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| | **Motorové nafty a zmesné palivá pre vznetové motory. Záležitosti týkajúce sa filtrovateľnosti za studena.** | **TNI CEN/TR 16982**<br><br>65 6525 |

Diesel blends and fuels - Cold filterability issues

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# CEN/TR 16982

September 2016

ICS 75.160.20

English Version

# Diesel blends and fuels - Cold filterability issues

Combustibles et blends pour moteurs diesel (gazole) - Problems avec filtrabilité en temperatures bas

Dieselkraftstoffe und Mischungen - Kaltefiltrierbarkeit Problematiik

This Technical Report was approved by CEN on 8 July 2016. It has been drawn up by the Technical Committee CEN/TC 19.

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## European foreword

This document (CEN/TR 16982:2016) 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.

At the plenary meeting in June 2015, CEN/TC 19 took Decision 45-2015 for new work under WG 24 to produce a Technical Report titled “CEN/TR Diesel blends - Cold filterability issues” with the scope to capture the key points raised in the presentations and discussions at the WG 24 Filter Blocking Workshop held on 1 June 2015. Consequently, this Technical Report documents the findings, interpretations and opinions of those involved in presenting the information, and these should not be considered as the opinion of WG 24.

# Introduction

During recent winters, a wide range of vehicles has been affected in specific European countries and there is a possible link with FAME composition, base diesel quality, cold flow additives and oxidation stability effects. In order to solve these issues, some countries have introduced new additional requirements in their national fuel quality specifications or “best practice” market agreements:

- In the UK, a clear correlation between low temperatures and increased vehicle filter blocking was reported, with ambient temperatures below 3 °C thought to be critical. The introduction by fuel suppliers of a voluntary Filter Blocking Test limit of 2,52 in February 2014 seems to have improved the situation, but has not solved the problem.

- In Italy, ENI recommended that ASTM D2709 could be an alternative method for fast evaluation of contaminants in FAME. ENI also suggested, as an intermediate solution, a filtration step in refineries or terminals to improve FAME quality if needed. In ENI’s experience, implementing this quality control “best practice” in Italy, in collaboration with their biofuel suppliers, has resulted in no further vehicle filter blocking incidents being reported in the last two years.

- In France, to solve the diesel fuel filter plugging when the decrease in temperature continues slowly over several days, the saturated methyl ester content in FAME was limited in winter to a maximum of 16 % (*m/m*) and in summer to a maximum of 30 % (*m/m*) in national law.

CEN/TC 19/WG 24 organized a workshop on the 1st of June 2015 in order to clarify the issue, to gather relevant data and to propose recommendations to CEN/TC 19 with respect to changes to the EN 590 (regular B7 diesel), EN 16734 (B10), EN 16709 (B20/B30) and EN 14214 (B100) standards to protect the market from filter blocking.

At the end of the workshop, it was agreed that a CEN Technical Report should be produced documenting the WG 24 Filter Blocking Workshop held on 01 June 2015 (i.e. this report). It therefore lays down the status-quo of the evidence on filter blocking issues in the European market at that point in time. It should be read as such and later information will still be valuable for CEN/TC 19 specification drafting.

# 1 Scope

This Technical Report provides the latest thinking described during a workshop on 1 June 2015 by national experts involved in the investigations, and proposes possible solutions to solve the diesel fuel filter plugging issues in these countries.

NOTE For the purposes of this Technical Report, the terms "% (*m/m*)" and "% (*V/V*)" are used to represent respectively the mass fraction, $\mu$, and the volume fraction, $\varphi$.