
**Steel and iron — Determination of tin
content — Flame atomic absorption
spectrometric method (extraction as
Sn-SCN)**

*Aciers et fontes — Dosage de l'étain — Méthode par spectrométrie
d'absorption atomique dans la flamme (extraction comme Sn-SCN)*



Reference number
ISO 15353:2001(E)

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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 3.

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 International Standard may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 15353 was prepared by Technical Committee ISO/TC 17, *Steel*, Subcommittee SC 1, *Methods of determination of chemical composition*.

Annexes A and B of this International Standard are for information only.

Annex A
Annex B

Steel and iron — Determination of tin content — Flame atomic absorption spectrometric method (extraction as Sn-SCN)

1 Scope

This International Standard specifies a method for the determination of tin in steel and iron by means of flame atomic absorption spectrometry. The method is applicable to tin contents in the range 0,001 % by mass to 0,1 % by mass.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 648:1977, *Laboratory glassware — One-mark pipettes*.

ISO 1042:1998, *Laboratory glassware — One-mark volumetric flasks*.

ISO 3696:1987, *Water for analytical laboratory use — Specification and test methods*.

ISO 5725-1:1994, *Accuracy (trueness and precision) of measurement methods and results — Part 1: General principles and definitions*.

ISO 5725-2:1994, *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 5725-3:1994, *Accuracy (trueness and precision) of measurement methods and results — Part 3: Intermediate measures of the precision of a standard measurement method*.

ISO 14284:1996, *Steel and iron — Sampling and preparation of samples for the determination of chemical composition*.

3 Principle

Dissolution of a test portion in hydrochloric and nitric acids. Formation of Sn-SCN complex and extraction of the complex into 4-methyl-2-pentanone (isobutyl methyl ketone).

Aspiration of the organic solution into a dinitrogen monoxide-acetylene flame. Spectrometric measurement of the atomic absorption of the 224,6 nm spectral line emitted by a tin hollow cathode lamp.

High purity tin metal dissolved as standard solution is used as reference material for calibration graphs.

4 Reagents

Use only reagents of recognized analytical grade, unless otherwise stated.

4.1 Water, complying with grade 2 as defined in ISO 3696.