

Methods of test for

Paints —

**Part A9: Determination of flashpoint
(closed cup equilibrium method —**

**Flashpoint of
petroleum and related
products —**

**Part 2: Method for determination of
flashpoint (closed cup equilibrium
method) —**

**[ISO title: Paints, varnishes, petroleum
and related products —
Determination of flashpoint — Closed
cup equilibrium method]**

UDC 667.612:536.468:543.873

Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the Petroleum Standards Committee (PTC/-) and the Pigments, Paints and Varnishes Standards Committee (PVC/-) to Technical Committees PTC/13 and PVC/10, upon which the following bodies were represented:

- British Gas Corporation
- Chemical Industries Association
- Electricity Supply Industry in England and Wales
- Greater London Council
- Health and Safety Executive
- Institute of Metal Finishing
- Institute of Petroleum
- Ministry of Defence
- Oil and Colour Chemists' Association
- Paint Research Association
- Paintmakers Association of Great Britain Ltd.
- Titanium Pigment Manufacturers' Technical Committee
- Coopted member

This British Standard, having been prepared under the direction of the Petroleum Standards Committee and the Pigments, Paints and Varnishes Standards Committee, was published under the authority of the Board of BSI and comes into effect on 28 February 1986

© BSI 04-1999

First published, as BS 3900-A9, April 1973
First revision, jointly with BS 6664-2, February 1986

The following BSI references relate to the work on this standard:
Committee reference PTC/13 and PVC/10
Draft for comment 81/52418 DC

ISBN 0 580 14786 X

Amendments issued since publication

Amd. No.	Date of issue	Comments

Contents

	Page
Committees responsible	Inside front cover
National foreword	ii
0 Introduction	1
1 Scope and field of application	1
2 References	1
3 Definition	1
4 Principle	1
5 Apparatus	1
6 Sampling and sample treatment	2
7 Procedure	2
8 Calculation	3
9 Precision	3
10 Test report	4
11 Tests for referee purposes	4
Annex A Suitable closed cups specified in national standards	5
Annex B Sampling procedures	5
Figure — Closed cup, with fitted stirrer (see 5.1), immersed in the bath	4
Publications referred to	Inside back cover

National foreword

These Parts of BS 3900 and BS 6664 have been prepared under the direction of the Petroleum Standards Committee and the Pigments, Paints and Varnishes Standards Committee. They are identical with ISO 1523-1983 “*Paints, varnishes, petroleum and related products — Determination of flashpoint — Closed cup equilibrium method*”, published by the International Organization for Standardization (ISO). ISO 1523 was prepared as a result of discussions in ISO Technical Committee 28, Petroleum products and lubricants, and ISO Technical Committee 35, Paints and varnishes, in which the UK participated.

This Part of BS 3900 supersedes BS 3900-A9:1973, which is withdrawn. This revision contains only minor technical changes from the previous edition of BS 3900-A9, and it essentially constitutes an editorial revision to enable the test procedure which was applicable to paints, varnishes and related products to be equally applicable to petroleum and similar products. To ensure that this additional applicability is not overlooked by its publication within BS 3900, covering methods of test for paints, this standard is also published as Part 2 of BS 6664, covering flashpoint of petroleum and related products.

Initially BS 6664 will consist of four Parts which are identical with four international standards prepared jointly by ISO/TC 28 and ISO/TC 35, which correspond as follows:

International standard	Corresponding British Standard	
	BS 3900 Methods of test for paints	BS 6664 Flashpoint of petroleum and related products
ISO 1516:1981	Part A8:1986 Test for flash/no flash (closed cup equilibrium method)	Part 1:1986 Method of test for flash/no flash (closed cup equilibrium method)
ISO 1523:1983	Part A9:1986 Determination of flashpoint (closed cup equilibrium method)	Part 2:1986 Method for determination of flashpoint (closed cup equilibrium method)
	BS 3900 Methods of test for paints	BS 6664 Flashpoint of petroleum and related products
ISO 3679:1983	Part A14:1986 Determination of flashpoint (rapid equilibrium method)	Part 4:1986 Method for determination of flashpoint (rapid equilibrium method)
ISO 3680:1983	Part A13:1986 Test for flash/no flash (rapid equilibrium method)	Part 3:1986 Method of test for flash/no flash (rapid equilibrium method)

Additional Parts may eventually be added to BS 6664, if appropriate. 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.*
- BS 2000-33, *Flash point by the Abel apparatus (Statutory method: Petroleum (Consolidation) Act 1928).*
- BS 2000-34, *Flash point by Pensky-Martens closed tester.*
- BS 2000-35, *Flash point (open) and fire point of petroleum products by the Pensky-Martens apparatus.*

¹⁾ In this standard the term “flashpoint” has been used as a single word to maintain the identity with ISO 1523. In other British Standards such as BS 2000 and BS 4689 (identical with ISO 2592) 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 standard.

BS 2000-113, *Flash point (closed) of cutback bitumen*.

BS 2000-170, *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*.

It has been assumed in the drafting of this British Standard that it will be used and applied by those who are appropriately qualified and experienced.

Terminology and conventions. The text of the international standard has been approved as suitable for publication as a British Standard without deviation. Some terminology and certain conventions are not identical with those used in British Standards; attention is drawn especially to the following.

The comma has been used throughout as a decimal marker. In British Standards it is current practice to use a full point on the baseline as the decimal marker.

Wherever the words "International Standard" appear, referring to this standard, they should be read as "British Standard" and wherever the identification "ISO 1523" appears it should be read as either "BS 3900-A9" or "BS 6664-2".

Cross-references

International standard	Corresponding British Standard
	BS 3900 Methods of test for paints
ISO 1512:1974	Part A1:1970 Sampling (Technically equivalent)
ISO 1513:1980	Part A2:1983 Examination and preparation of samples for testing (Identical)
ISO 1516:1981	Part A8:1986 ^a . Test for flash/no flash (closed cup equilibrium method) (Identical)
ISO 3170:1975 ^b	BS 3195 Methods for sampling petroleum products Part 1:1978 Liquid hydrocarbons — manual sampling (Identical)
ISO 3679:1983	BS 3900 Methods of test for paints Part A14:1986 ^c Determination of flashpoint (rapid equilibrium method) (Identical)

^a Also numbered as BS 6664-1 (see paragraph 3).

^b In revision.

^c Also numbered as BS 6664-4 (see paragraph 3).

There is no British Standard corresponding to ISO 3171:1975²⁾. The Technical Committee PTC/13 has reviewed the provisions of ISO 3171 to which reference is made in **B.2** and has decided that they are acceptable for use in conjunction with this standard.

With reference to Annex A, the British Standards referred to have been withdrawn and superseded by the following Parts of BS 2000 (see paragraph 4) which are technically equivalent to the withdrawn British Standards.

BS 3442 superseded by BS 2000-33 and BS 2000-170;

BS 2839 superseded by BS 2000-34.

²⁾ In revision.