

ICS 03.220.40

CCS R09



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

GB 16994.1-2021

**Safety requirements for port operation - Part 1: Oil & gas and
chemical terminal**

港口作业安全要求 第1部分：油气化工码头

Issued on: December 1, 2021

Implemented on: December 1, 2022

**Issued by: State Administration for Market Regulation;
Standardization Administration of China**

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for Standardization Work Part

1. Structure and Drafting Rules of Standardization Documents" Drafting. This document is Part 1 of GB 16994 "Safety Requirements for Port Operations". GB 16994 has released the following parts.

1. Oil and gas chemical terminal;

2. Petrochemical reservoir area;

3. Dangerous cargo containers. This document replaces GB 16994-1997 "Basic Requirements for Oil Terminal Safety Technology". Compared with GB 16994-1997, except for structural adjustments and In addition to editorial changes, the main technical changes are as follows:

---The scope has been changed to apply to oil and gas chemical terminals (see Chapter 1, Chapter 1 of the.1997 edition);

---The terms and definitions of "oil terminal", "insulating flange", and "non-conductive short pipe" are deleted. Righteousness (see 3.1, 3.1~

3.3 of the.1997 edition);

---Deleted the relevant regulations on the fire hazard classification of oil loading and unloading oil at the oil terminal and the safety technical requirements for the equipment and facilities of the oil terminal (see.1997 Chapter 4 of the annual edition, 5.1, 5.2.1~5.2.5, 5.2.6.1~5.6.2.3, 5.5~5.9);

--- The requirements for safety signs and warning signs have been changed, and the content of the basic regulations has been added (see 4.1,

5.4 in the.1997 edition);

---Added fire and explosion-proof requirements (see 4.2);

--- The requirements for lightning protection, anti-static, and anti-stray current have been changed (see 4.3, 5.2.8, 5.2.6.4, 5.2.7, and

5.2.8 of the.1997 edition);

1 Scope

Part 1 of China's mandatory safety requirements for port operations, covering oil, gas and chemical terminals. A liquid bulk terminal is where a ship carrying tens of thousands of tonnes of flammable or toxic cargo is connected to a shore tank by a set of hoses or arms, and the transfer runs for a day or more with a crew on board and a crew ashore. Everything about the safety case is in that connection: the pre-transfer agreement between ship and shore, the emergency shutdown that either side can trigger, the moorings that must hold the ship against wind and current so the arms are never pulled beyond their envelope, and the electrical isolation that prevents a current flowing through the metal path between ship and jetty. Around them sit the hazardous area classification, the vapour handling, the fire protection and the spill response.

This document specifies the general requirements, operational safety requirements, special operational requirements and emergency management during the operation of the oil and gas chemical terminal. This document is applicable to oil and gas chemical terminal operations.

2 Normative references

The content of the following documents constitutes an indispensable clause of this document through normative references in the text. Among them, dated quotations Only the version corresponding to the date is applicable to this document; for undated reference documents, the latest version (including all amendments) is applicable to This document.

GB 2893 safety color

GB 2894 safety signs and guidelines for their use

GB 7231 Basic identification colors, identification symbols and safety signs of industrial pipelines

GB 30871 Safety Code for Special Operations of Chemical Production Units

GB 39800.1 Personal protective equipment equipment specification Part

3 Terms and definitions

The following terms and definitions apply to this document.

3.1 Oil and gas chemical terminal oil The general term for oil and gas chemical terminals including loading and unloading of oil products, liquid chemicals, liquefied natural gas, and liquefied hydrocarbons.

4.1 Basic regulations

4.1.1 The safety facilities and equipment of the oil and gas chemical terminal (hereinafter referred to as the "terminal") shall be regularly maintained, maintained, tested, inspected, and calibrated to ensure that Hold applicable status.