PD ISO/TS 6084:2022



BSI Standards Publication

Steel and steel products — Vocabulary relating to chemical analysis

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National foreword

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The UK participation in its preparation was entrusted to Technical Committee ISE/102, Methods of Chemical Analysis for Iron and Steel.

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

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© The British Standards Institution 2022
Published by BSI Standards Limited 2022

ISBN 978 0 539 17043 6

ICS 01.040.77; 77.080.20

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This Published Document was published under the authority of the Standards Policy and Strategy Committee on 31 August 2022.

Amendments/corrigenda issued since publication

Date	Text affected

PD ISO/TS 6084:2022

TECHNICAL SPECIFICATION

ISO/TS 6084

First edition
2022-06-07

Steel and steel products — Vocabulary relating to chemical analysis

Reference number
ISO/TS 6084:2022(E)

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Foreword

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

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Introduction

To ensure that communication in a particular domain is effective and that difficulties in understanding are minimized, it is essential that the various participants use the same concepts and concept representations. Unambiguous communication related to analytical chemistry concepts is crucial given the implications that can arise from misunderstandings with regard to equipment.

Different levels of scientific and technical knowledge can lead to widely divergent understandings and assumptions about concepts. The result is poor communication that can lead into an increase of the risk of accidents and duplication of efforts as different define concepts according to their perspectives.

Conceptual arrangement of terms and definitions is based on concepts systems that show corresponding relationships analytical chemistry concepts. Such arrangement provides users with a structured view of the analytical methods and will facilitate common understanding of all related concepts. Besides, concepts systems and conceptual arrangement of terminological data will be helpful to any kind of user because it will promote clear, accurate and useful communication.

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Steel and steel products — Vocabulary relating to chemical analysis

1 Scope

This document defines terms relating to methods of the determination of the chemical composition of steel and steel products.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

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 General terms related to steel and cast iron

3.1.1
alloy steel
steel (3.1.17), other than a stainless steel, that conforms to a specification that requires one or more of the following elements, by mass percent, to have a minimum content equal to or greater than: 0,30 for aluminum; 0,000 8 for boron; 0,30 for chromium; 0,30 for cobalt; 0,40 for copper; 0,40 for lead; 1,65 for manganese; 0,08 for molybdenum; 0,30 for nickel; 0,06 for niobium (columbium); 0,60 for silicon; 0,05 for titanium; 0,30 for tungsten (wolfram); 0,10 for vanadium; 0,05 for zirconium; or 0,10 for any other alloying element, except sulphur, phosphorus, carbon, and nitrogen

[SOURCE: ASTM A941:2018]

3.1.2
austenitic steel
steel (3.1.17) where the structure consists of *austenite* (3.1.3) at ambient temperature

Note 1 to entry: Cast austenitic steels can contain up to about 20 % of *ferrite* (3.1.8).

3.1.3
austenite
solid solution of one or more elements in gamma iron (3.1.19)

3.1.4
boriding
thermochemical treatment of a workpiece to enrich the surface of a workpiece with boron

Note 1 to entry: The medium in which boriding takes place should be specified, e.g. pack boriding, paste boriding, etc.

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