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

GB/T 1196-2023

Replacing GB/T 1196-2017

Unalloyed aluminium ingots for remelting

重熔用铝锭

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Standardization Administration of China**

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Foreword

This document was drafted in accordance with the rules provided in GB/T 1.1-2020 Directives for Standardization - Part

1.Rules for the Structure and Drafting of Standardizing Documents. This document serves as a replacement of GB/T 1196-2017 Unalloyed Aluminum Ingots for Remelting. In comparison with GB/T 1196-2017, apart from structural adjustments and editorial modifications, the main technical changes are as follows:

a) The V and Ti content requirements are added to the chemical composition, and the requirements for the Zn content of designation Al

99.85 and the Cu content of designation Al

99.70 are modified (see 5.1;

3.2 of Version 2017);

b) The time limit for the demand-side to raise objections to the inspection results to the supply-side during inspection and acceptance is modified (see 7.1.2;

5.1.2 of Version 2017);

c) The regulations on the sampling for appearance quality inspection of aluminum ingots are added (see 7.4.2);

d) The provisions on the batch weight in the handling of arbitration results are deleted (see 5.6.3 of Version 2017);

e) The product markings are modified (see 8.1.2;

6.1.2 of Version 2017);

f) The quality certificate is modified (see 8.4;

1 Scope

China's national standard for unalloyed aluminium ingots for remelting - the primary aluminium as it leaves the smelter, cast into ingot and sold to everyone who makes anything from aluminium. It is the commodity form of the metal and one of the most heavily traded products in the national catalogue: the grade named on this standard is what an aluminium contract is written against. It specifies the classification, the technical requirements, the test methods, the inspection rules, the marking, packaging, transport and storage, the quality certificate and the content of the order or contract for unalloyed aluminium ingots for remelting. The standard is essentially a specification of purity, because that is the only variable: the grades are distinguished by the aluminium content and, more precisely, by the limits on the individual impurities that come through the reduction cell - iron and silicon above all, which arrive from the alumina and the anodes and which are what actually separates one grade from the next, together with copper, gallium, vanadium, titanium and the rest. The reason the individual limits matter rather than a single purity figure is that the impurities do different things downstream: iron and silicon govern the mechanical properties and the castability of the alloys made from the metal, copper affects the corrosion resistance, and the transition elements reduce the electrical conductivity, which matters greatly if the metal is destined for conductor. So a purchaser buying for a conductor plant and one buying for a foundry are reading different columns of the same table. The clauses on sampling, on the quality certificate and on the content of the order are what make the grade enforceable in trade. Issued on 28 December 2023 and in force since 1 July 2024, it replaces GB/T 1196-2017.

This document specifies the classification, technical requirements, test methods, inspection rules, marking, packaging, transportation, storage, quality certificate and order sheet (or

contract) content of unalloyed aluminum ingots for remelting. This document is applicable to unalloyed aluminum ingots for remelting (hereinafter referred to as the "aluminum ingots") produced through the alumina-cryolite molten salt electrolysis method. Electrolytic primary aluminum liquid may take this Standard as a reference.

2 Normative References

The contents of the following documents constitute indispensable clauses of this document through the normative references in the text. In terms of references with a specified date, only versions with a specified date are applicable to this document. In terms of references without a specified date, the latest version (including all the modifications) is applicable to this document.

GB/T 7999 Optical Emission Spectrometric Analysis Method of Aluminum and Aluminum Alloys

GB/T 8170 Rules of Rounding off for Numerical Value & Expression and Judgement of Limiting Values

GB/T 20975 (all parts) Methods for Chemical Analysis of Aluminum and Aluminum Alloys

GB/T 25820 Steel Strip for Packing

3 Terms and Definitions

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

4 Classification

In accordance with the chemical composition, the product can be classified into eight designations. Al99.85, Al99.80, Al99.70, Al99.60, Al99.50, Al99.00, Al99.7E and Al99.6E.

5 Technical Requirements

5.1 Chemical Composition The chemical composition of the product shall comply with the stipulations of Table

1. For the content of other impurity elements not specified in Table 1, if the demand-side has special requirements, the demand-side and the supply-side may have further negotiations.

5.2 Ingot Shape and Ingot Weight

5.2.1 There are no uniform regulations on the shape of the aluminum ingots, but they shall be suitable for packaging, transportation and storage demands.

5.3 Appearance Quality

5.3.1 The aluminum ingots shall be silvery white.

5.3.2 The surface of the aluminum ingots shall be clean and tidy, with no serious flash or pores, and slight slag inclusions are allowed.

5.4 Others

5.4.1 When the demand-side has special requirements for the quality of the aluminum ingots, it shall be negotiated by the demand-side and the supply-side and specified in the order sheet (or contract).

6 Test Methods

6.1 Chemical Composition The chemical composition analysis shall be conducted in accordance with the stipulations of GB/T 20975 (all parts) or GB/T 7999. The arbitration analysis shall be carried out in accordance with the stipulations of GB/T 20975 (all parts).

6.2 Ingot Shape and Ingot Weight The aluminum ingots shall be checked and weighed, and the ingot shape shall be visually inspected.

6.3 Appearance Quality The appearance of the aluminum ingots shall be visually inspected.

7.1 Inspection and Acceptance

7.1.1 The product shall be inspected by the supply-side's technical (quality) inspection department or a third party to ensure that the product quality complies with the provisions of this document or the order sheet (or contract), and a quality certificate shall be filled out.

7.1.2 The demand-side shall inspect the received products in accordance with the provisions of this document. If the inspection results are inconsistent with the provisions of this document or the order sheet (or contract), for the aluminum ingots, it shall be proposed to the supply-side within 30 days from the date of receipt of the product and resolved by the demand-side and the supply-side through negotiation.

7.2 Group Batch

7.2.1 The aluminum ingots shall be submitted for inspection in batches. Each batch shall be composed of products of the same batch No., with no limit on batch weight.

7.2.2 The primary aluminum liquid shall be submitted for acceptance in batches. Each batch shall be a single aluminum liquid package.

7.3 Inspection Items Each batch of products shall be inspected for chemical composition. The weight of a single aluminum ingot is not inspected and is guaranteed by the supply-side's workmanship. The aluminum ingots shall be inspected for appearance quality.