and weighing.