

Petroleum products and related products -  
Determination of kinematic viscosity - Method by  
Stabinger type viscosimeter

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

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English Version

**Petroleum products and related products - Determination  
of kinematic viscosity - Method by Stabinger type  
viscosimeter**

Produits pétroliers et produits relatés - Détermination  
de la viscosité cinématique - Méthode par Viscometer  
Stabinger

Mineralölerzeugnisse und verwandte Produkte -  
Bestimmung der kinematischen Viskosität - Verfahren  
mit dem Viskosimeter nach dem Stabinger-Prinzip

This European Standard was approved by CEN on 27 August 2016.

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## European foreword

This document (EN 16896:2016) has been prepared by Technical Committee CEN/TC 19 “Gaseous and liquid fuels, lubricants and related products of petroleum, synthetic and biological origin”, the secretariat of which is held by NEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by May 2017, and conflicting national standards shall be withdrawn at the latest by May 2017.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

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## 1 Scope

This European Standard 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 viscosimeter.

The result obtained using the procedure described in this standard depends on the behaviour of the sample. This European Standard should be used predominantly on 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.

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

## 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN ISO 3104, *Petroleum products - Transparent and opaque liquids - Determination of kinematic viscosity and calculation of dynamic viscosity (ISO 3104)*

EN ISO 3170, *Petroleum liquids - Manual sampling (ISO 3170)*

EN ISO 3171, *Petroleum liquids - Automatic pipeline sampling (ISO 3171)*

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

## 3 Terms and definitions

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

### 3.1 dynamic viscosity

$\eta$

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

### 3.2 kinematic viscosity

$\nu$

ratio of the dynamic viscosity to the density of a liquid at the same temperature and pressure

Note 1 to entry: The kinematic viscosity is a measure of a liquid's resistance to flow under gravity.

### 3.3 density

$\rho$

mass of a substance divided by its volume at a given temperature