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Unalloyed aluminium ingots for remelting — Classification and composition

Aluminium non allié en lingots pour refusion — Classification et composition

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Foreword

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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 document 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 4, *Unalloyed (refined) aluminium ingots*.

This second edition cancels and replaces the first edition (ISO 115:2003), which has been technically revised.

The main changes are as follows:

— five grades were added to Table 2.

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.

Unalloyed aluminium ingots for remelting — Classification and composition

1 Scope

This document defines the requirements for grades of unalloyed aluminium ingots intended for remelting. It specifies the classification and designation applicable to these grades, the conditions in which they are produced, their properties and the marks by which they are identified.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

No terms and definitions are listed in this document.

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/

4 Order

The order, in the form agreed upon between the supplier and the purchaser, shall contain the following information:

a) designation of the unalloyed aluminium in accordance with this document or the customer code after agreement between the supplier and the purchaser;

b) specification of the form of the products, including the mass and dimensions of individual ingots and bundles;

c) quantity: mass, in tonnes (quantity tolerances if required);

d) any requirements for certificates of conformity, test and/or analysis reports or inspection certificates;

e) any additional requirements agreed between the supplier and the purchaser.

5 Requirements

5.1 Production and manufacturing processes

The production and manufacturing processes shall be left to the discretion of the manufacturer.

No obligation shall be placed on the manufacturer to use the same processes for subsequent and similar orders.

5.2 Quality control

The supplier shall be responsible for carrying out all inspection and tests required by this document prior to shipment of the product. If the purchaser wishes to inspect the product at the supplier's works, the purchaser shall stipulate this at the time of placing the order.

5.3 Chemical composition

Each grade of unalloyed aluminium, including refined aluminium, with a specified minimum aluminium content shall be in accordance with the designations and chemical composition given in Table 1.

Each grade of unalloyed aluminium without a specified minimum aluminium content shall be in accordance with the designations and chemical compositions given in Table 2.

The compositions, except that for aluminium, shown in Table 1 and Table 2 are given in maximum mass fractions, in per cent.

For the interpretation of the results of chemical analysis, the number representing the result of the determination of an element content shall be rounded to the same number of decimal places as the corresponding number in this document.

The writing rules for designations and chemical compositions shall be applied in accordance with Annex A.

If the purchaser requires content limits for elements not specified in this document, these limits shall be stated on the order, after agreement between the supplier and the purchaser.

Table 1 — Unalloyed aluminium with specified minimum aluminium content — Chemical composition in maximum mass fractions

Designation	Si	Fe	Cu	Mn	Mg	Zn	Ti	Ga	V	Others each	Al min.
Al 99,995[a]	0,002 0	0,002 0	0,002 0	0,001	0,003 0	0,001	0,001	0,002	0,001	0,001	99,995
Al 99,990[a]	0,003 0	0,003 0	0,004 0	0,001	0,003 0	0,001	0,001	0,002	0,001	0,001	99,990
Al 99,99[a]	0,004 0	0,003 0	0,002 0	0,001	0,001 0	0,004	0,002	0,003 0	0,001	0,001	99,99
Al 99,98[a]	0,006	0,006	0,002 0	0,002	0,002	0,004	0,002	0,003	0,001	0,001	99,98
Al 99,97[a]	0,008	0,008	0,004	0,003	0,002	0,005	0,002	0,004	0,001	0,001	99,97
Al 99,94[a]	0,030	0,030	0,005	0,010	0,010	0,010	0,005	0,02	—	0,010	99,94
Al 99,70[a]	0,10	0,20	0,01	—	0,02	0,03	0,02	0,03	0,03	0,03	99,70
Al 99,7E[a, b]	0,07	0,20	0,01	0,005	0,02	0,04	—	—	—	0,03	99,70
Al 99,6E[a, c]	0,10	0,30	0,01	0,007	0,02	0,04	—	—	—	0,03	99,60

[a] Cd + Hg + Pb max. 0,009 5; As max. 0,009.

[b] B max. 0,04; Cr max. 0,004; Mn + Ti + Cr + V max. 0,020.

[c] B max. 0,04; Cr max. 0,005; Mn + Ti + Cr + V max. 0,030.