

**Plahvatusohtlikud keskkonnad. Osa 20-1: Gaaside ja aurude liigitamiseks kasutatavad materjaliomadused. Katsetamismeetodid ja tunnusväärtused**

Explosive atmospheres - Part 20-1: Material characteristics for gas and vapour classification - Test methods and data

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 60079-20-1:2010 sisaldab Euroopa standardi EN 60079-20-1:2010 ingliskeelset teksti.

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**Explosive atmospheres -  
Part 20-1: Material characteristics for gas and vapour classification -  
Test methods and data  
(IEC 60079-20-1:2010)**

Atmosphères explosives -  
Partie 20-1: Caractéristiques  
des substances pour le classement  
des gaz et des vapeurs -  
Méthodes et données d'essai  
(CEI 60079-20-1:2010)

Explosionsfähige Atmosphären -  
Teil 20-1: Stoffliche Eigenschaften  
zur Klassifizierung von Gasen  
und Dämpfen -  
Prüfmethoden und Daten  
(IEC 60079-20-1:2010)

This European Standard was approved by CENELEC on 2010-02-01. CENELEC 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 Central Secretariat or to any CENELEC member.

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**CENELEC**

European Committee for Electrotechnical Standardization  
Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

**Central Secretariat: Avenue Marnix 17, B - 1000 Brussels**

## Foreword

The text of document 31/837/FDIS, future edition 1 of IEC 60079-20-1, prepared by IEC TC 31, Equipment for explosive atmospheres, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60079-20-1 on 2010-02-01.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN and CENELEC shall not be held responsible for identifying any or all such patent rights.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2010-11-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2013-02-01

This European Standard has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association and covers essential requirements of EC Directive 94/9/EC. See Annex ZZ.

Annexes ZA and ZZ have been added by CENELEC.

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## Endorsement notice

The text of the International Standard IEC 60079-20-1:2010 was approved by CENELEC as a European Standard without any modification.

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**Annex ZA**  
(normative)

**Normative references to international publications  
with their corresponding European publications**

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.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60079-11	-	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"	EN 60079-11	-
IEC 60079-14	-	Explosive atmospheres - Part 14: Electrical installations design, selection and erection	EN 60079-14	-

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## **Annex ZZ** (informative)

### **Coverage of Essential Requirements of EC Directives**

This European Standard has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association and within its scope the standard covers only the following essential requirements out of those given in Annex II of the EC Directive 94/9/EC:

- Essential Requirement 1.0.1
- Essential Requirement 1.2.1, 1.2.3, 1.2.9
- Essential Requirement 1.5.7

Compliance with this standard provides one means of conformity with the specified essential requirements of the Directive(s) concerned.

WARNING: Other requirements and other EC Directives may be applicable to the products falling within the scope of this standard.

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## EXPLOSIVE ATMOSPHERES –

### Part 20-1: Material characteristics for gas and vapour classification – Test methods and data

#### 1 Scope

This part of IEC 60079 provides guidance on classification of gases and vapours. It describes a test method intended for the measurement of the maximum experimental safe gaps (MESG) for gas- or vapour-air mixtures under normal conditions of temperature<sup>1</sup> and pressure so as to permit the selection of an appropriate group of equipment. The method does not take into account the possible effects of obstacles on the safe gaps<sup>2</sup>. This standard describes also a test method intended for use in the determination of the auto-ignition temperature of a chemically pure vapour or gas in air at atmospheric pressure.

The tabulated values of chemical and engineering properties of substances are provided to assist engineers in their selection of equipment to be used in hazardous areas. It is hoped to publish further data from time to time, as the results of tests made in several countries become available.

The scope of these data has been selected with particular reference to the use of equipment in hazardous areas, and notice has been taken of standard measurement methods.

NOTE 1 The data in this standard have been taken from a number of references which are given in the bibliography.

NOTE 2 Some variations in the data may appear when references are compared, but usually the discrepancy is sufficiently small to be of no importance in the selection of equipment.

#### 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.

IEC 60079-11, *Explosive atmospheres – Part 11: Equipment protection by intrinsic safety "i"*

IEC 60079-14, *Explosive atmospheres – Part 14: Electrical installations design, selection and erection*

#### 3 Terms and definitions

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

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1 An exception is made for substances with vapour pressures which are too low to permit mixtures of the required concentrations to be prepared at normal ambient temperatures. For these substances, a temperature 5 K above that needed to give the necessary vapour pressure or 50 K above the flash point is used.

2 The design of the test apparatus for safe gap determination, other than that used for selecting the appropriate group of enclosure for a particular gas, may need to be different to the one described in this standard. For example, the volume of the enclosure, flange width, gas concentrations and the distance between the flanges and any external wall or obstruction may have to be varied. As the design depends on the particular investigation which is to be undertaken, it is impracticable to recommend specific design requirements, but for most applications the general principles and precautions indicated in the clauses of this standard will still apply.