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BSI Standards Publication

Petroleum products and other liquids — Guidance for flash point and combustibility testing

bsi.

National foreword

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

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TECHNICAL REPORT

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Second edition
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Petroleum products and other liquids — Guidance for flash point and combustibility testing

Produits pétroliers et autres liquides — Lignes directrices pour les essais de combustibilité et de point d'éclair

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 28, *Petroleum and related products, fuels and lubricants from natural or synthetic sources*.

This second edition cancels and replaces the first edition (ISO 29662:2009). The main technical changes compared to the previous edition are as follows:

— the title has been changed;

— combustibility test details have been further added;

— a list of examples of regulations have been added;

— test samples, to include biodiesel, mixtures and samples that form a skin during testing have been added;

— the use of low hazard glass thermometers has been added;

— further details regarding the requirements for barometric corrections have been added;

— Annex A has been added to include temperature ranges for each test method.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

This document was written to assist laboratory managers and technicians, regulators, specification writers and industry in the use, specification and application of flash point and combustibility tests for liquids and semi-solids.

The flash point test can be summarised as a procedure where a test portion is introduced into a temperature-controlled test cup and an ignition source is applied to the vapours produced by the test portion to determine if the vapour / air mixture is flammable or at what temperature the vapour / air mixture is flammable.

Combustibility tests in this document comprise fire point, sustained combustibility and sustained burning tests. These tests can be summarised as a procedure where a test portion is introduced into a temperature-controlled test cup and an ignition source is applied to the vapours produced by the test portion to determine if the vapour / air mixture catches fire and continues to burn.

This document was developed by the Joint ISO/TC 28 - ISO/TC 35 WG9 on flash point methods.

TECHNICAL REPORT **ISO/TR 29662:2020**

Petroleum products and other liquids — Guidance for flash point and combustibility testing

1 Scope

This document establishes an overview of test methods in the field to determine flash point and combustibility of petroleum and related products. It presents advice on application and specification development. This document is not intended to be a comprehensive manual on flash point and combustibility tests, and the interpretation of test results, however it covers the key aspects on these subjects.

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.

ISO 1998-1, *Petroleum industry — Terminology — Part 1: Raw materials and products*

ISO 1998-2, *Petroleum industry — Terminology — Part 2: Properties and tests*

3 Terms and definitions

For the purposes of this document, the terms and definitions in ISO 1998-1 and ISO 1998-2 and the following apply.

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

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

3.1
repeatability
r
difference between two test results obtained by the same operator with the same apparatus under constant operating conditions, on identical test material would, in the long run and in the normal operation of the test method, exceed the given value in only one case in 20

Note 1 to entry: The general description deviates from ISO 4259-1 used in many of the standards dealt with in this document.

3.2
reproducibility
R
difference between two single and independent test results obtained by different operators in different laboratories on identical test material that would, in the long run and in the normal operation of the test method, exceed the given value in only one case in 20

Note 1 to entry: The general description deviates from ISO 4259-1 used in many of the standards dealt with in this document.