

English Version

Petroleum products - Guidelines for good housekeeping - Part 1: Automotive diesel fuels

Produits pétroliers - Guide pour une bonne maîtrise de
la qualité du produit - Partie 1: Carburants diesels pour
automobiles (gazoles)

Mineralölerzeugnisse - Leitfaden für eine gute
Systemwartung - Teil 1: Dieselmotorkraftstoffe für
Kraftfahrzeuge

This Technical Report was approved by CEN on 29 December 2019. It has been drawn up by the Technical Committee CEN/TC 19.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Contents

Page

European foreword.....	3
Introduction	4
1 Scope	5
2 Normative references	5
3 Terms and definitions	5
4 Adulterants and contaminants in the supply chain	5
4.1 General	5
4.2 Water	6
4.3 Sediment	6
4.4 Metal ions	6
4.5 Biological contamination	7
5 Housekeeping guidelines	7
5.1 Elements of good housekeeping	7
5.1.1 Operations	7
5.1.2 Hardware	7
5.1.3 Maintenance	8
5.2 Detailed recommendations	8
5.2.1 General	8
5.2.2 Refineries	8
5.2.3 Terminals	9
5.2.4 Transport and operations	11
5.2.5 Filling stations	12
5.3 Handling of biofuels	12
5.3.1 General	12
5.3.2 Sampling and testing	13
5.3.3 Operations	13
Annex A (normative) Diesel vehicle factors	14
A.1 General remarks	14
A.2 Fuel tank	14
A.3 Fuel system temperature cycles	14
A.4 Filters	14
Annex B (normative) Abrasive particles	15
Annex C (normative) After-market additives	17
Bibliography	18

European foreword

This document (CEN/TR 15367-1:2020) 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 15367-1:2014.

The update to this document primarily addresses quality issues that can be associated with hard abrasive particles in diesel fuel that can cause wear damage to high pressure common rail fuel injection systems.

CEN/TR 15367 consists of the following parts, under the general title *Petroleum products - Guidelines for good housekeeping*:

- *Part 1: Automotive diesel fuels*
- *Part 2: Automotive petrol fuels*
- *Part 3: Prevention of cross-contamination*

This part of this standard describes the distribution of automotive fuels in general and diesel in specific detail. Part 2 was subsequently published to provide guidance on petrol distribution and specifically to address ethanol issues. Finally, Part 3 was published to provide additional guidance on preventing cross-contamination of fuel products in common supply and distribution systems. For further information on the relationship between and the history behind each of the parts, see the Introduction to this document.

Introduction

During its meeting held in Cannes on June 27 2003, WG 24 “Specification for Automotive diesel” decided that a guidance document on good housekeeping could be instrumental in preventing potential motoring problems caused by contamination in the supply chain. This was endorsed by CEN/TC 19 resolution 24.5 and resulted in an effective publication of the first Technical Report in March 2006.

Subsequently at the CEN/TC 19/WG 24 meeting on 18 October, 2017 in Zurich, Switzerland there were technical presentations describing serious wear and damage problems in modern high pressure diesel vehicle fuel injection systems in Northern Germany and the South East of the United Kingdom. A CEN task force was formed in January 2018 to investigate these wear and damage issues.

Investigations by that CEN/TC 19/WG 24 Abrasive Particles task force have shown internal damage to fuel injector moving parts, internal valves and pressure relief valves causing internal injector leakage, engine malfunction indicator light illumination, poor engine operation and in some cases complete engine shutdown [9]. The damage is believed to be caused by hard particulates in the diesel fuel abrading moving components.

This guidance document has been updated to reflect the abrasive particle contamination issue.

When a similar guideline for petrol was being drafted, it was decided to link these two. The best option was to publish them as separate parts of the same CEN document, which is achieved by revising the original CEN/TR 15367:2006 *Petroleum products — Automotive Diesel Fuels — Guide for good housekeeping* as part 1. Apart from some harmonization of wording no changes have been incorporated.

Two additional reports have now been published in this series regarding Automotive Petrol Fuels (Part 2) and the Prevention of Cross Contamination (Part 3). The work on these three documents has been carried out with support from CONCAWE and other stakeholders.

Automotive fuel specifications generally apply at the point of delivery to the customer. To ensure the quality at this point, the best practice is to make sure that the product meets specification when it is dispatched from the refinery and to have systems in place to ensure that it cannot go off-specification on its way to the customer. There will be more than one method or procedure to handle many of the potential contamination issues throughout the distribution chain, thus the advice in this document outlines principles to apply, but does not specify the precise detail of the methods to be adopted in all cases. Nevertheless, it is strongly recommended that all the procedures or measures to be applied along the distribution chain should be defined using a Total Quality Assurance methodology.

1 Scope

This document provides general guidance on diesel fuel housekeeping to ensure appropriate cleanliness and to prevent onward distribution of contaminants.

It does not pre-empt national or local regulations but addresses the issues of contamination by water, sediment, inorganic contaminants, or microbial growth that may occur in the supply chain during manufacture, blending, storage and transportation. It does not address contamination by other fuel products nor does it address possible contamination by water or sediment that may occur on-board vehicles. Information on vehicle factors is presented in Annex A, however.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 590,¹ *Automotive fuels - Diesel - Requirements and test methods*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

3.1

supply chain

process consisting of the following four parts:

- refineries,
- terminals (storage and blending sites),
- filling stations (including retail and industrial customer sites), and
- transportation from refineries to terminals, terminals to terminals and from terminals to filling stations.

Note 1 to entry: Information on additives beyond the supply chain is given in Annex C.

4 Adulterants and contaminants in the supply chain

4.1 General

EN 590 requires that “Diesel fuel shall be free from any adulterant or contaminant that may render the fuel unacceptable for use in diesel engine vehicles”. This subclause describes some of the more common causes

¹ Impacted by EN 590:2013+A1:2017.