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Petroleum products and related products - Determination of kinematic viscosity by calculation from the measured dynamic viscosity and density - Method by constant pressure viscometer (ISO 18335:2024)

Táto norma obsahuje anglickú verziu európskej normy.  
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 04/24

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EUROPEAN STANDARD

EN ISO 18335

NORME EUROPÉENNE

EUROPÄISCHE NORM

February 2024

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English Version

Petroleum products and related products - Determination  
of kinematic viscosity by calculation from the measured  
dynamic viscosity and density - Method by constant  
pressure viscometer (ISO 18335:2024)

Produits pétroliers et produits connexes -  
Détermination de la viscosité cinématique par calcul à  
partir des mesures de viscosité dynamique et de masse  
volumique - Méthode par viscosimètre à pression  
constante (ISO 18335:2024)

Mineralölerzeugnisse und verwandte Produkte -  
Bestimmung der dynamischen Viskosität und  
Berechnung der kinematischen Viskosität - Verfahren  
mit konstantem Druck Viskosimeter (ISO 18335:2024)

This European Standard was approved by CEN on 4 February 2024.

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CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

**EN ISO 18335:2024 (E)**

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## **European foreword**

This document (EN ISO 18335:2024) has been prepared by Technical Committee ISO/TC 28 "Petroleum and related products, fuels and lubricants from natural or synthetic sources" in collaboration with 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.

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## **Endorsement notice**

The text of ISO 18335:2024 has been approved by CEN as EN ISO 18335:2024 without any modification.



# International Standard

**ISO 18335**

## **Petroleum products and related products — Determination of kinematic viscosity by calculation from the measured dynamic viscosity and density – Method by constant pressure viscometer**

*Produits pétroliers et produits connexes — Détermination de la  
viscosité cinématique par calcul à partir des mesures de viscosité  
dynamique et de masse volumique — Méthode par viscosimètre à  
pression constante*

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CP 401 • Ch. de Blandonnet 8  
CH-1214 Vernier, Geneva  
Phone: +41 22 749 01 11  
Email: [copyright@iso.org](mailto:copyright@iso.org)  
Website: [www.iso.org](http://www.iso.org)

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## ISO 18335:2024(en)

### 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 document 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)).

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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*, 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).



**ISO 18335:2024(en)****Introduction**

The purpose of this document is to specify a procedure for measuring dynamic viscosity and density, and then calculating kinematic viscosity from these measurements, when applied to petroleum and related liquids. Kinematic viscosity is often a characteristic that is specified in product specifications and is a frequent measurement in testing laboratories. The constant pressure viscometer provides a versatile and efficient technique using less time and labour for the laboratory.

# Petroleum products and related products — Determination of kinematic viscosity by calculation from the measured dynamic viscosity and density – Method by constant pressure viscometer

## 1 Scope

This document specifies a procedure for determining dynamic viscosity,  $\eta$ , and density,  $\rho$ , for the calculation of kinematic viscosity,  $\nu$ , of middle distillate fuels, fatty acid methyl ester fuels (FAME) and mixtures thereof, up to 60 % with middle distillate fuels, and lubricating oils (e.g. base oils, formulated oils), and synthetics, using a constant pressure viscometer. The range of kinematic viscosities covered in this test method is from 0,5 mm<sup>2</sup>/s to 2 000 mm<sup>2</sup>/s, with precision at 40 °C from 1,0 mm<sup>2</sup>/s to 1 286 mm<sup>2</sup>/s, and precision at 100 °C from 3,0 mm<sup>2</sup>/s to 157 mm<sup>2</sup>/s.

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 3170, *Petroleum liquids — Manual sampling*

ISO 3171, *Petroleum liquids — Automatic pipeline sampling*

**koniec náhľadu – text ďalej pokračuje v platenej verzii STN**