PD ISO/TS 17307:2016

BSI Standards Publication

Petroleum products — Biodiesel — Determination of total esters content by gas chromatography

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National foreword

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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.

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Contents

Page

Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 28, *Petroleum products and related products of synthetic or biological origin*, Subcommittee SC 7, *Liquid biofuels*.

Petroleum products — Biodiesel — Determination of total esters content by gas chromatography

WARNING — The use of this Technical Specification might involve the usage of dangerous materials and equipment. It is the responsibility of the user to establish the appropriate security, health and environmental practices, and to determine the applicability of regulatory limitations before their use.

1 Scope

This Technical Specification establishes a method for determining the total methyl ester content in fatty acid methyl ester (FAME) by gas chromatography and using an external standard. The method is suitable for biodiesel which contains esters between C6 and C26. This method allows verifying that the total ester content is greater than 96,5 % (*m/m*).

NOTE 1 The method also allows determination of the total ethyl ester content in FAEE, but precision for this has not been established.

This Technical Specification does not determine the linolenic nor the poly-unsaturated alkyl ester content. Alternative techniques, such as EN 14103[1] and EN 15779[2], respectively, are available for this.

NOTE 2 For the purposes of this Technical Specification, the term "% (*m/m*)" is used to represent the mass fraction, *μ.*

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.

ISO 3170, *Petroleum liquids — Manual sampling*

ISO 3171, *Petroleum liquids — Automatic pipeline sampling*

ISO 4259, *Petroleum products — Determination and application of precision data in relation to methods of test*

3 Terms and definitions

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

3.1
biodiesel
fuel comprised of monoalkyl esters of fatty acids, derived from vegetable oils or animal fat

3.2
total esters
sum of concentration of all esters (C6 – C26)

4 Principle

A sample is analysed by gas chromatography using an external calibration method to quantify the esters present in biodiesel regardless of the raw material used in its production.