

**MAURITIAN
STANDARD**

**MS EN
15376:2014**

First edition
2019-02-23

**Automotive fuels – Ethanol
as a blending component
for petrol – Requirements
and test methods**

ICS: 71.080.60; 75.160.20



**Mauritius Standards Bureau
Moka**

This national standard is the identical implementation of EN 15376:2014 and is adopted with the permission of CEN, Avenue Marnix 17, B-1000 Brussels, Belgium.

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National foreword

This Mauritian Standard is identical with the European Standard **EN 15376:2014**, *Automotive fuels – Ethanol as a blending component for petrol -- Requirements and test methods*. It has been adopted as a national standard upon the recommendation of the **Mechanical Engineering Standards Committee** through its **Subcommittee on Ethanol/Fuel Blend**. It was approved by the **Standards Council** on **29 October 2018** and was notified in the **Government Gazette** on **23 February 2019***.

For the purpose of this standard the following changes should be made:

- (i) the words 'European Standard' should be replaced by 'Mauritian Standard'
- (ii) the 'decimal comma' should be replaced by 'decimal point'.

* General Notice No **257** of **2019**



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English Version

Automotive fuels - Ethanol as a blending component for petrol - Requirements and test methods

Carburants pour automobiles - Ethanol comme base de
mélange à l'essence - Exigences et méthodes d'essais

Kraftstoffe für Kraftfahrzeuge - Ethanol zur Verwendung als
Blendkomponente in Ottokraftstoff - Anforderungen und
Prüfverfahren

This European Standard was approved by CEN on 6 September 2014.

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.

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PREVIEW

Foreword

This document (EN 15376:2014) 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 April 2015 and conflicting national standards shall be withdrawn at the latest by April 2015.

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

This document supersedes EN 15376:2011.

This document has originally been prepared under mandate M/344 given to CEN by the European Commission and the European Free Trade Association along with other standards intended to be complementary to the regulatory measures contained in various EU Directives, see [1], [2], [3] and [4].

If (bio)ethanol is meant for use as automotive fuel component, this document applies. It is intended to call up this European Standard in EN 228 [5], in order to define the quality of (bio)ethanol which is added/blended to the petrol.

The major updates of this third version concern the inclusion of newly developed methods for determination of inorganic chloride and sulfate, plus the lowering of their respective limits. As experience with ICP-OES instruments in the market has grown, EN 15837 has become the method in case of dispute for copper and sulfur content.

The former version gave all relevant characteristics, requirements and test methods for (bio)ethanol, which were known at that time to be necessary to define the product to be used up to a maximum 10 % (V/V) blending component for automotive petrol fuel. With the actual document, the percentage of use is expanded to allow use at all percentages up to and including 85 % (V/V) and the requirements are updated accordingly.

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

1 Scope

This European Standard specifies requirements and test methods for marketed and delivered ethanol to be used as an extender for automotive fuel for petrol engine vehicles in accordance with the requirements of EN 228 [5]. It is applicable to ethanol used for blending at all levels up to and including 85 % (V/V).

NOTE For the purposes of this document, the term “% (m/m)” and “% (V/V)” are used to represent the mass fraction, μ , and the volume fraction, φ , respectively.

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 15485:2007, *Ethanol as a blending component for petrol — Determination of sulfur content — Wavelength dispersive X-ray fluorescence spectrometric method*

EN 15486:2007, *Ethanol as a blending component for petrol — Determination of sulfur content — Ultraviolet fluorescence method*

EN 15487:2007, *Ethanol as a blending component for petrol — Determination of phosphorus content — Ammonium molybdate spectrometric method*

EN 15488:2007, *Ethanol as a blending component for petrol — Determination of copper content — Graphite furnace atomic absorption spectrometric method*

EN 15489:2007, *Ethanol as a blending component for petrol — Determination of water content — Karl Fischer coulometric titration method*

EN 15491:2007, *Ethanol as a blending component for petrol — Determination of total acidity — Colour indicator titration method*

EN 15492:2012, *Ethanol as a blending component for petrol — Determination of inorganic chloride and sulfate content — Ion chromatographic method*

EN 15691:2009, *Ethanol as a blending component for petrol — Determination of dry residue (involatile material) — Gravimetric method*

EN 15692:2009, *Ethanol as a blending component for petrol — Determination of water content — Karl Fischer potentiometric titration method*

EN 15721:2013, *Ethanol as a blending component for petrol — Determination of higher alcohols, methanol and other impurities — Gas chromatographic method*

EN 15769:2009, *Ethanol as a blending component of petrol — Determination of appearance — Visual method*

EN 15837:2009, *Ethanol as a blending component for petrol — Determination of phosphorus, copper and sulfur content — Direct method by inductively coupled plasma optical emission spectrometry (ICP OES)*

EN 15938:2010, *Automotive fuels — Ethanol blending component and ethanol (E85) automotive fuel — Determination of electrical conductivity*

EN ISO 3170:2004, *Petroleum liquids — Manual sampling (ISO 3170:2004)*