Third edition 2017-08

Petroleum and related products — Determination of flash and fire points — Cleveland open cup method

Pétrole et produits connexes — Détermination des points d'éclair et de feu — Méthode Cleveland à vase ouvert





COPYRIGHT PROTECTED DOCUMENT

© ISO 2017, Published in Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office Ch. de Blandonnet 8 • CP 401 CH-1214 Vernier, Geneva, Switzerland Tel. +41 22 749 01 11 Fax +41 22 749 09 47 copyright@iso.org www.iso.org

COI	ntents	Page
Foreword		iv
1	Scope	1
2	Normative references	1
3	Terms and definitions	1
4	Principle	
5	Chemicals and materials	
6	Apparatus	
7	Preparation of apparatus	
	7.1 Location of apparatus	
	7.2 Cleaning the test cup	
	7.3 Preparing the test cup	
	7.4 Assembly of apparatus	
	7.5 Verification of apparatus	
8	Sampling	3
9	Sample handling	4
	9.1 Subsampling	
	9.2 Samples containing undissolved water	
	9.3 Samples that are liquid at ambient temperature	4
	9.4 Samples that are semisolid or solid at ambient temperature	4
10	Procedure for determining flash point	4
11	Procedure for determining fire point	6
12	Calculation	6
13	Expression of results	6
14	Precision	7
	14.1 General	7
	14.2 Repeatability, r	7
	14.3 Reproducibility, <i>R</i>	7
15	Test report	7
Ann	ex A (normative) Cleveland open cup apparatus	8
Ann	ex B (normative) Temperature measuring device specification	11
Ann	ex C (informative) Verification of apparatus	13
Ann	ex D (informative) Prevention of surface skin formation when testing bitumens	
	and asphalts	16
Bibli	iography	18

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 on 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 the following URL: 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 third edition cancels and replaces the second edition (ISO 2592:2000), which has been technically revised and aligned with ASTM D92.

The main technical changes compared to the previous edition are as follows:

- a) Annex D on an alternative procedure for handling skin forming products has been added;
- b) the temperature measuring device requirements in Annex B has been revised;
- c) the flash point reproducibility has been changed from 17 °C to 18 °C, to align with ASTM D92 on the basis of recent precision data;
- d) a procedure to determine an approximate flash point of a sample with an unknown expected flash point has been included, to align with ASTM D92.