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**Petroleum products and related  
products — Determination of  
kinematic viscosity — Method by  
Stabinger type viscometer**

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# Contents

	Page
Foreword .....	iv
<b>1 Scope</b> .....	<b>1</b>
<b>2 Normative references</b> .....	<b>1</b>
<b>3 Terms and definitions</b> .....	<b>1</b>
<b>4 Principle</b> .....	<b>2</b>
<b>5 Reagents and materials</b> .....	<b>2</b>
<b>6 Apparatus</b> .....	<b>3</b>
6.1 General .....	3
6.2 Stabinger type viscometer .....	3
6.2.1 Viscosity measurement .....	3
6.2.2 Density measurement .....	3
6.2.3 Temperature control .....	4
6.2.4 Stability .....	4
<b>7 Sampling and sample handling</b> .....	<b>4</b>
7.1 Sampling .....	4
7.2 Sample handling .....	4
<b>8 Calibration and verification</b> .....	<b>4</b>
8.1 General .....	4
8.2 Instrument .....	4
<b>9 Apparatus preparation</b> .....	<b>5</b>
<b>10 Procedure</b> .....	<b>5</b>
10.1 Filling and cleaning .....	5
10.2 Manual filling and cleaning using syringes .....	5
10.3 Manual filling using sample displacement .....	6
10.4 Automatic filling and cleaning by a sample changer .....	6
<b>11 Calculation</b> .....	<b>7</b>
<b>12 Expression of results</b> .....	<b>7</b>
<b>13 Precision</b> .....	<b>7</b>
13.1 General .....	7
13.2 Repeatability, $r$ .....	7
13.3 Reproducibility, $R$ .....	8
13.4 Bias .....	8
<b>14 Test report</b> .....	<b>8</b>
<b>Bibliography</b> .....	<b>9</b>

## 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](http://www.iso.org/directives)).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 28, *Petroleum and related products, fuels and lubricants from natural or synthetic sources*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 19, *Gaseous and liquid fuels, lubricants and related products of petroleum, synthetic and biological origin*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

# Petroleum products and related products — Determination of kinematic viscosity — Method by Stabinger type viscometer

**WARNING** — The use of this document can involve hazardous materials, operations and equipment. This document does not purport to address all of the safety problems associated with its use. It is the responsibility of users of this document to take appropriate measures to ensure the safety and health of personnel prior to application of this document and fulfil other applicable requirements for this purpose.

## 1 Scope

This document specifies a procedure for the determination of kinematic viscosity ( $\nu$ ) at 40 °C in the range from 2 mm<sup>2</sup>/s to 6 mm<sup>2</sup>/s by calculation from dynamic viscosity ( $\eta$ ) and density ( $\rho$ ) of middle distillate fuels, fatty acid methyl ester fuels (FAME) and mixtures of these using the Stabinger type viscometer.

The result obtained using the procedure described in this document depends on the rheological behaviour of the sample. This document is predominantly applicable to liquids whose shear stress and shear rate are proportional (Newtonian flow behaviour). However, if the viscosity changes significantly with the shear rate, comparison with other measuring methods is only permissible at similar shear rates.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 3104, *Petroleum products — Transparent and opaque liquids — Determination of kinematic viscosity and calculation of dynamic viscosity*

ISO 3170, *Petroleum liquids — Manual sampling*

ISO 3171, *Petroleum liquids — Automatic pipeline sampling*

ISO 12185, *Crude petroleum and petroleum products — Determination of density — Oscillating U-tube method*

## 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

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

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

### 3.1

#### dynamic viscosity

$\eta$

ratio of the applied shear stress to the resulting shear rate of a liquid