

**Gaaside ja aurude maksimaalse
plahvatusrõhu ja maksimaalse rõhu
tõusukiiruse kindlaksmääramine. Osa 1:
Maksimaalse plahvatusrõhu
kindlaksmääramine**

Determination of the maximum explosion pressure
and the maximum rate of pressure rise of gases and
vapours - Part 1: Determination of the maximum
explosion pressure

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 13673-1:2003 sisaldab Euroopa standardi EN 13673-1:2003 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 16.05.2003 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 13673-1:2003 consists of the English text of the European standard EN 13673-1:2003.</p> <p>This document is endorsed on 16.05.2003 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p>Käsitlusala:</p> <p>The standard test method is designed to produce measurement of the explosion pressure and the maximum explosion pressure of a quiescent flammable gas/air/ inert mixture in an empty closed volume at ambient temperature and pressure. This European Standard does not consider mixtures that contain an increased content of oxygen</p>	<p>Scope:</p> <p>The standard test method is designed to produce measurement of the explosion pressure and the maximum explosion pressure of a quiescent flammable gas/air/ inert mixture in an empty closed volume at ambient temperature and pressure. This European Standard does not consider mixtures that contain an increased content of oxygen</p>
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ICS 13.230, 75.160.30

Võtmesõnad:

ICS 13.230; 75.160.30

English version

**Determination of the maximum explosion pressure and the
maximum rate of pressure rise of gases and vapours - Part 1:
Determination of the maximum explosion pressure**

Détermination de la pression maximale d'explosion et de la
vitesse maximale de montée en pression des gaz et
vapeurs - Partie 1: Détermination de la pression maximale
d'explosion

Verfahren zur Bestimmung des maximalen
Explosionsdruckes und des maximalen zeitlichen
Druckanstieges für Gase und Dämpfe - Teil 1:
Bestimmungsverfahren für den maximalen Explosionsdruck

This European Standard was approved by CEN on 2 January 2003.

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, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and United Kingdom.



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Foreword

This document (EN 13673-1:2003) has been prepared by Technical Committee CEN /TC 305, "Potentially explosive atmospheres - Explosion prevention and protection", the secretariat of which is held by DIN.

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 October 2003, and conflicting national standards shall be withdrawn at the latest by October 2003.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative annex ZA which is an integral part of this document.

Annexes B, C and D are informative.

Annex A is normative.

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, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom.

Introduction

This European Standard describes a test method for the determination of the explosion pressure and the maximum explosion pressure of a flammable gas/air/inert mixture at ambient temperature and pressure.

Explosion pressures and maximum explosion pressures are used in the design of explosion protection techniques, such as explosion resistant and explosion shock resistant construction. These are particularly influenced by :

- size and shape of the vessel;
- type and energy of the ignition source;
- temperature and pressure.

So it is important that they are measured at standardised conditions.

1 Scope

The standard test method is designed to produce measurement of the explosion pressure and the maximum explosion pressure of a quiescent flammable gas/air/ inert mixture in an empty closed volume at ambient temperature and pressure. In this European Standard the term “gas” includes vapours, but not mists.

This European Standard does not consider mixtures that contain an increased content of oxygen; or mixtures that will react spontaneously at ambient temperature and pressure. Detonation and decomposition phenomena are not considered in this European Standard.

The pressures measured by the procedures specified in this European Standard are not applicable to flameproof enclosures, that is enclosures intended to withstand an internal explosion and not to transmit it to an external explosive atmosphere, or any other closed volume where the internal geometry can result in pressure piling. Even in an enclosure of relatively simple geometry the disposition of the internal components can lead to explosion pressures significantly higher than those measured using this European Standard. Flameproof enclosures should be constructed and tested in accordance with the requirements contained in EN 50018 for electrical equipment and prEN 13463-3 for non-electrical equipment.

2 Terms and definitions

For the purposes of this European Standard, the following terms and definitions apply.

2.1

explosion pressure, P_{ex}

highest pressure occurring in a closed vessel during the explosion of a specific mixture of flammable gases with air or air and inert gases determined under specified test conditions

2.2

maximum explosion pressure, P_{max}

maximum value measured in the tests for explosion pressure when the content of the flammable gas in the mixture is varied

NOTE For the purpose of this European Standard, all pressures are expressed in bar absolute.

3 Test method

3.1 Principle

An explosive test mixture is ignited by a defined ignition source which is positioned in the centre of a test vessel. By means of a pressure measuring system, the highest pressure P_{ex} developed following the ignition of the test mixture is measured.

The maximum explosion pressure P_{max} is determined during measurements of the explosion pressure P_{ex} by varying stepwise the content of flammable gas in the mixture, until the maximum value of P_{ex} is found.

3.2 Apparatus

3.2.1 General

The test apparatus consists of :

- a test vessel;
- equipment for preparing the test mixture;
- an ignition system;
- a pressure measuring system;