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

GB/T 6611-2025

Replacing GB/T 6611-2008

Terminology and atlas for titanium and titanium alloys

钛及钛合金术语和图谱

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part

1. Structure and Drafting Rules of Standardization Documents". Drafting. This document replaces GB/T 6611-2008 "Terminology and Metallographic Atlas of Titanium and Titanium Alloys". Compared with GB/T 6611-2008, except for the structure... Aside from adjustments and editorial changes, the main technical changes are as follows:

- a) Some terms and definitions have been changed. alloy (see 3.1.4, 2.1 of the.2008 edition), sponge titanium (see 3.2.1, 3.1 of the.2008 edition), Industrial pure titanium (see 3.2.3, 3.3 in the.2008 edition), alpha-titanium alloys (see 3.2.5, 3.5 in the.2008 edition), near-alpha-titanium alloys (see...) 3.2.6 (3.6 in the.2008 edition), alpha-beta titanium alloys (see 3.2.7 in the.2008 edition), beta titanium alloys (see 3.2.8 in the.2008 edition) 3.8), annealing (see 3.7.3, 4.2 in the.2008 edition), quenching (see 3.7.11, 4.8 in the.2008 edition), alpha-stabilizing elements (see 3.8.3, 5.1 of the.2008 edition), beta-isomorphic stable elements (see 3.8.6, 5.2 of the.2008 edition), martensitic phase transformation initiation temperature (see 3.8.14, 5.8 (2008 edition), martensitic transformation termination temperature (see 3.8.15, 5.9 (2008 edition), equiaxed structure (see...) 3.8.23,

1 Scope

GB/T 6611-2025 is the Chinese national standard covering the vocabulary of titanium with

the micrographs to go with it - the alpha, beta and alpha-beta alloys, the transus and the heat treatments, the wrought structures and the defects, each term illustrated so that two metallurgists mean the same thing by it. At 22,000 words. It replaces GB/T 6611-2008, under the China Nonferrous Metals Industry Association. In force from 1 May 2026. Issued on 5 October 2025, it has been in force since 1 May 2026, replacing GB/T 6611-2008.

This document defines commonly used terminology in the field of titanium and titanium alloys, including general terms, titanium and titanium alloys, raw products, processed products, and melts. The terms and definitions for casting methods, processing methods, heat treatment, microstructure, and appearance defects are provided; microstructure maps and appearance defect maps are also given. This document applies to the production inspection and domestic and international trade of titanium and titanium alloy materials, smelting, casting, and processing products.

2 Normative references

This document has no normative references.

3.1 General Terminology

3.1.1 basic metal element The dominant metallic element in an alloy.

3.1.2 Alloying element To obtain alloys with specific properties, metallic or non-metallic elements are added to or retained in the base metal.

3.1.3 impurity Metallic or nonmetallic elements that are present in metals but were not intentionally added or retained.

3.1.4 Alloy Metallic substances composed of base metal elements and alloying elements and containing impurities.

3.1.5 Other elements Elements that are inherent in the production of titanium and titanium alloys, rather than elements added artificially.

Note. Impurities other than iron, carbon, nitrogen, hydrogen, and oxygen.

3.1.6 wrought alloy Alloys primarily used in the manufacture and processing of products through plastic deformation.

3.1.7 Casting alloy Alloys primarily used in the production of castings.