BSI Standards Publication

Magnesium and magnesium alloys — Wrought magnesium and magnesium alloys

National foreword

This British Standard is the UK implementation of ISO 3116:2019. It supersedes BS ISO 3116:2007, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee NFE/35, Light metals and their alloys.

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

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 79, *Light metals and their alloys*, Subcommittee SC 5, *Magnesium and alloys of cast or wrought magnesium*.

This fifth edition cancels and replaces the fourth edition (ISO 3116:2007), which has been technically revised to include wrought magnesium alloys that have been developed in the past few years.

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.

Introduction

This document classifies the commercially available magnesium alloys into a number of grades suitable for the application to which they might be put.

Some of the alloys referenced in this document can be the subject of a patent or of patent applications and their listing herein is not to be construed in any way as the granting of a licence under such patent rights.

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INTERNATIONAL STANDARD ISO 3116:2019

Magnesium and magnesium alloys — Wrought magnesium and magnesium alloys

1 Scope

This document specifies the chemical composition and mechanical properties of magnesium and magnesium alloys for wrought products in the form of bars and solid sections, tubes and hollow sections, forgings, and plate and sheet.

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 80000-1:2009, *Quantities and units — Part 1: General*

ISO 6892-1, *Metallic materials — Tensile testing — Part 1: Method of test at room temperature*

EN 515, *Aluminium and aluminium alloys — Wrought products — Temper designations*

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 Designation

4.1 Material

The material shall be designated by symbols as given in Tables 1 to 47.

The designation for alloys shall consist of a prefix character “M”, which represents magnesium, and not more than three capital letters representing the alloying elements specified in the greatest amount, arranged in order of decreasing percentages, or in alphabetical order if of equal percentages, followed by the respective percentages rounded off to whole numbers and a serial letter in lower case.

The letters used to represent the alloying elements shall be those in Table 1. The third letter is used when the third largest amount of element is above or equal to 1 wt.%. If the third and fourth largest amount of elements are above or equal to 1, the higher amount of elements is taken; if of equal percentage, the third letter is decided by the producer who developed the alloy.

Table 1 — Letters representing alloying elements

Letters	Element	Name of element	Letters	Element	Name of element
A	Al	Aluminium	N	Ni	Nickel