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

GB/T 45373-2025

**Petroleum and liquid petroleum products - Direct measurement
of density in tanks - Resonance cylinder densitometer methods**

石油和液体石油产品 罐内密度直接测量 谐振筒密度计法

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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 for standardization documents" Drafting is required.

Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents.

This document is proposed and coordinated by the National Technical Committee for Standardization of Petroleum Products and Lubricants (SAC/TC 280).

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The density of petroleum and liquid petroleum products in the tank is directly Measurement by resonant cylinder density meter method

1 Scope

This document specifies the general requirements for accuracy, measurement conditions and measurement methods for direct measurement of the density of oil in tanks by resonant cylinder densitometers.

The requirements are specified in the following two types of equipment. portable electronic density meter and tank automatic density meter. Inspection method.

This document is applicable to single-phase liquid petroleum and its products with a reid vapor pressure of less than 100 kPa in atmospheric tanks and sufficient fluidity, and other Similar products that meet the requirements shall be implemented accordingly.

This document applies to measuring density in inventory and transfer measurements.

This document is not applicable to density measurements in pressurized tanks or refrigerated tanks.

Note 1. For multifunctional electronic metering devices capable of measuring density, when based on the same principle as a resonant cylinder densitometer, the density measuring part is equivalent to the resonant cylinder Density meter.

Note 2. Resonance cylinder densitometers are generally suitable for low-viscosity liquid petroleum products without wax. For viscous liquid crude oil and petroleum products, such as crude oil, lubricating oil, and residual fuel oil, etc., may be difficult to use. Manufacturers usually give the maximum viscosity of the applicable liquid in the instruction manual.

2 Normative references

GB/T 1884

GB/T 1885

GB/T 4756

GB/T 8927-2008

GB 13348

GB/T 13894

GB/T 21451.1

GB/T 21451.4

3 Terms and definitions

The terms and definitions defined in GB/T 21451.1 and GB/T 21451.4 and the following apply to this document.

3.1 Resonance cylinder densitometer

The resonant cylinder is used as a density sensor, and a temperature sensor is used to form a measuring probe and immersed in the liquid to be measured.