SLOVENSKI STANDARD
oSIST prEN ISO 15029-2:2007

01-februar-2007

Nafta in sorodni proizvodi - Doloļanje vģignih lastnosti tekoļin, odpornih proti ognju, ob razprģitvi - 2. del: Prģni preskus ï Prģna sprostilna metoda s stabiliziranim plamenskim segrevanjem (ISO/DIS 15029-2:2006)

Petroleum and related products - Determination of spray ignition characteristics of fire-resistant fluids - Part 2: Spray test - Stabilized flame heat release spray method (ISO/DIS 15029-2:2006)

Mineralölerzeugnisse und verwandte Produkte - Bestimmung der Zündeigenschaften von Sprühstrahlen schwer entflammbarer Flüssigkeiten - Teil 2: Sprühstrahl-Zündprüfung - Wärmeabgabe einer stabilisierten Flamme (ISO/DIS 15029-2:2006)

Produits pétroliers et produits connexes - Détermination des caractéristiques d'inflammation des fluides difficilement inflammables en jet pulvérisé - Partie 2: Essai sur jet pulvérisé - Méthode par dégagement de chaleur d'une flamme stabilisée (ISO/DIS 15029-2:2006)

Ta slovenski standard je istoveten z: prEN ISO 15029-2

ICS:

13.220.40	Sposobnost vžiga in obnašanje materialov in proizvodov pri gorenju	Ignitability and burning behaviour of materials and products
75.080	Naftni proizvodi na splošno	Petroleum products in general

oSIST prEN ISO 15029-2:2007 en

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

DRAFT
prEN ISO 15029-2

November 2006

ICS 13.220.40; 75.080

English Version

Petroleum and related products - Determination of spray ignition characteristics of fire-resistant fluids - Part 2: Spray test - Stabilized flame heat release spray method (ISO/DIS 15029-2:2006)

Produits pétroliers et produits connexes - Détermination des caractéristiques d'inflammation des fluides difficilement inflammables en jet pulvérisé - Partie 2: Essai sur jet pulvérisé - Méthode par dégagement de chaleur d'une flamme stabilisée (ISO/DIS 15029-2:2006)

This draft European Standard is submitted to CEN members for parallel enquiry. It has been drawn up by the Technical Committee CEN/TC 19.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CEN 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.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

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

Foreword

This document (prEN ISO 15029-2:2006) has been prepared by Technical Committee ISO/TC 28 "Petroleum products and lubricants" in collaboration with Technical Committee CEN/TC 19 "Gaseous and liquid fuels, lubricants and related products of petroleum, synthetic and biological origin", the secretariat of which is held by NEN.

This document is currently submitted to the parallel Enquiry.

Endorsement notice

The text of ISO/DIS 15029-2:2006 has been approved by CEN as prEN ISO 15029-2:2006 without any modifications.

DRAFT INTERNATIONAL STANDARD ISO/DIS 15029-2

ISO/TC **28**

Secretariat: **ANSI**

Voting begins on:
2006-11-09

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2007-04-09

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Petroleum and related products — Determination of spray ignition characteristics of fire-resistant fluids —

Part 2:
Spray test — Stabilized flame heat release spray method

Produits pétroliers et produits connexes — Détermination des caractéristiques d'inflammation des fluides difficilement inflammables en jet pulvérisé —

Partie 2: Essai sur jet pulvérisé — Méthode par dégagement de chaleur d'une flamme stabilisée

ICS 13.220.40; 75.080

ISO/CEN PARALLEL ENQUIRY

The CEN Secretary-General has advised the ISO Secretary-General that this ISO/DIS covers a subject of interest to European standardization. **In accordance with the ISO-lead mode of collaboration as defined in the Vienna Agreement, consultation on this ISO/DIS has the same effect for CEN members as would a CEN enquiry on a draft European Standard.** Should this draft be accepted, a final draft, established on the basis of comments received, will be submitted to a parallel two-month FDIS vote in ISO and formal vote in CEN.

To expedite distribution, this document is circulated as received from the committee secretariat. ISO Central Secretariat work of editing and text composition will be undertaken at publication stage.

Pour accélérer la distribution, le présent document est distribué tel qu'il est parvenu du secrétariat du comité. Le travail de rédaction et de composition de texte sera effectué au Secrétariat central de l'ISO au stade de publication.

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. 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 document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 15029-2 was prepared by Technical Committee ISO/TC 28, *Petroleum products and lubricants*.

ISO 15029 consists of the following parts, under the general title *Petroleum and related products — Determination of spray ignition characteristics of fire-resistant fluids*:

— *Part 1: Spray flame persistence — Hollow-cone nozzle method*

— *Part 2: Spray test — Stabilized flame heat release method*

— *Part 3: Spray test — Large scale method*

Petroleum and related products — Determination of spray ignition characteristics of fire-resistant fluids — Part 2: Spray test - Stabilized flame heat release method

WARNING — The use of this part of ISO 15029 may involve hazardous materials, operations and equipment. This part of ISO 15029 does not purport to address all of the safety problems associated with its use. It is the responsibility of the user of this part of ISO 15029 to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

1 Scope

This part of ISO 15029 specifies a method by which the fire hazards of pressurized sprays of liquid fire-resistant fluids can be compared. Two sizes of propane flame are used to ignite and stabilize combustion of an air-atomized release of fluid, and measurements related to the rate of heat release, length of flame and density of smoke are taken to give quantitative information on the fire behaviour of the fluid. A scheme for classification of the fluids is given, but no minimum performance requirements are specified.

2 Normative references

The following referenced documents are indispensable for the application 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 3170:2004, *Petroleum liquids — Manual sampling*

ISO 3696:1987, *Water for analytical laboratory use — Specification and test methods*

ISO 5659-2:1994, *Plastics — Smoke generation — Part 2: Determination of optical density by a single-chamber test*

ISO 9162:1989, *Petroleum products — Fuels (class F) — Liquefied petroleum gases — Specifications*

IEC 60584-1:1995, *Thermocouples — Part 1: Reference tables*

3 Terms and definitions

For the purposes of this part of ISO 15029, the following terms and definitions apply.

3.1
stabilized flame
point at which the rate of energy release, flame length and other combustion properties, are steady as a function of time, so that sensible time-averaged values can be calculated

3.2
flame length
distance in millimetres from the vertical centre line of the gas burner to the furthest downstream point reached by the visible flame

3.3
flame length index
function of the flame length and propane flow rate

3.4
ignitability factor
corrected value, to the nearest integer, of a function of heat release at a specific propane flow rate

3.5
smoke density
smoke density as defined in ISO 5659, as a function of smoke opacity in the flue pipe before and after introduction of the test fluid

4 Principle

A pre-conditioned flux of the test fluid is delivered to a test chamber through a twin-fluid atomizer. Compressed air, supplied to the nozzle at a controlled rate, is used to produce an atomized spray, which is exposed to a defined flame of a gas burner present throughout the test. The gas flame acts to produce, by input of heat at a steady rate, a stabilized spray flame (3.1), so that combustion properties, such as the rate of energy release and flame length, are sufficiently steady over time to allow time-averaged values to be measured.

Temperatures are measured both at the entry to the combustion chamber and in the exhaust, with the burner operating first without, and then with, release of the test fluid. The flame length (3.2) and smoke opacity of the exhaust are also measured. Calculations of functions, such as flame length index (3.3), ignitability factor (3.4) and smoke density (3.5) are made from these measurements. Sampling of the exhaust can enable the production rate of other combustion products to be determined. A grading system for the performance of fire-resistant fluids is developed from these determinations and calculations.

5 Reagents and materials

5.1 Propane, high purity (minimum 98 %) grade, generally conforming to the requirements of ISO 9162.

5.2 Nitrogen, oxygen-free, commercial grade.

5.3 Compressed air.

5.4 Water, conforming to the requirements of grade 3 of ISO 3696.

5.5 Ethylene glycol, laboratory grade (mono, 98 % purity).

6 Apparatus

6.1 Test installation

6.1.1 General

Figure 1 gives a general layout of the test installation. The major components of the installation are described in 6.1.2 to 6.1.6.