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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 47992-2026

Steel - Order of chemical elements in standards

钢 标准中化学元素的排序

(English Translation)

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Foreword

This document conforms to GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents".

Drafting is scheduled.

This document is modified to adopt ISO 6306:2020 "Chemical analysis of steel - Order of elements listed in the standard".

Compared with ISO 6306:2020, this document has undergone the following structural adjustments.

--Appendix A has been added.

This document differs significantly from ISO 6306:2020. The relevant clauses are indicated in vertical margins.

Single lines (|) are indicated. A summary of these technical differences and their causes can be found in Appendix A.

The following editorial changes have been made to this document.

--To align with existing standards, the standard name has been changed to "Ordering of Chemical Elements in Steel Standards";

The expression;

--The additional information in Chapter 4, "These groupings have no substantial technical significance, but are considered convenient for remembering the following order," has been removed.

It provides the simplest method and is described as "second most important among alloy steels and stainless steels";

--Rare earth elements (RE) have been added to the examples of sorting two groups of elements in Chapter 4;

--Footnote b in Table 1 has been deleted;

--Added Appendix A (informative) "Technical differences between this document and ISO 6306:2020 and their reasons";

--References have been removed.

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed by the China Iron and Steel Association.

This document is under the jurisdiction of the National Steel Standardization Technical Committee (SAC/TC 183).

1 Scope

This document specifies the order of chemical composition elements in steel standards.

This document is applicable for ranking the chemical composition elements when developing or revising steel standards. Other iron-based alloy standards (excluding cast iron) should refer to this document.

2 Normative references

This document has no normative references.

3 Terms and Definitions

This document does not contain any terms or definitions that need to be defined.

4.The order of chemical elements in steel standards

4.1 The elements are divided into the following three groups.

a) Group 1 includes the five most abundant elements in all types of steel. carbon (C), silicon (Si), manganese (Mn), phosphorus (P), and sulfur (S). It also includes...

Four elements. chromium (Cr), nickel (Ni), molybdenum (Mo), and nitrogen (N).

b) Group 2 consists of elements not specified in Group 1 or Group 3. When the number of elements in Group 2 exceeds one, it is advisable to use the English chemical symbols of the elements.

Arranged alphabetically. For example. aluminum (Al), arsenic (As), boron (B), cobalt (Co), copper (Cu), niobium (Nb), lead (Pb), rare earth elements.

Elements such as RE, tin (Sn), titanium (Ti), vanadium (V), tungsten (W), and zirconium (Zr).

c) The three groups of elements are hydrogen (H) and oxygen (O).

4.2 Elements are arranged in the order of Group 1, Group 2, and Group 3. The recommended element arrangement order for each group is as follows.

a) Group 1 elements. C, Si, Mn, P, S, Cr, Ni, Mo, N;

b) The two groups of elements are arranged in alphabetical order according to their chemical element symbols, such as Al, As, B, Co, Cu, Nb, Pb, RE, Sn, Ti, V, W, Zr;

c) 3 groups of elements. H, O.

4.3 The chemical composition of elements should preferably be expressed as mass fraction (%).

4.4 The maximum values in the chemical composition table should preferably be indicated by "not greater than" or " $\leq$ ", or by adding a footnote or note to the table to provide an explanation.

4.5 When filling in the mass fraction (%) of each element in the chemical composition table, it is advisable to use the number of decimal places shown in Table 1.

Table 1. Number of digits after the decimal point