

Automotive fuels — Unleaded petrol — Requirements and test methods

ICS 75.160.20

National foreword

This British Standard is the UK implementation of EN 228:2008. It supersedes BS EN 228:2004 which is withdrawn.

This British Standard contains the necessary requirements for high octane (super) unleaded petrol, previously specified in BS 7800:2006 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PTI/2, Liquid fuels.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

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28 February 2011	Modification of National Annexes NA, NB and NC and addition of ND
31 March 2011	Correction to bibliographical references in National Annexes

English Version

Automotive fuels - Unleaded petrol - Requirements and test methods

Carburants pour automobiles - Essence sans plomb -
Exigences et méthodes d'essai

Kraftstoffe für Kraftfahrzeuge - Unverbleite Ottokraftstoffe -
Anforderungen und Prüfverfahren

This European Standard was approved by CEN on 23 May 2008.

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Foreword

This document (EN 228:2008) 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of an identical text or by endorsement, at the latest by January 2009, and conflicting national standards shall be withdrawn at the latest by January 2009.

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 228:2004.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EC Directive(s).

Significant technical changes between this European Standard and the previous edition are:

- Several revised test methods have been introduced, amongst others EN 15553 being the CEN equivalent to ASTM D 1319, incorporating European specific needs.
- Table 1, and Table 2 explicitly differentiate between requirements included in the European Fuels Directive 98/70/EC [1], including Amendment 2003/17/EC [2], and other requirements.
- “Premium unleaded petrol” becomes “unleaded petrol”.
- From 2005-1-1 Member States may decide to continue to permit the marketing of unleaded regular grade petrol. This grade needs to conform to all the requirement set in Table 1 and Table 2 of this document (for unleaded grade petrol), with the exception of a minimum motor octane number (MON) of 81 and a minimum research octane number (RON) of 91. The requirements and test methods are then to be laid down in a National Annex to this document
- Following the Mandate M/344 given to CEN by the European Commission, the Standard on ethanol as a blending component for petrol, EN 15376, has been included.

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, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This European Standard specifies requirements and test methods for marketed and delivered unleaded petrol. It is applicable to unleaded petrol for use in petrol engine vehicles designed to run on unleaded petrol.

NOTE For the purposes of this European Standard, the terms “% (m/m)” and “% (V/V)” are used to represent the mass fraction and the volume fraction respectively.

2 Normative references

The following referenced documents are indispensable for the application 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 237:2004, *Liquid petroleum products — Petrol — Determination of low lead concentrations by atomic absorption spectrometry*

EN 238:1996, *Liquid petroleum products — Petrol — Determination of the benzene content by infrared spectrometry*

EN 1601:1997, *Liquid petroleum products — Unleaded petrol — Determination of organic oxygenate compounds and total organically bound oxygen content by gas chromatography (O-FID)*

EN 12177:1998, *Liquid petroleum products — Unleaded Petrol — Determination of benzene content by gas chromatography*

EN 13016-1:2007, *Liquid petroleum products — Vapour pressure — Part 1: Determination of air saturated vapour pressure (ASVP) and calculated dry vapour pressure equivalent (DVPE)*

EN 13132:2000, *Liquid petroleum products — Unleaded petrol — Determination of organic oxygenate compounds and total organically bound oxygen content by gas chromatography using column switching*

EN 14517:2004, *Liquid petroleum products — Determination of hydrocarbon types and oxygenates in petrol — Multidimensional gas chromatography method*

EN 15376:2007, *Automotive fuels — Ethanol as a blending component for petrol — Requirements and test methods*

EN 15553:2007, *Petroleum products and related materials — Determination of hydrocarbon types — Fluorescent indicator adsorption method*

EN ISO 2160:1998, *Petroleum products — Corrosiveness to copper — Copper strip test (ISO 2160:1998)*

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

EN ISO 3171:1999, *Petroleum liquids — Automatic pipeline sampling (ISO 3171:1988)*

EN ISO 3405:2000, *Petroleum products — Determination of distillation characteristics at atmospheric pressure (ISO 3405:2000)*

EN ISO 3675:1998, *Crude petroleum and liquid petroleum products — Laboratory determination of density — Hydrometer method (ISO 3675:1998)*

EN ISO 4259:2006, *Petroleum products — Determination and application of precision data in relation to methods of test (ISO 4259:2006)*

EN ISO 5163:2005, *Petroleum products — Determination of knock characteristics of motor and aviation fuels — Motor method (ISO 5163:2005)*