# INTERNATIONAL STANDARD

# ISO 5416

Second edition
1997-08-01



# Direct reduced iron — Determination of metallic iron content — Bromine-methanol titrimetric method

*Minerais de fer préréduits — Dosage du fer métallique — Méthode titrimétrique au brome-méthanol*


Reference number
ISO 5416:1997(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 5416 was prepared by Technical Committee ISO/TC 102, *Iron ores*, Subcommittee SC 2, *Chemical analysis*.

This second edition cancels and replaces the first edition (ISO 5416:1987), which has been technically revised.

Annex A form an integral part of this International Standard. Annexes B to E are for information only.



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# Direct reduced iron — Determination of metallic iron content — Bromine-methanol titrimetric method

**WARNING — This International Standard may involve hazardous materials, operations and equipment. This International Standard does not purport to address all of the safety issues associated with its use. It is the responsibility of the user to establish appropriate health and safety practices and determine the applicability of regulatory limitations prior to use.**

## 1 Scope

This International Standard specifies a titrimetric method for the determination of the metallic iron content of reduced iron ores (direct reduced iron: DRI).

This method is applicable to metallic iron contents between 15 % ($m/m$) and 95 % ($m/m$) in DRI.

NOTE — The term "metallic iron" means those forms of iron not bonded to oxygen or not present as pyrite.

## 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 385-1:1984, *Laboratory glassware — Burettes — Part 1: General requirements.*

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

ISO 1042:1983, *Laboratory glassware — One-mark volumetric flasks.*

ISO 2596:1994, *Iron ores — Determination of hygroscopic moisture in analytical samples — Gravimetric and Karl Fischer methods.*

ISO 2597-1:1994, *Iron ores — Determination of total iron content — Part 1: Titrimetric method after tin(II) chloride reduction.*

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

ISO 10835:1995, *Direct reduced iron — Sampling and sample preparation — Manual methods for reduced pellets and lump ores.*