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Petroleum products — Equivalency of test method determining the same property —

Part 2: Density of petroleum products

Produits pétroliers — Équivalence des méthodes d'essai déterminant la même propriété —

Partie 2: Densité de produits pétroliers

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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This document was prepared by Technical Committee ISO/TC 28, *Petroleum and related products, fuels and lubricants from natural or synthetic sources*.

A list of all parts in the ISO/TR 19686 series can be found on the ISO website.

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Introduction

In 2010, ISO/TC 28 established a working group to investigate the development of test method equivalency tables. This proposal resulted from the discussion about identities, equivalences or differences in test methods related to fuels. It was concluded that a more structured approach would be useful.

The task of determining equivalency appeared to be a difficult and complex one; it was therefore decided that each property would be taken into account in turn and addressed in separate Technical Reports. ISO/TR 19686-100 is a base document that provides guidance on how experts effectively compare the test method standards and evaluate their equivalency.

This document presents the outcome for methods used for determining density.

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Petroleum products — Equivalency of test method determining the same property —

Part 2: Density of petroleum products

1 Scope

This document describes the evaluation to determine the equivalency of test methods used on a global scale in quality specifications of petroleum products, lubricants, and fuels. This document focuses on whether the standardized test methods for determining density are to be considered technically equivalent. This is to guide laboratories that use one standard test method and wish to know if they can also certify product towards the others.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at https://www.iso.org/obp

4 Density test methods

4.1 General

In this document, two types of density measurements are considered:

a) by oscillating U-tube method, and

b) by hydrometer method.

Each type has been assessed separately. This document does not consider the determination of density by a pyknometer (e.g. ISO 3838[5] and ASTM D1217[6]).

4.2 Oscillating U-tube methods

In this document, two methods are considered:

— ISO 12185[2] (which is also known as IP 365), and

— ASTM D4052[4].

These methods were compared following ISO/TR 19686-100[7]. The test method comparison matrix is shown in Table 1.

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