SLOVENSKI STANDARD
kSIST-TP FprCEN/TR 18238:2025

01-oktober-2025

Goriva za motorna vozila - Bencin E20 - Ozadje zahtevanih parametrov, njihovih omejitev in utemeljitve

Automotive fuels - E20 petrol - Background on the parameters required, their respective limits and justification

Kraftstoffe - E20 Ottokraftstoffe - Hintergrund zu den erforderlichen Parametern, ihren jeweiligen Grenzwerten und ihrer Bestimmung

Carburants automobiles - Essence E20 - Historique des paramètres requis, leurs limites respectives et leur justification

Ta slovenski standard je istoveten z: **FprCEN/TR 18238**

ICS:

75.160.20	Tekoča goriva	Liquid fuels

kSIST-TP FprCEN/TR 18238:2025 **en,fr,de**

TECHNICAL REPORT

RAPPORT TECHNIQUE

TECHNISCHER REPORT

FINAL DRAFT
FprCEN/TR 18238

August 2025

ICS 75.160.20

English Version

Automotive fuels - E20 petrol - Background on the parameters required, their respective limits and justification

Kraftstoffe - E20 Ottokraftstoffe - Hintergrund zu den erforderlichen Parametern, ihren jeweiligen Grenzwerten und ihrer Bestimmung

This draft Technical Report is submitted to CEN members for Vote. It has been drawn up by the Technical Committee CEN/TC 19.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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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. FprCEN/TR 18238:2025 E

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European foreword

This document (FprCEN/TR 18238:2025) 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 document is currently submitted to the Vote on TR.

Introduction

Commonly available petrol blends include E5 (corresponding to blends oxygenated with C5+ fuel ethers (e.g. MTBE, ETBE, TAME) up to 22 % (*V*/*V*) and/or up to 5 % (*V*/*V*) ethanol content) and E10 (corresponding to blends oxygenated with C5+ fuel ethers (e.g. MTBE, ETBE, TAME) up to 22 % (*V*/*V*) and/or up to 10 % (*V*/*V*) ethanol content). Both fuel specifications are defined in the European petrol standard EN 228 [1].

The Renewable Energy Directive (RED) and subsequent amendments encourage the use of renewable fuels as blending components in petrol. At the CEN/TC 19 meeting in May 2011, a priority was placed on "E10+" petrol in order to be prepared for future market and legislative decisions. It was agreed that a detailed assessment of biofuels and blends in Europe over the coming decade was needed that should be prepared through a multi-stakeholder approach. To develop this longer-term vision, CEN/TC 19 worked together as Industry and Stakeholder partners to complete this assessment and outline the possible constraints and advantages of a future E10+ petrol. This led to the publication of CEN/TR 16514 [2].

In April 2023, European regulation 2023/851 was adopted that dictates that all new cars and vans registered in Europe after 2035 should not produce any tailpipe CO_2 emissions, which effectively means a ban on new light-duty vehicles powered by internal combustion engines (ICEs) using fuels containing carbon. However, light-duty vehicles equipped with ICEs will continue to operate for several decades, so renewable fuels are needed in increasing amounts to replace fossil fuels and help meet the increasing targets for lower carbon and greenhouse gas emissions from the transport sector.

In 2022, a Task Force (TF) under CEN/TC 19 was formed with the intent of developing consensus on technical requirements for an E10+ fuel specification, with the following terms of reference:

The scope of work of the TF is to 'study the DIN and CUNA work to develop consensus on technical requirements for an E10+ fuel specification what could be formed into a CEN/TS (Technical Specification) and supported with sufficient technical substantiation to be written into a CEN/TR (Technical Report)'. In layman's words: the group of experts shall take what has been done already and draft a fuel quality specification for petrol blended with more than 3,7 % (m/m) of oxygen-containing products. That shall be presented to CEN/TC 19 WG21 for discussion, agreement and continual balloting. In parallel, all deliberations and discussions around each property, limit as well as test method applicability, should be recorded to become an official technical background report by CEN.

Motivated by the decarbonisation of the transport sector, several organisations executed studies with alternative fuels that formed the basis of this Technical Specification. In 2017, ENI and FCA (Fiat) started a study on an alternative alcohol-based fuel (15 % methanol and 5 % ethanol – A20) to validate a fuel with a maximum oxygen content of 10 % (*m*/*m*). The fuel was tested in five cars. Eventually, CUNA (Italian Technical Commission for Unification in the Automotive Industry) published a specification for this A20 fuel [3]. In 2021 and 2022, DIN executed a study with the intention to align on product properties options for a petrol fuel containing ~20 % ethanol [4]. Furthermore, a CEN Technical Report (CEN/TR 16514) was prepared by TC/19 in 2013 "Automotive fuels – Unleaded petrol containing more than 3,7 % (*m*/*m*) oxygen – Roadmap, test methods and requirements for E10+ petrol". That report discusses the considerations required for the introduction of E20 petrol, covering the legislative, environmental, production and operation factors.

This document is concerned with explaining the rationale underpinning the technical limit values and related controls that are defined in the E20 CEN/TS 18227 as discussed in the CEN E20 Task Force and adopted in CEN/TC 19 WG21 (specification for unleaded petrol). Some work was done in consideration of the applicability of test methods employed in EN 228 to the E20 CEN/TS 18227 and is recorded in CEN/TR 16514 [2], with an update given in this report. At the time of publication of this document, petrol with a higher ethanol content than 10 % (*V*/*V*) or oxygen content higher than 3,7 % (*m*/*m*) is not allowed