

Determination of flash point — Pensky-Martens closed cup method

The European Standard EN ISO 2719:2002 has the status of a
British Standard

ICS 75.080

National foreword

This British Standard is the official English language version of EN ISO 2719:2002. It is identical with ISO 2719:2002. BS EN ISO 2719:2002 supersedes BS EN 22719:1994 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PTI/13, Petroleum testing and terminology, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

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

Cross-references

The British Standards which implement international or European publications referred to in this document may be found in the *BSI Catalogue* under the section entitled “International Standards Correspondence Index”, or by using the “Search” facility of the *BSI Electronic Catalogue* or of British Standards Online.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

This British Standard, having been prepared under the direction of the Materials and Chemicals Sector Policy and Strategy Committee, was published under the authority of the Standards Policy and Strategy Committee on 10 December 2002

© BSI 21 July 2004

Summary of pages

This document comprises a front cover, an inside front cover, the EN ISO title page, the EN ISO foreword page, the ISO title page, pages ii to v, a blank page, pages 1 to 21, the Annex ZA page, a inside back cover and a back cover.

The BSI copyright notice displayed in this document indicates when the document was last issued.

Amendments issued since publication

Amd. No.	Date	Comments
15248	21 July 2004	Implementation of the European Standard

English version

Determination of flash point - Pensky-Martens closed cup
method (ISO 2719:2002)

Détermination du point d'éclair - Méthode Pensky-Martens
en vase clos (ISO 2719:2002)

Bestimmung des Flammpunktes - Verfahren nach Pensky-
Martens mit geschlossenem Tiegel (ISO 2719:2002)

This European Standard was approved by CEN on 15 October 2002.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.



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

Management Centre: rue de Stassart, 36 B-1050 Brussels

Foreword

This document (EN ISO 2719:2002) has been prepared by Technical Committee ISO/TC 28 "Petroleum products and lubricants" in collaboration with Technical Committee CEN/TC 19 "Petroleum products, lubricants and related products", the secretariat of which is held by NEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by May 2003, and conflicting national standards shall be withdrawn at the latest by May 2003.

This document supersedes EN 22719:1993.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Endorsement notice

The text of ISO 2719:2002 has been approved by CEN as EN ISO 2719:2002 without any modifications.

NOTE Normative references to International Standards are listed in annex ZA (normative).

INTERNATIONAL STANDARD

ISO
2719

Third edition
2002-11-15

Determination of flash point — Pensky- Martens closed cup method

Détermination du point d'éclair — Méthode Pensky-Martens en vase clos



Reference number
ISO 2719:2002(E)

Contents

	Page
1 Scope	1
2 Normative references	1
3 Term and definition	2
4 Principle	2
5 Chemicals and materials	2
6 Apparatus	2
7 Apparatus preparation	3
7.1 Location of the apparatus	3
7.2 Cleaning the test cup	3
7.3 Apparatus assembly	3
7.4 Apparatus verification	3
8 Sampling	3
9 Sample handling	4
9.1 Petroleum products	4
9.1.1 Subsampling	4
9.1.2 Samples containing undissolved water	4
9.1.3 Samples that are liquid at ambient temperature	4
9.1.4 Samples that are semi-solid or solid at ambient temperature	4
9.2 Paints and varnishes	4
10 Procedure	4
10.1 General	4
10.2 Procedure A	4
10.3 Procedure B	5
11 Calculation	5
11.1 Conversion of barometric pressure reading	5
11.2 Correction of observed flash point to standard atmospheric pressure	6
12 Expression of results	6
13 Precision	6
13.1 General	6
13.2 Repeatability, r	6
13.3 Reproducibility, R	7
14 Test report	7

Annexes

A Apparatus verification	8
B Pensky-Martens closed cup test apparatus	11
C Thermometer specifications	17
D Adaptor for low-range thermometer	18
Bibliography	21

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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 2719 was prepared by Technical Committee ISO/TC 28, *Petroleum products and lubricants*.

This third edition cancels and replaces the second edition (ISO 2719:1988), which has been technically revised.

Annexes B and C form a normative part of this International Standard. Annexes A and D are for information only.

Introduction

Flash point values may be used in shipping, storage, handling and safety regulations, as a classification property to define “flammable” and “combustible” materials. Precise definition of the classes is given in each particular regulation.

A flash point value may indicate the presence of highly volatile material(s) in a relatively non-volatile or non-flammable material and flash point testing may be a preliminary step to other investigations into the composition of unknown materials.

Flash point determinations should not be carried out on potentially unstable, decomposable, or explosive materials, unless it has been previously established that heating the specified quantity of such materials in contact with the metallic components of the flash point apparatus within the temperature range required for the method will not induce decomposition, explosion or other adverse effects.

The interpretation of flash point results obtained on material containing halogenated hydrocarbons should be considered with caution, as these mixtures can give anomalous results.

Determination of flash point — Pensky-Martens closed cup method

WARNING — The use of this International Standard may involve hazardous materials, operations and equipment. This International Standard does not purport to address all of the safety problems associated with its use. It is the responsibility of the user of this International Standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

1 Scope

This International Standard describes two procedures, A and B, using the Pensky-Martens closed cup tester, for determining the flash point of combustible liquids, liquids with suspended solids, liquids that tend to form a surface film under the test conditions and other liquids. It is applicable for liquids with a flash point above 40 °C.

NOTE 1 Although technically kerosines with a flash point above 40 °C may be tested using this International Standard, it is standard practice to test kerosines according to ISO 13736^[8]. Similarly, unused lubricating oils are normally tested according to ISO 2592^[5].

Procedure A is used for the determination of the flash point of paints and varnishes that do not form a surface film, unused lubricating oils and other petroleum products not covered by Procedure B.

Procedure B is used for the determination of the flash point of residual fuel oils, cutback bitumens, used lubricating oils, liquids that tend to form a surface film, liquids with suspensions of solids and highly viscous materials such as polymeric solutions and adhesives.

NOTE 2 For the comparison of the flash points of used and unused lubricating oils, such as in a lubricant monitoring scheme, used lubricating oils may be tested using Procedure A. However, the precision data for these materials is only valid for Procedure B.

This International Standard is not applicable to water-borne paints or liquids contaminated by traces of highly volatile materials.

NOTE 3 Water-borne paints may be tested using ISO 3679^[6]. Liquids contaminated by traces of highly volatile materials may be tested using ISO 1523^[4] or ISO 3679.

NOTE 4 Precision data is only valid for the flash point ranges given in clause 13.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 1513:1992, *Paints and varnishes — Examination and preparation of samples for testing*

ISO 3170:—¹⁾, *Petroleum liquids — Manual sampling*

1) To be published. (Revision of ISO 3170:1988)