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

GB 15599-2025

Replacing GB 15599-2009

**Lightning safety specification for hazardous chemical
enterprises**

危险化学品企业雷电安全规范

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part

1.Structure and Drafting Rules of Standardization Documents". Drafting. This document replaces GB 15599-2009 "Code for Lightning Safety of Petroleum and Petroleum Facilities". Compared with GB 15599-2009, the only differences are in the structural design. Aside from integration and editorial changes, the main technical changes are as follows:

---The scope of application has been changed (see Chapter 1, Chapter 1 of the.2009 edition);

---Added "Terms and Definitions" (see Chapter 3);

---Requirements for lightning protection classification and lightning protection zone division have been added (see 4.1);

---Added basic principles for preventing lightning hazards (see 4.2, 4.4);

---Added "Verification Methods" (see 4.5, 5.5, 6.7, 7.4);

- Added "Lightning Warning" (see Chapter 5);
- Added "General Facilities" (see 6.1.1.1, 6.1.2.1, 6.1.2.2);
- Added requirements for pipeline grounding and equipotential bonding (see 6.1.3.3~6.1.3.6);
- Added "Frames, Pipe Racks, and Cable Trays" (see 6.1.4);
- Requirements for aluminum alloy dome storage tanks have been added (see 6.3.1.2);
- Added requirements for equipotential bonding of drainage pipelines and rotating floating ladders for external floating roof tanks (see 6.3.1.4);
- Added requirements for electrical connection between the floating roof and the tank body of internal floating roof tanks (see 6.3.1.5);

1 Scope

GB 15599 sets the lightning safety requirements for enterprises that produce, handle or store hazardous chemicals - the sites where a lightning strike does not merely damage equipment but can ignite a vapour cloud. It covers the classification of the installation and the division of lightning protection zones, the thunderstorm warning system, and the protection measures facility by facility: the general installations, the production unit area, the tank farm down to the equipotential bonding of floating roofs and drainage lines, the warehouse, the loading and unloading area and the filling station. Clause 7 sets what has to be detected, inspected and maintained, and how often. It replaces GB 15599-2009, which covered petroleum facilities only: the scope now takes in hazardous chemicals as a whole, and the requirements for oil tankers and barges have been dropped. Issued on 31 December 2025 by SAMR and SAC, in force from 1 September 2026. This page is published from the official record of the standard held by the Chinese standards administration and from its published table of contents. The full clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This document specifies the general requirements for hazardous chemical enterprises to avoid or reduce lightning hazards, lightning warning, lightning protection and detection, and inspection. Operation and maintenance measures. This document applies to lightning safety protection for enterprises that produce, operate (or store) hazardous chemicals.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included. For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies.

This document.

GB/T 18802.11 Low-voltage surge protectors (SPDs) Part

11. Performance requirements for surge protectors in low-voltage power supply systems
Test methods

GB/T 18802.21 Low-voltage surge protectors - Part

21. Performance requirements for surge protectors (SPDs) for telecommunications and
signaling networks and test methods

GB/T 21431 Technical Specification for Testing Lightning Protection Devices of Buildings

GB/T 38121 Lightning Protection and Thunderstorm Early Warning System

GB 50057 Code for Design of Lightning Protection of Buildings

GB 50156 Technical Standard for Automobile Fueling, Gas Filling, and Hydrogen Refueling
Stations

GB 50650 Code for Lightning Protection Design of Petrochemical Plants (2022 Edition)

3 Terms and Definitions

The following terms and definitions apply to this document.

3.1 Composed of lightning arresters, down conductors, grounding devices, surge protectors, and their connecting conductors, these components are used to protect the structures of hazardous chemical enterprises. Facilities or systems that protect buildings, places, and installations from lightning strikes. [Source: GB 50057-2010, 2.0.5, with modifications]

3.2 A system that monitors thunderstorm activity within a target area and provides early warnings of future lightning occurrences in that area. [Source: GB 17681-2024, 3.3]

3.3 air-termination system It consists of lightning rods, lightning strips, lightning wires, and lightning nets for intercepting lightning strikes, as well as metal roofs and metal components. [Source: GB 50057-2010, 2.0.8]