SLOVENSKI STANDARD
SIST EN 16300:2024

01-julij-2024

Nadomešča:
SIST EN 16300:2012

Goriva za motorna vozila - Določanje jodnega števila v metilnih estrih maščobnih kislin (FAME) - Računska metoda iz podatkov pridobljenih s plinsko kromatografijo

Automotive fuels - Determination of iodine value in fatty acid methyl esters (FAME) - Calculation method from gas chromatographic data

Kraftstoffe für Kraftfahrzeuge - Bestimmung der Iodzahl in Fettsäure-Methylester (FAME) - Berechnung aus gaschromatographischen Daten

Carburants pour automobiles - Détermination de l'indice d'iode des esters méthyliques d'acides gras (EMAG) - Méthode de calcul à partir des données obtenues par chromatographie en phase gazeuse

Ta slovenski standard je istoveten z: **EN 16300:2024**

ICS:

75.160.20	Tekoča goriva	Liquid fuels

SIST EN 16300:2024 **en,fr,de**

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 16300

May 2024

ICS 75.160.40

Supersedes EN 16300:2012

English Version

Automotive fuels - Determination of iodine value in fatty acid methyl esters (FAME) - Calculation method from gas chromatographic data

Carburants pour automobiles - Détermination de l'indice d'iode dans les esters méthyliques d'acides gras (EMAG) - Méthode de calcul à partir des données de chromatographie en phase gazeuse

Kraftstoffe - Bestimmung der Iodzahl in Fettsäure-Methylester (FAME) - Berechnung aus gaschromatographischen Daten

This European Standard was approved by CEN on 15 April 2024.

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 16300:2024 E

Contents

Page

European foreword ... **3**

1 Scope ... **4**

2 Normative references ... **4**

3 Terms and definitions ... **4**

4 Procedure ... **5**

5 Expression of results ... **7**

6 Precision ... **7**
6.1 General ... **7**
6.2 Repeatability, *r* ... **7**
6.3 Reproducibility, *R* ... **7**

7 Test report ... **8**

Annex A (informative) **Example for calculation** ... **9**

Bibliography ... **11**

European foreword

This document (EN 16300:2024) 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 November 2024, and conflicting national standards shall be withdrawn at the latest by November 2024.

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 16300:2012.

In comparison with the previous edition, this document has been revised editorially and the following technical modifications have been made:

a) addition of a calculation of the pattern of fatty acid methyl esters;

b) re-calculated precision statement following the revision of EN 14103.

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.

1 Scope

This document specifies a calculation procedure for the determination of iodine value ("CIV" - "calculated iodine value") of fatty acid methyl esters (FAME) to be used either as automotive fuel for diesel engines as specified in EN 14214 [2] or heating fuel or as an extender for automotive fuel for diesel engines as specified in EN 590 [3]. This procedure does not apply to Ethyl esters or esters made from fish oil and mixtures thereof.

The calculation procedure is applicable to methyl esters between C6 and C24:1. The calculation procedure uses as data entry the results from the gas chromatography determination (GC) according to EN 14103 of individual fatty acid methyl esters and is based on AOCS recommended practice Cd 1c - 85 for the determination of the iodine value of edible oil from its fatty acid composition. It is important to recognize that the latest version of EN 14103 is intended to be used for the determination of individual FAME components.

NOTE 1 Experience from the field and from several precision evaluation campaigns in Germany and elsewhere indicates that the results of the determination of iodine value by the calculation specified here are very close to results obtained by titration with Wijs solvent according to EN 14111 [1]. Observed small differences were always found to be smaller than the reproducibility published in the actual EN 14111.

For informative purposes only, but not for cases of dispute, EN 14331 [4] can also be used to extract the FAME contents from FAME containing diesel fuels (like B5, B7, B30, etc.) and to use the contents of the individual FAME components from this method as data entry for the calculation specified in this document.

This calculation method can be used only if the evaluated sample fulfils the requirement for ester content as reported in EN 14214.

The precision statement of this test method was determined by calculation from a Round Robin exercise with iodine values in the range of 16 g iodine/100 g to 126 g iodine/100 g.

The test method is also applicable for higher iodine values; however, the precision statement is not established for iodine values above 126 g iodine/100 g.

NOTE 2 For the purposes of this document, the term "% (*m*/*m*)" is used to represent the mass fraction.

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 14103:2020, *Fat and oil derivatives — Fatty Acid Methyl Esters (FAME) — Determination of ester and linolenic acid methyl ester contents*

3 Terms and definitions

No terms and definitions are listed in this document.

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/