SLOVENSKI STANDARD
SIST EN 16715:2026

01-april-2026

Nadomešča:
SIST EN 16715:2015

Tekoči naftni proizvodi - Določanje zakasnitve vžiga in izpeljanega cetanskega števila (DCN) v srednje destilatnih gorivih - Določanje zakasnitve vžiga in sežiga z uporabo komore s konstantno prostornino z direktnim injiciranjem goriva

Liquid petroleum products - Determination of ignition delay and derived cetane number (DCN) of middle distillate fuels - Ignition delay and combustion delay determination using a constant volume combustion chamber with direct fuel injection

Flüssige Mineralölerzeugnisse - Bestimmung des Zündverzugs und der abgeleiteten Cetanzahl (ACZ) von Kraftstoffen aus Mitteldestillaten - Bestimmung des Zündverzugs und des Verbrennungsverzugs in einer Verbrennungskammer mit konstantem Volumen und direkter Kraftstoffeinspritzung

Produits pétroliers liquides - Détermination du délai d'inflammation et de l'indice de cétane dérivé (ICD) des distillats moyens - Détermination du délai d'inflammation et de combustion en utilisant une chambre à volume constant avec injection directe du carburant

Ta slovenski standard je istoveten z: **EN 16715:2026**

ICS:

75.160.20	Tekoča goriva	Liquid fuels

SIST EN 16715:2026 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 16715

March 2026

ICS 75.160.20

Supersedes EN 16715:2015

English Version

Liquid petroleum products - Determination of ignition delay and derived cetane number (DCN) of middle distillate fuels - Ignition delay and combustion delay determination using a constant volume combustion chamber with direct fuel injection

Produits pétroliers liquides - Détermination du délai d'inflammation et de l'indice de cétane dérivé (ICD) des distillats moyens - Détermination du délai d'inflammation et de combustion en utilisant une chambre à volume constant avec injection directe du carburant

Flüssige Mineralölerzeugnisse - Bestimmung des Zündverzugs und der abgeleiteten Cetanzahl (ACZ) von Kraftstoffen aus Mitteldestillaten - Bestimmung des Zündverzugs und des Verbrennungsverzugs in einer Verbrennungskammer mit konstantem Volumen und direkter Kraftstoffeinspritzung

This European Standard was approved by CEN on 22 December 2025.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and United Kingdom.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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

Ref. No. EN 16715:2026 E

Contents

Page

European foreword

This document (EN 16715:2026) 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 September 2026, and conflicting national standards shall be withdrawn at the latest by September 2026.

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 16715:2015.

EN 16715:2026 includes the following significant technical changes with respect to EN 16715:2015:

— introduction of the possibility of using a charge air blending system (6.2) and necessary instructions on the quality control if this is used (under 10.4);

— revision of the correlation equation under Clause 12;

— update of precision statements under Clause 14;

— further clarification of the measurement range towards (39,44 to 62,78) derived cetane number under Clause 1 in line with the revised EN ISO 4259-1:2017.

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

Introduction

This document is derived from joint standardization work within the Energy Institute and ASTM International. It is based on and technically equivalent with ASTM D7668 [1].

The described method is an alternative quantitative determination of the cetane number of middle distillate fuels intended for use in compression ignition engines. A correlation study between this method and EN ISO 5165 [2] has been done and the results of this are incorporated in this document.

The basis of this method is the derived cetane number (DCN) correlation equation as given in Clause 12. The on-going validation of the equation is monitored and evaluated through the existing American and European fuel exchange programs. The validation data will be reviewed by CEN/TC 19 with a frequency of at least every two years. As a result of the review, CEN/TC 19 may make the decision to, if necessary, modify the existing equation/correlation or develop a new one. As part of this review, the sample types will be examined, and if certain types are underrepresented, further steps may be taken to evaluate how they perform.

The ignition delay (ID) and combustion delay (CD) values and the DCN value determined by this test method provide a measure of the ignition characteristics of diesel fuel oil used in compression ignition engines. This test is for use by engine manufacturers, petroleum refiners and marketers, and in commerce as a specification aid to relate or match fuels and engines. This test is also applicable to non-conventional diesel fuels, such as paraffinic diesel fuel.[1]

[1] For the original 2013 interlaboratory cooperative test programme results, see [3]. For the exchange programs correlation data analysis see [4].

1 Scope

This document specifies a test method for the quantitative determination of ignition and combustion delays of middle distillate fuels intended for use in compression ignition engines. The method utilizes a constant volume combustion chamber with direct fuel injection into heated, compressed synthetic air. A dynamic pressure wave is produced from the combustion of the product under test. An equation is given to calculate the derived cetane number (DCN) from the ignition and combustion delays determined from the dynamic pressure curve.

This document is applicable to middle distillate fuels, fatty acid methyl esters (FAME) and blends of diesel fuels and FAME. The method is also applicable to middle distillate fuels of non-petroleum origin, oil-sands based fuels, blends of fuel containing biodiesel material, diesel fuel oils containing cetane number improver additives and low-sulphur diesel fuel oils. However, users applying this document especially to unconventional distillate fuels are warned that the relationship between derived cetane number and combustion behaviour in real engines is not yet fully understood.

This document covers the ignition delay range from 2,6 ms to 3,9 ms and combustion delay from 3,78 ms to 6,56 ms (62,78 DCN to 39,44 DCN).

NOTE The combustion analyser can measure shorter or longer ignition and combustion delays, but precision is not known.

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 the document, and fulfil statutory and regulatory requirements for this purpose.

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.

EN ISO 3170, *Hydrocarbon Liquids — Manual Sampling (ISO 3170)*

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

EN ISO 3696, *Water for analytical laboratory use — Specification and test methods (ISO 3696)*

ISO 1998-2, *Petroleum industry — Terminology — Part 2: Properties and tests*

IP 537, *Determination of the purity of Derived Cetane Number reference materials — Gas chromatography method*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 1998-2 and the following apply.

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

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

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