PD ISO/TS 2597-4:2019

BSI Standards Publication

Iron ores — Determination of total iron content

Part 4: Potentiometric titration method

bsi.

National foreword

This Published Document is the UK implementation of ISO/TS 2597-4:2019.

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A list of organizations represented on this committee can be obtained on request to its secretary.

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Contents

Page

Foreword

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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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This document was prepared by Technical Committee ISO/TC 102, *Iron ore and direct reduced iron*, Subcommittee SC 2, *Chemical analysis*.

A list of all parts in the ISO 2597 series can be found on the ISO website.

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.

TECHNICAL SPECIFICATION **ISO/TS 2597-4:2019(E)**

Iron ores — Determination of total iron content —

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

1 Scope

This document specifies a potentiometric titration method for the determination of total iron content of iron ores, using potassium dichromate as titrant after reduction of the iron(III) by tin(II) chloride and titanium(III) chloride. The excess reductant is then oxidized by potassium dichromate solution.

This method is applicable to total iron contents between a mass fraction of 29,04 % and a mass fraction of 72,02 % in natural iron ores and iron ore concentrates and agglomerates including sinter products.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 648, *Laboratory glassware — Single-volume pipettes*

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

ISO 2596, *Iron ores — Determination of hygroscopic moisture in analytical samples — Gravimetric, Karl Fischer and mass-loss methods*

ISO 3082, *Iron ores — Sampling and sample preparation procedures*

ISO 7764, *Iron ores — Preparation of predried test samples for chemical analysis*

3 Terms and definitions

No terms and definitions are listed in this document.

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

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

4 Principle

For samples containing not more than a mass fraction of 0,1 % of vanadium, copper or manganese, the test portion is treated with hydrochloric acid in the presence of tin chloride and the residue is filtered, ignited and treated with hydrofluoric and sulfuric acids. The mixture is fused with potassium disulfate and the cold melt is dissolved in water and hydrochloric acid and neutralized with ammonia solution. The precipitate is filtered, washed with water, dissolved with hydrochloric acid and combined with