

Steel and iron - Sampling and preparation of samples
for the determination of chemical composition (ISO
14284:2022)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

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|---------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
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English Version

Steel and iron - Sampling and preparation of samples for
the determination of chemical composition (ISO
14284:2022)

Aciers et fontes - Prélèvement et préparation des
échantillons pour la détermination de la composition
chimique (ISO 14284:2022)

Eisen und Stahl - Entnahme und Vorbereitung von
Proben für die Bestimmung der chemischen
Zusammensetzung (ISO 14284:2022)

This European Standard was approved by CEN on 1 October 2022.

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COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

European foreword

This document (EN ISO 14284:2022) has been prepared by Technical Committee ISO/TC 17 "Steel" in collaboration with Technical Committee CEN/TC 459/SC 2 "Methods of chemical analysis for iron and steel" the secretariat of which is held by 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of an identical text or by endorsement, at the latest by May 2023, and conflicting national standards shall be withdrawn at the latest by May 2023.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN ISO 14284:2002.

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Endorsement notice

The text of ISO 14284:2022 has been approved by CEN as EN ISO 14284:2022 without any modification.

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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).

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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.

This document was prepared by Technical Committee ISO/TC 17, *Steel*, Subcommittee SC 1, *Methods of determination of chemical composition*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 459/SC 2, *Methods of chemical analysis for iron and steel*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 14284:1996), which has been technically revised. The main changes are as follows:

- figures updated;
- [Clause 3](#) updated;
- text updated;
- new sampling probes added;
- units changed to SI units.

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.

Steel and iron — Sampling and preparation of samples for the determination of chemical composition

1 Scope

This document specifies methods for sampling and sample preparation for the determination of the chemical composition of pig irons, cast irons and steels.

Methods are specified for both liquid and solid metal.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1

chemical method

method for the determination of chemical composition in which the *test sample* (3.16) or the *test portion* (3.17) is submitted to chemical reactions

3.2

physical method of analysis

physical method

method for the determination of chemical composition in which the determination is carried out without submitting the *test sample* (3.16) to chemical reactions

EXAMPLE Optical emission spectrometric (OES) method or X-ray fluorescence spectrometric (XRF) method.

3.3

thermal method of analysis

thermal method

method for the determination of chemical composition in which the *test sample* (3.16) is submitted to a process of heating, combustion or fusion

3.4

melt

liquid metal from which a *sample* (3.25) is taken

3.5

spoon sampling

method in which a *sample* (3.25) is taken from the *melt* (3.4), or during the pouring of the melt, using a long-handled spoon and poured into a small mould

3.6

spoon sample

sample (3.25) obtained from *spoon sampling* (3.5)