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**NONFERROUS METALS INDUSTRY STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

YS/T 1184-2017

**Safety specification for storage and transportation of primary
aluminum liquid**

原铝液贮运安全技术规范

(English Translation)

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard was proposed by and is under the jurisdiction of the National Technical Committee on Non-ferrous Metals of Standardization Administration of China (SAC/TC 243).

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1 Scope

This standard specifies the basic safety requirements, equipment and facility requirements, loading and unloading safety requirements, transport requirements, hazard identification, emergency management and other contents for the storage and transport of primary aluminum liquid.

This standard is applicable to the safety of storage and transport of primary aluminum liquid

in electrolytic aluminum and aluminum processing enterprises.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition (including all amendments) applies.

GB 1589 Limits of dimensions, axle load and masses for road vehicles

GB 2893 Safety colours

GB 2894 Safety signs and guideline for the use

GB 4387 Safety regulations for railway and road transportation in industrial enterprises

GB 5082 Command signals for hoisting

GB 5768 Road traffic signs and markings

GB 6067 Safety rules for lifting appliances

GB 6441 Classification for casualty accidents of enterprise staff and workers

GB/T 8005.1 Aluminium and aluminium alloys - Terms and definitions - Part 1: Products and processing treatment

GB 11567.1 Motor vehicles and trailers - Lateral protection requirements

GB 11567.2 Motor vehicles and trailers - Rear underrun protection requirements

GB/T 11651 Code of practice for selection of personal protective equipment

GB 13392 Marks for road transport vehicles of dangerous goods

GB 13495 Fire safety signs

GB/T 13861 Classification and code for the hazardous and harmful factors in process

GB 15630 Requirements for the placement of fire safety signs

GB 18218 Identification of major hazard installations

GB 18565 Comprehensive performance requirements and test methods for road commercial vehicles

GB/T 28001 Occupational health and safety management systems - Requirements

GB/T 28002 Occupational health and safety management systems - Guidelines for the implementation

GB/T 29639 Guidelines for enterprises to develop emergency response plans for production safety accidents

GB 29741 Safety code for aluminium electrolysis

GB 50016 Code for fire protection design of buildings

GB 50140 Code for design of extinguisher distribution in buildings

AQ 8001 General rules for safety assessment

AQ/T 9006 Basic norms for enterprise work safety standardization

JT/T 198 Classification and evaluation of technical grades of commercial vehicles

JB/T 7688 Specifications for metallurgical cranes

3 Terms and definitions

For the purposes of this document, the terms and definitions given in GB/T 8005.1 and the following apply.

3.1 primary aluminum liquid

High-temperature molten aluminum tapped from the electrolytic cell.

3.2 vehicles for the transportation of primary aluminum liquid

Vehicles used exclusively for transporting primary aluminum liquid.

4.1 Infrastructure requirements

4.1.1

The design and provision of fire protection facilities for workshops and transport roads shall comply with the relevant provisions of the Fire Protection Law of the People's Republic of China and GB 50016 and GB 50140. When production equipment, facilities and buildings (structures) are arranged, safety passages that meet emergency evacuation requirements, are clearly marked and are kept unobstructed shall be provided.

4.1.2

The enterprises concerned in the loading, unloading and transport processes shall divide management areas and define management responsibilities.

4.1.3

Rest rooms or changing rooms shall not be located within hazardous areas where leakage of primary aluminum liquid may occur during hoisting or transport of primary aluminum liquid.

4.2 Personnel requirements

4.2.1

The principal persons in charge and the safety management personnel of the enterprise shall receive safety training from the work safety supervision and administration department at or above the city or prefecture level of the locality and shall obtain a certificate of competence.

4.2.2

Drivers engaged in the transport of primary aluminum liquid shall hold a motor vehicle driving licence of class B2 or above.

4.2.3

Personnel engaged in the transport of primary aluminum liquid shall meet the provisions of 3.5, 3.6 and 3.7 of GB 4387-2008.

4.2.4

The enterprise shall provide safety training for employees periodically. Employees shall be familiar with the work safety rules and regulations and the safe operating procedures, shall master the properties and hazard characteristics of primary aluminum liquid, the loading and unloading requirements and the emergency response measures in the event of accidents, and shall carry out standardized operations in accordance with the rules and procedures.

4.3 Management requirements

4.3.1

Organizations producing, using and transporting primary aluminum liquid shall establish a sound work safety management organization, shall be staffed with full-time and part-time safety management personnel as specified, and shall be provided with full-time and part-time fire brigades.

4.3.2

The enterprise shall provide employees with labour protection equipment in accordance with the relevant provisions of GB/T 11651.

4.3.3

The enterprise shall establish a sound work safety management system, mainly including:

a) a technical file management system for vehicles for the transportation of primary aluminum liquid, containing complete documentation such as factory certificates of conformity, inspection reports, manufacturer qualification certificates and instructions for use of the vehicles, vacuum ladles and other equipment;