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

GB/T 29617-2013

**Determination of density, relative density, and API gravity of
liquids by digital density meter**

数字密度计测定液体密度、相对密度和API比重的试验方法

(English Translation)

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Foreword

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

This revised standard adopts the American Society for Testing and Materials standard ASTM D4052-09 "digital density meter measured liquid density and relative density Degree and Standard Test Method "API gravity formulation.

In order for our country, the present standard when using ASTM D4052-09 been modified. This standard ASTM D4052-09 in There are major differences in the technical content of the following.

--- Normative references cited in the relevant national standards and industry standards in China.

--- Repeatability and reproducibility of the text in accordance with our habits of expression.

--- Increasing the API gravity and significance of the term related content.

--- Test step manual removal of the injector and autosampler points difference between single and parallel determination, unity of two parallel determination, and removed a single

determination related content.

This standard by the National Quality Supervision key product testing method Standardization Technical Committee (SAC/TC374) and focal points.

1 Scope

1.1

standard specifies the density at the test temperature into a homogeneous liquid petroleum distillates and viscous oil, relative density and API gravity experiment method.

1.2

This standard applies to the test temperature, the vapor pressure is lower than 100kPa, kinematic viscosity of not more than 15000mm²/s liquid sample. Correct in the case of a vapor pressure greater than 100kPa, the oscillating U-tube if it is determined that no air bubbles exist (presence of air bubbles will affect the test results) is also it may be tested. This standard applies to products including, but not limited to. gasoline, diesel, jet fuel, base oils, waxes and lubricants.

1.3

precision standard in question is obtained at 15 °C, the wax is solid at 15 °C, so the precision of the standard in question does not apply the wax used in the density of the test results. For wax testing, the instrument should configure a temperature control device to ensure that the sample solution is injected into the sample tube state. When using high-temperature control device, you should consult the instrument manufacturer to obtain the appropriate operating and safety instructions.

1.4

This standard does not apply unable to determine whether there is a bubble of dark liquid samples.

1.5

Standard, except in the case of international system of units, special instructions.

1.6

This standard does not address all safety matters set forth standards have noted, for implementation. Before using this standard, shall establish appropriate safety and health practices and to develop appropriate systems.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein Member. For undated references, the latest edition (including any amendments) applies to this document.

GB/T 1885 Petroleum Measurement Tables (GB/T 1885-1998, eqv ISO 91-2:1991) GB/T 4756 petroleum liquids hand sampling method (GB/T 4756-1998, eqv ISO 3170. 1988) GB/T 6682 analytical laboratory use specifications and test methods (GB/T 6682-2008, ISO 3696-1987, MOD) SY/T 5317 petroleum liquids pipeline automatic sampling Standard Test Method for ASTM D287 API gravity crude oil and petroleum products (liquid hydrometer method) [Standard Test Method for API Gravity of Crude Petroleum and Petroleum Products (Hydrometer method)] ASTM D1250 oil meter (Standard Guide for Use of the Petroleum Measurement Tables)

3 Definitions

The following terms and definitions apply to this document.

Density

At a predetermined temperature, the number of unit volume contained in the mass of material in g/cm³, g/mL or kg/m³ expressed.

The relative density Substance at a given temperature to the density and the ratio of the density of the standard substance at a given temperature.