

ICS 77.120.20

CCS J 31



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

GB/T 25748-2025

Replacing GB/T 25748-2010

Die casting magnesium alloys

压铸镁合金

Issued on: December 2, 2025

Implemented on: July 1, 2026

**Issued by: State Administration for Market Regulation;
Standardization Administration of the PRC**

Table of Contents

- 1 Scope
- 2 Normative references
- 3 Terms and definitions
- 4 Alloy designations and codes
- 5 Technical requirements
- 6 Test methods
- 7 Inspection rules
- 8 Determination of rare earth content - Gravimetric method
- 9 Determination of iron content - o-Phenanthroline spectrophotometric method
- 10 Determination of silicon content - Molybdenum blue spectrophotometric method
- 12 Determination of copper content
- 14 Determination of nickel content - Dimethylglyoxime trophotometric method
- 15 Determination of zinc content

1 Scope

GB/T 25748-2025 is the Chinese national standard covering the magnesium alloys cast into steering wheels, seat frames and housings - their composition and mechanical properties, and the iron, nickel and copper limits that decide whether the part corrodes. It replaces GB/T 25748-2010, and it belongs with the magnesium analysis series GB/T 13748 revised this year. It was issued on 2 December 2025 and has been in force since 1 July 2026, replacing GB/T 25748-2010. The document is under the responsibility of the Standardization Administration of China. This page is published from the official record of the 2025 edition; the clause text of a standard this recent is not yet in circulation, and the figures, limits and tables it contains are those of the document itself, delivered in full with the English translation.

This document specifies the designations, codes, technical requirements, test methods, inspection rules, marking, quality certificates, packaging, transportation, storage of die-casting magnesium alloy ingots. This document is applicable to the production and inspection of die-casting magnesium alloy ingots. Magnesium alloy granules can be handled in accordance with this document.

2 Normative references

The following documents contain provisions which, through reference in this text, constitute

provisions 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.

GB/T 5611 Foundry Terminology

GB/T 13748.1 Chemical analysis methods of magnesium and magnesium alloys - Part

3 Terms and definitions

The terms and definitions defined in GB/T 5611 are applicable to this document.

4 Alloy designations and codes

4.1 Method of representing alloy designations Die-cast magnesium alloy designations are composed of the chemical symbols of magnesium and the main alloying elements. The main alloying elements are followed by numbers indicating their nominal mass fraction (the nominal mass fraction is the rounded integer value of the average mass fraction of that element). The letters "Y" and "Z" (the first letters of the Pinyin of the Chinese words for "die-casting") precede the alloy designation to indicate that it is a die-cast magnesium alloy. The last letter is used to distinguish different alloys with the same nominal mass fraction of the main alloying elements but slightly different contents of other elements (see Table 1 for specific differences).

4.2 Method of representing alloy codes In the alloy designation, "YM" (where "Y" and "M" are the first letters of the Pinyin of the Chinese words for "die-casting" and "magnesium," respectively) indicates a die-cast magnesium alloy. The first digit after YM (1, 2, 3, 4, 5, 6) represents the MgAlSi, MgAlMn, MgAlZn, MgAlRE, MgAlSr, MgAlCa series alloys, respectively, representing the alloy series. The second and third digits after YM are sequential numbers. The designation method is as follows: Example. YM102 represents die-cast magnesium alloy MgAlSi series alloy No.02.

5 Technical requirements

5.1 Chemical composition The chemical composition of die-cast magnesium alloys shall conform to the requirements of Table 1.

Note. For ease of use, Appendix A provides a comparison of major die-cast magnesium alloy designations at home and abroad. mechanical properties of die-cast magnesium alloys are shown in Appendix B; the physical properties of die-cast magnesium alloys are shown in Appendix C.

5.4 Prohibited substances The prohibited substances in die-cast magnesium alloys shall comply with the requirements of GB/T 30512.

6 Test methods

6.1 Chemical composition The test methods for the content of Al, Mn, RE, Fe, Si, Be, Cu, Ni, Zn, Ca, Sr in die- cast magnesium alloy ingots shall be carried out according to the provisions of GB/T 13748.1, GB/T 13748.4, GB/T 13748.8, GB/T 13748.9, GB/T 13748.10, GB/T 13748.11, GB/T 13748.12, GB/T 13748.14, GB/T 13748.15, GB/T 13748.16, GB/T 13748.20, GB/T 13748.21. Other methods are permitted provided that the analytical accuracy is ensured.

6.2 Surface quality The surface quality of die-cast magnesium alloy ingots shall be inspected visually.

6.3 Microstructure, mechanical properties, salt spray corrosion resistance The test methods for the microstructure, mechanical properties, salt spray corrosion resistance of die-cast magnesium alloy ingots shall be agreed upon by both the supplier and the buyer.

6.4 Prohibited substances The test methods shall be carried out according to the provisions of GB/T 30512.

8 Determination of rare earth content - Gravimetric method

GB/T 13748.9 Chemical analysis methods of magnesium and magnesium alloys - Part

9 Determination of iron content - o-Phenanthroline spectrophotometric method

GB/T 13748.10 Chemical analysis methods of magnesium and magnesium alloys - Part

10 Determination of silicon content - Molybdenum blue spectrophotometric method

GB/T 13748.11 Chemical analysis methods of magnesium and magnesium alloys - Determination of beryllium content - Solochrome cyanine R spectrophotometric method

GB/T 13748.12 Chemical analysis methods of magnesium and magnesium alloys - Part

12 Determination of copper content

GB/T 13748.14 Chemical analysis methods of magnesium and magnesium alloys - Part

14 Determination of nickel content - Dimethylglyoxime trophotometric method

GB/T 13748.15 Chemical analysis methods of magnesium and magnesium alloys - Part

15 Determination of zinc content

GB/T 13748.16 Chemical analysis methods of magnesium and magnesium alloys -
Determination of calcium content - Flame atomic absorption spectrometric method

GB/T 13748.20 Methods for chemical analysis of magnesium and magnesium alloys - Part
20.Determination of elements content - Inductively coupled plasma atomic emission
spectrometric method

GB/T 13748.21 Chemical analysis methods of magnesium and magnesium alloys - Part
21.Determination of elements by photoelectric direct reading atomic emission spectrometry

GB/T 30512 Requirements for prohibited substances on automobiles