

<b>STN</b>	<b>Ropné výrobky</b> <b>Výpočet cetánového indexu stredných palivových</b> <b>destilátov rovnicou so štyrmi premennými</b> <b>hodnotami (ISO 4264: 2018)</b>	<b>STN</b> <b>EN ISO 4264</b>  65 6187
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Petroleum products - Calculation of cetane index of middle-distillate fuels by the four variable equation (ISO 4264:2018)

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. 12/18

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Supersedes EN ISO 4264:2007

English Version

## Petroleum products - Calculation of cetane index of middle-distillate fuels by the four variable equation (ISO 4264:2018)

Produits pétroliers - Calcul de l'indice de cétane des distillats moyens par équation à quatre variables (ISO 4264:2018)

Mineralölerzeugnisse - Berechnung des Cetanindex von Mitteldestillat-Kraftstoffen aus der 4-Parameter-Gleichung (ISO 4264:2018)

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**EN ISO 4264:2018 (E)**

<b>Contents</b>	<b>Page</b>
<b>European foreword.....</b>	<b>3</b>

## **European foreword**

This document (EN ISO 4264:2018) 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.

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of an identical text or by endorsement, at the latest by January 2019, and conflicting national standards shall be withdrawn at the latest by January 2019.

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.

This document supersedes EN ISO 4264:2007.

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## **Endorsement notice**

The text of ISO 4264:2018 has been approved by CEN as EN ISO 4264:2018 without any modification.

# INTERNATIONAL STANDARD

# ISO 4264

Third edition  
2018-06

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## **Petroleum products — Calculation of cetane index of middle-distillate fuels by the four variable equation**

*Produits pétroliers — Calcul de l'indice de cétane des distillats  
moyens par équation à quatre variables*



Reference number  
ISO 4264:2018(E)

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# Contents

	Page
<b>Foreword</b> .....	<b>iv</b>
<b>1 Scope</b> .....	<b>1</b>
<b>2 Normative references</b> .....	<b>2</b>
<b>3 Terms and definitions</b> .....	<b>2</b>
<b>4 Principle</b> .....	<b>2</b>
<b>5 Procedure</b> .....	<b>2</b>
<b>6 Calculation</b> .....	<b>3</b>
<b>7 Expression of results</b> .....	<b>3</b>
<b>8 Precision</b> .....	<b>3</b>
<b>9 Test report</b> .....	<b>3</b>
<b>Annex A (informative) Calculated cetane index by means of nomographs</b> .....	<b>5</b>

## ISO 4264:2018(E)

### 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)).

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

For an explanation on 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 the following URL: [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 28, *Petroleum products and lubricants*.

This third edition cancels and replaces the second edition (ISO 4264:2007), which has been technically revised.

The main changes from the previous edition are as follows:

- this edition includes a statement on the existence of sample specific bias;
- the second procedure to establish the cetane index using nomography is moved into an informative annex;
- ISO 3924 is added as an alternative to test method ISO 3405.



# Petroleum products — Calculation of cetane index of middle-distillate fuels by the four variable equation

**WARNING — Use of this document can involve hazardous materials, operations and equipment. This document does not purport to address all the safety problems associated with its use. It is the responsibility of the user of this document to take appropriate measures to ensure the safety and health of personnel prior to application of the document and to determine the applicability of any other restrictions for this purpose.**

## 1 Scope

This document specifies a procedure for the calculation of the cetane index of middle-distillate fuels from petroleum-derived sources. The calculated value is termed the “cetane index by four-variable equation”. Throughout the remaining text of this document, the term “cetane index” implies cetane index by four-variable equation.

This document is applicable to fuels containing non-petroleum derivatives from tar sand and oil shale. It is not applicable to pure hydrocarbons, nor to distillate fuels derived from coal. Cetane index calculations do not take into account the effects from additives used to enhance the Cetane number.

NOTE 1 This document was originally developed using a matrix of fuels, some of which contain non-petroleum derivatives from tar sands and oil shale.

NOTE 2 The cetane index is not an alternative way to express the cetane number; it is a supplementary tool, to be used with due regard for its limitations.

NOTE 3 The cetane index is used to estimate the cetane number of diesel fuel when a test engine is not available to determine this property directly, or when insufficient sample is available for an engine rating.

The most suitable range of fuel properties for application of this document is as follows:

<b>Fuel property</b>	<b>Range</b>
Cetane number	32,5 to 56,5
Density at 15 °C, kg/m <sup>3</sup>	805,0 to 895,0
10 % (V/V) distillation recovery temperature, °C	171 to 259
50 % (V/V) distillation recovery temperature, °C	212 to 308
90 % (V/V) distillation recovery temperature, °C	251 to 363

Within the range of cetane number (32,5 to 56,5), the expected error of the prediction via the cetane index equation will be less than  $\pm 2$  cetane numbers for 65 % of the distillate fuels examined. Errors can be greater for fuels whose properties fall outside this range of application.

As a consequence of sample-specific biases observed, the expected error can be greater even when the fuel's properties fall inside the recommended range of application. Therefore, users can assess the required degree of prediction agreement to determine the fitness-for-use of the prediction.

NOTE 4 Sample specific biases were observed for distillate fuels containing FAME (fatty acid methyl ester).

**ISO 4264:2018(E)****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 91, *Petroleum and related products — Temperature and pressure volume correction factors (petroleum measurement tables) and standard reference*

ISO 3405, *Petroleum products — Determination of distillation characteristics at atmospheric pressure*

ISO 3675, *Crude petroleum and liquid petroleum products — Laboratory determination of density — Hydrometer method*

ISO 3924, *Petroleum products — Determination of boiling range distribution — Gas chromatography method*

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

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