

Flashpoint of petroleum and related products —

Part 4: Method for determination of flashpoint (rapid equilibrium method)

Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the Petroleum Standards Policy Committee (PTC/-) to Technical Committee PTC/13, upon which the following bodies were represented:

- Association of Consulting Scientists
- Association of United Kingdom Oil Independents
- British Lubricants Federation Limited
- British Steel plc
- GAMBICA (BEAMA Ltd.)
- Institute of Petroleum
- Ministry of Defence
- Society of Motor Manufacturers and Traders Limited

This British Standard, having been prepared under the direction of the Petroleum Standards Policy Committee, was published under the authority of the Standards Board and comes into effect on 31 January 1992

© BSI 07-1999

First published February 1986
Second edition January 1992

The following BSI references relate to the work on this standard:
Committee reference PTC/13
Draft for comment 81/52430 DC

ISBN 0 580 20275 5

Amendments issued since publication

Amd. No.	Date	Comments

Contents

	Page
Committees responsible	Inside front cover
Foreword	ii
1 Scope	1
2 References	1
3 Definition	1
4 Principle	1
5 Apparatus	1
6 Sampling and sample treatment	2
7 Preparation of apparatus	2
8 Procedure	2
9 Calculation	3
10 Precision	4
11 Test report	4
Figure 1 — Plan diagram of flashpoint tester	5
Figure 2 — Section of block through nozzle of test flame	5
Figure 3 — Cover	6
Figure 4 — Slide	6
Figure 5 — Section of block through filler hole	7
Publication(s) referred to	Inside back cover

Foreword

This Part of BS 6664 has been prepared under the direction of the Petroleum Standards Policy Committee. It supersedes BS 6664-4:1986, which is withdrawn.

This edition of BS 6664-4 is technically equivalent to the requirements for petroleum and related products given in ISO 3679:1983 “*Paints, varnishes, petroleum and related products — Determination of flashpoint — Rapid equilibrium method*”, published by the International Organization for Standardization (ISO). The only difference between this edition of BS 6664-4 and ISO 3679 is that BS 6664-4 is restricted to petroleum and related products and does not cover paints and varnishes. Paints and varnishes are now covered by BS EN 456:1991 which is a modified version of ISO 3679 in which all reference to petroleum has been deleted.

Other British Standard methods for the determination of flashpoint¹⁾ of petroleum and related materials include the following:

BS 2000, *Methods of test for petroleum and its products — Part 33: Flash point by the Abel apparatus (Statutory method: Petroleum (Consolidation) Act 1928) — Part 34: Flash point by Pensky-Martens closed tester — Part 35: Flash point (open) and fire point of petroleum products by the Pensky-Martens apparatus — Part 113: Flash point (closed) of cutback bitumen — Part 170: Flash point by the Abel apparatus (non-statutory method).*

BS 4689, *Method for determination of flash and fire points to petroleum products: Cleveland open cup method.*

This Part of BS 6664 describes one of two methods for the determination of the flashpoint of petroleum and related products and it should be read in conjunction with BS 6664-2 when selecting a method. In BS 6664-2 a similar determination is specified, using cups.

In both methods the test is carried out when the product under test and the air/vapour mixture above it in the test vessel are approximately in temperature equilibrium.

The apparatus specified in this Part of BS 6664 enables a similar result to be determined using a more rapid procedure and with a smaller test portion (2 mL) of material than that given in BS 6664-2. In addition, the apparatus can be made portable to the extent of being suitable for on-site testing as well as for normal use in laboratories.

Collaborative work²⁾ has shown that results obtained by these procedures are comparable.

Nevertheless the interpretation of results obtained from solvent mixtures containing halogenated hydrocarbons should be considered with caution as these mixtures can give anomalous results.³⁾

NOTE The flash/no flash test using the same equipment under equilibrium conditions is given in BS 6664-3.

¹⁾ In this standard the term “flashpoint” has been used as a single word. In other British Standards such as BS 2000 and BS 4689 the term has been used as two words. No difference is implied by this difference in usage which has arisen from the separate development of these two groups of standards.

²⁾ Bell, L.H. *J. Inst. Petrol*, **57**, (556), 1971.

³⁾ Rybicky, J. and Stevens, J.R. *J. Coatings Technol.* **53**, (676), 40–42, 1981.

For ease of production the ISO text has been used.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

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

Summary of pages

This document comprises a front cover, an inside front cover, pages i to iv, pages 1 to 8, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.