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Automotive fuels - Paraffinic diesel fuel and blends with FAME - Background to the parameters required and their respective limits and determination

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National foreword

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

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English Version

Automotive fuels - Paraffinic diesel fuel and blends with FAME - Background to the parameters required and their respective limits and determination

Carburants pour automobiles - Gazole paraffinique et consituent d'EMAG - Historique sur la définition des paramètres requis, de leurs limites et de leurs déterminations respectives

Kraftstoff für Kraftfahrzeuge - Paraffinischer Dieselkraftstoff und Kraftstoff-Mischungen - Hintergrund zu den erforderlichen Parametern, den entsprechenden Grenzwerten und deren Bestimmung

This Technical Report was approved by CEN on 28 May 2017. It has been drawn up by the Technical Committee CEN/TC 19.

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European foreword

This document (CEN/TR 16389:2017) 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.

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 CEN/TR 16389:2012.

This second version replaces the first edition, CEN/TR 16389:2012, which has been updated following the revision of CEN/TS 15940 into a full European Standard. Discussions within CEN/TC 19 and the results of two interlaboratory studies (ILS) initiated by NEN and the TF XTL/HVO and funded by the European Commission have been included.

1 Scope

This Technical Report explains the requirements and test methods for marketed and delivered paraffinic diesel as such from synthesis (XTL) or hydrotreatment (HVO) and of blends thereof with up to 7%(*V/V*) of fatty acid methyl esters (FAME) according to European fuel specifications. It provides background information to judge the final text of the European Standard EN 15940 and gives guidance and explanations to the producers, blenders, marketers and users of paraffinic automotive diesel.

Paraffinic diesel is a high quality, clean burning fuel with virtually no sulfur and aromatics. Paraffinic diesel fuel can be used in diesel engines, also to reduce regulated emissions. In order to have the greatest possible emissions reduction, a specific calibration may be necessary. Paraffinic diesel fuel can also offer a meaningful contribution to the target of increased non-crude derived and/or renewable content in transportation fuel pool.

For general diesel engine warranty, paraffinic automotive diesel fuel may need a validation step to confirm the compatibility of the fuel with the vehicle, which for some existing engines may still need to be done. The vehicle manufacturer needs to be consulted before use.

NOTE 1 This document is directly related to the development of EN 15940 and will be updated once further publications take place.

NOTE 2 Paraffinic diesel is also used as a blending component in automotive diesel fuel. In that case, composition and properties of the final blends are defined by relevant fuel specification standards.

NOTE 3 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 590, *Automotive fuels — Diesel — Requirements and test methods*

EN 14214, *Liquid petroleum products — Fatty acid methyl esters (FAME) for use in diesel engines and heating applications — Requirements and test methods*

EN 15940, *Automotive fuels — Paraffinic diesel fuel from synthesis or hydrotreatment — Requirements and test methods*

3 Summary of the XTL/HVO taskforce work

Following the 68th CEN Technical Board meeting, CEN/TC 19 had been requested to check eventual and existing conflicts between the scope of work as proposed for Workshop 61 on "Automotive fuels - Blends of paraffinic diesel from synthesis (XTL) or hydrotreatment (HVO) and fatty acid methyl esters (FAME) - Requirements and test methods". At a CEN/TC 19/WG 24 meeting on 30 November 2010, the consensus was that there was a possible conflict between EN 590 and the Workshop 61. The advice to both the proposers and CEN/TC 19 was to take upon the work on XTL/HVO. A TF under WG 24 was established in order to address the matter and also to enable specific paraffinic diesel fuel and engine experts to exchange information.

On 13 December 2010, the Workshop 61 proposers had a teleconference with the TC Chairman and Secretary on the way forward for the agreed upon TF under WG 24. In the spirit of harmonization, they thought it advisable that the already existing CWA 15940 should also be revised. That document had been developed in 2007 – 2009 by a CEN Workshop 38 and was meant for dedicated fleet usage. In