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

GB/T 13894-2023

Replacing GB/T 13894-1992

**Petroleum and liquid petroleum products - Level measurement -
Manual methods**

石油和液体石油产品 液位测量 手工法

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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/T 13894-1992 "Level Measurement Method for Petroleum and Liquid Petroleum Products (Manual Method)" and is consistent with GB/T 13894- Compared with:1992, in addition to structural adjustments and editorial changes, the main technical changes are as follows:

- a) Change "Subject Content and Scope of Application" to "Scope" to increase the applicability of this document to oil products, container types and storage and transportation conditions Expression (see Chapter 1, Chapter 1 of the:1992 edition);
- b) Modified some terms and definitions, and added new terms and definitions (see Chapter 3, Chapter 3 of the:1992 edition);
- c) Change "measuring instruments and materials" to "gauge equipment and auxiliary tools (products)", and modify the description and description of measuring instruments and materials: Ming, a portable electronic measuring device, a vapor locking valve and a tank bottom liquid core sampler were added, and the injection of measuring instruments in the:1992 version was added: Notes have been revised and incorporated into this chapter (see Chapter 4, Chapter 4 and 5:1:2 of the:1992 edition);
- d) Change "Precautions" to "Safeguard Measures" and incorporate the operating precautions in the original gauge method into this chapter: It is supplemented and improved on the basis of safety and gauge guarantee, and is expressed separately in terms of safety guarantee and accuracy guarantee (see Chapter 5,:1992 Chapter 5 and 6:1 of the annual edition);

- e) A chapter of "General Requirements" has been added, and the readings, repetitions, tolerances and result determination of the gauge ruler in the original "Gauge Ruler Method" have been modified and included. This chapter also puts forward unified requirements for liquid trace tangents, actual height gauges, empty height gauges, cabin gauges, and restricted and enclosed condition gauges: (See Chapter 6, Chapter 6 of the:1992 edition);
- f) Change the "Gauge Gauge Method" to "Open Gauge Gauge", and measure the original "Oil Height Gauge" according to "Oil Height Gauge", "Oil Empty Gauge" and "Water Height Gauge": "Quantity", "Void Distance Measurement" and "Measurement of Container Bottom Water" were rewritten, and the use of portable electronic measuring devices to measure oil height and water was added: High methods (see Chapter 7, 6:2, 6:3, and 6:4 of the:1992 edition);
- g) Added a chapter "Confined and Restricted Gauge Rules" (see Chapter 8);
- h) Added a chapter "Setting and checking the reference gauge of the automatic level gauge (ALG)" (see Chapter 9);
- i) Changed "report" to "gauge report" and improved the relevant content (see Chapter 10, Chapter 7 of the:1992 edition): Please note that some content in this document may be subject to patents: The publisher of this document assumes no responsibility for identifying patents: This document is proposed and coordinated by the National Petroleum Products and Lubricants Standardization Technical Committee (SAC/TC280): This document was drafted by: Sinopec Petrochemical Research Institute Co., Ltd., Department of Science and Technology of China Petrochemical Corporation, China Inspection and Certification Group Shandong Co., Ltd., China Petrochemical Corporation Tianjin Petrochemical Branch, Sinopec Fuel Oil Sales Co., Ltd: Company, China Petroleum & Chemical Corporation Beijing Yanshan Branch, Sinopec Sales Co., Ltd: Beijing Petroleum Branch, State Administration Net Group Northern Pipeline Co., Ltd., Sinopec Sales Co., Ltd: Zhejiang Petroleum Branch, Qingdao Aobang Measuring Co., Ltd: company: The main drafters of this document: Wei Jinxiang, Bi Haipeng, Liu Chongwei, Cui Guangwei, Sun Yan, Xu Min, Jin Tao, Zeng Fanming, Wang Zhixue, Li Hechen, Cao Lei, Zhang Shanyou: This document was first published in:1992 and this is the first revision: Manual methods for level measurement of petroleum and liquid petroleum products

1 Scope

GB/T 13894-2023 is the Chinese national standard on petroleum and liquid petroleum products - level measurement - manual methods, in the field of petroleum and related technologies. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 27 November 2023 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 March 2024. Classification: ICS

75.180.30, CCS E30. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This document describes the use of manual liquid level measurement equipment to measure petroleum and liquid petroleum products (hereinafter referred to as "oil products") in non-pressure tanks (tanks): Method for liquid level and bottom free water height: This document is applicable to the liquid level measurement of oil products with Reid vapor pressure less than 103kPa: Other liquid products with similar characteristics can be adopted as a reference: This document is applicable to normal pressure tanks (cabins) that can be opened for metering and low positive pressure airtight tanks (cabins) equipped with steam lock valves that can be closed or limited for metering: liquid level measurement:

Note: When used for liquid level measurement in oil tankers, "tank" in this document is equivalent to "tank":

2 Normative reference documents

The contents of the following documents constitute essential provisions of this document through normative references in the text: Among them, the dated quotations For undated referenced documents, only the version corresponding to that date applies to this document; for undated referenced documents, the latest version (including all amendments) applies to this document:

GB/T 4756 Manual sampling method for petroleum liquids

GB/T 8927 Manual method for temperature measurement of petroleum and liquid petroleum products GB/T 13235:

1 Volume calibration of vertical cylindrical tanks for petroleum and liquid petroleum products - Part 1: Circumferential ruler method

GB/T 13236 Manual measurement equipment for liquid level in petroleum and liquid petroleum product storage tanks

GB 13348 Static electricity safety regulations for liquid petroleum products GB/T 21451:

1 Method for automatic measurement of liquid level and temperature in storage tanks for petroleum and liquid petroleum products - Part 1: Liquids in normal pressure tanks bit measurement GB/T 21451:

2 Automatic measurement method of liquid level and temperature in storage tanks for petroleum and liquid petroleum products - Part 2: Liquids in oil tankers bit measurement

3 Terms and definitions

The terms and definitions defined in GB/T 13235:1 and GB/T 13236 and the following apply to this document:

3:1 bathymetry datumplate A horizontal metal plate located directly below the gauge ruler reference point (3:4) that provides a fixed contact surface for liquid level measurement:

3:2 bathymetric datum point dippingdatumpoint During the sounding, the point of contact between the sounding ruler and the sounding reference plate (3:1) or the bottom of the tank:

Note: The depth measurement datum point is usually the datum point for oil tank calibration and the zero point for compiling the tank capacity table based on the actual height, also called the zero point of the gauge: [Source: GB/T 13236-2011, 3:6, with modifications]

3:3 gauginghatch;gaugingaccesspoint An opening in the top of an oil tank for measuring liquid level, oil temperature/or taking samples: