SLOVENSKI STANDARD
oSIST prEN 13237:2022

01-september-2022

Potencialno eksplozivne atmosfere - Izrazi in definicije za opremo in zaščitne sisteme, namenjene za uporabo v potencialno eksplozivnih atmosferah

Potentially explosive atmospheres - Terms and definitions for equipment and protective systems intended for use in potentially explosive atmospheres

Explosionsgefährdete Bereiche - Begriffe für Geräte und Schutzsysteme zur Verwendung in explosionsgefährdeten Bereichen

Atmosphères explosibles - Termes et définitions pour les appareils et systèmes de protection destinés à être utilisés en atmosphères explosibles

Ta slovenski standard je istoveten z: **prEN 13237**

ICS:

01.040.13	Okolje. Varovanje zdravja. Varnost (Slovarji)	Environment. Health protection. Safety (Vocabularies)
01.040.29	Elektrotehnika (Slovarji)	Electrical engineering (Vocabularies)
13.230	Varstvo pred eksplozijo	Explosion protection
29.260.20	Električni aparati za eksplozivna ozračja	Electrical apparatus for explosive atmospheres

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

DRAFT
prEN 13237

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ICS 01.040.13; 01.040.29; 13.230; 29.260.20

Will supersede EN 13237:2012

English Version

Potentially explosive atmospheres - Terms and definitions for equipment and protective systems intended for use in potentially explosive atmospheres

Atmosphères explosibles - Termes et définitions pour les appareils et systèmes de protection destinés à être utilisés en atmosphères explosibles

Explosionsgefährdete Bereiche - Begriffe für Geräte und Schutzsysteme zur Verwendung in explosionsgefährdeten Bereichen

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 305.

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 CEN-CENELEC 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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Ref. No. prEN 13237:2022 E

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European foreword

This document (prEN 13237:2022) 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 document is currently submitted to the CEN Enquiry.

This document will supersede EN 13237:2012.

The significant changes between this document and EN 13237:2012 are given in Annex B.

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

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

Introduction

This European Standard has been produced to assist designers, manufacturers and other interested parties to use harmonized terms and definitions (vocabulary) for equipment and protective systems intended for use in potentially explosive atmospheres. It describes the vocabulary to be used to give all standards in this area an overall uniformity of terminology. Throughout this European Standard, the only hazard considered is the explosion of an explosive atmosphere.

1 Scope

This document specifies terms and definitions (vocabulary) to be used in suitable standards dealing with equipment and protective systems intended for use in potentially explosive atmospheres.

NOTE Directive 2014/34/EU concerning equipment and protective systems intended for use in potentially explosive atmospheres can be applicable to the type of machine or equipment covered by this document. This document is not intended to provide means of complying with the essential health and safety requirements of Directive 2014/34/EU.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at https://www.electropedia.org/

— ISO Online browsing platform: available at https://www.iso.org/obp

3.1
air flow velocity
volume of air [m^3] which flows through a defined surface [m^2] per unit time [s]

[SOURCE: EN 17077:2018, 3.1]

3.2
ambient atmosphere
normal atmosphere surrounding the equipment and protective system

3.3
ambient temperature
temperature of the air or other medium where the equipment and protective system is to be used

3.4
atmospheric conditions
conditions with pressures ranging from 80 kPa to 110 kPa (0,8 bar to 1,1 bar); temperatures ranging from −20°C to +60°C

[SOURCE: EN ISO 16852:2016, 3.25]

3.5
combustible dust
finely divided solid particles, 500 µm or less in nominal size, which may form explosive mixtures with air at standard atmospheric pressure and temperatures

Note 1 to entry: This includes dust and grit as defined in ISO 4225:2020.

Note 2 to entry: The term "solid particles" is intended to address particles in the solid phase but does not preclude a hollow particle.

[SOURCE: EN ISO/IEC 80079-20-2:2016 [1], modified — reference date in Note 1 to entry has been updated]

3.5.1
conductive dust
combustible metal dusts and other combustible dusts with electrical resistivity equal to or less than 1 × 103 Ω m

Note 1 to entry: Metal dust is treated as conductive dust because it is assumed that surface oxidation cannot be depended upon to always ensure electrical resistivity greater than 1 × 103 Ω m

[SOURCE: EN ISO/IEC 80079-20-2:2016 [1]]

3.5.2
non-conductive dust
combustible dust with electrical resistivity greater than 1 × 103 Ω m

[SOURCE: EN ISO/IEC 80079-20-2:2016 [1]]

3.6
combustible flyings
solid particles, including fibres, where one dimension is greater than 500 µm in nominal size, which may form an explosive mixture with air at standard atmospheric pressure and temperature

Note 1 to entry: The ratio of length to width is 3 or more.

Note 2 to entry: Examples of flyings include carbon fibre, rayon, cotton (including cotton linters and cotton waste), sisal, jute, hemp, cocoa fibre, oakum and baled waste kapok.

[SOURCE: EN ISO/IEC 80079-20-2:2016 [1]]

3.7
constructional safety "c"
ignition protection where constructional measures are applied so as to protect against the possibility of ignition from hot surfaces, sparks and adiabatic compression generated by moving parts

[SOURCE: EN ISO 80079-37:2016, 3.1]

[1] As impacted by EN ISO/IEC 80079-20-2:2016/AC:2017.

3.8
control of ignition source "b"
ignition protection where mechanical or electrical devices are used in conjunction with nonelectrical equipment to manually or automatically reduce the likelihood of a potential ignition source from becoming an effective ignition source

Note 1 to entry: This might for example be a level sensor used to indicate loss of oil, a temperature sensor to indicate a hot bearing or a speed sensor to indicate over-speed.

[SOURCE: EN ISO 80079-37:2016, 3.3]

3.9
control measure
3.9.1
automatic control measure
action taken without manual intervention, to reduce the likelihood of a potential ignition source from becoming an effective ignition source

[SOURCE: EN ISO 80079-37:2016, 3.3.1]

3.9.2
manual control measure
action taken by a person as a result of a warning, indication, or alarm, to reduce the likelihood of a potential ignition source from becoming an effective ignition source

[SOURCE: EN ISO 80079-37:2016, 3.3.2]

3.10
ignition prevention devices/systems
arrangement that converts signals from one or more sensors into an action, or indication, to reduce the likelihood of a potential ignition source from becoming an effective ignition source

[SOURCE: EN ISO 80079-37:2016, 3.3.3]

3.11
safety devices
devices intended for use inside or outside explosive atmospheres but required for or contributing to the safe functioning of equipment and protective systems with respect to the risks of explosion

[SOURCE: EN ISO 80079-37:2016, 3.3.4]

3.12
continuous grade of release
release which is continuous or is expected to occur frequently or for long periods

[SOURCE: EN IEC 60079-10-1:2021, 3.4.2]

3.13
deflagration
explosion propagating at subsonic velocity

[SOURCE: ISO 8421-1:1987]

3.14
degree of protection
extent of protection provided by an enclosure against access to hazardous parts, against ingress of solid foreign objects and/or ingress of water and verified by standardised test methods

Note 1 to entry: The enclosure which provides the degree of protection IP is not necessarily identical with the types of protection as defined in EN IEC 60079-0.

[SOURCE: EN 60529:1991 [2], 3.3]

3.15
detonation
explosion propagating at supersonic velocity and characterised by a shock wave

[SOURCE: ISO 8421-1:1987]

3.16
dust
small solid particles in the atmosphere which settle out under their own weight, but which may remain suspended in air for some time

Note 1 to entry: Generally combustible dusts with a median value below 500 µm may form explosible dust/air-mixtures.

[SOURCE: EN 14034-1:2004+A1:2011, 3.1, modified — definition has been changed]

3.17
electrical equipment
items applied as a whole or in part for the utilisation of electrical energy

Note 1 to entry: These include, among others, items for the generation, transmission, distribution, storage, measurement, regulation, conversion and consumption of electrical energy and items for telecommunications.

[SOURCE: EN IEC 60079-0:2018 [3], 3.14]

3.18
electrostatic leakage resistance
electrical resistance measured between an object and earth

[SOURCE: EN 14983:2007, 3.1]

3.19
enclosure (of equipment or protective system)
all the walls including doors, covers, cable entries, rods, spindles and shafts which contribute to the type of protection and/or their degree of protection (IP)

[2] As impacted by EN 60529:1991/A1:2000, EN 60529:1991/A2:2013, EN 60529:1991/AC:2016-12 and EN 60529:1991/corrigendum May 1993.
[3] As impacted by EN IEC 60079-0:2018/AC:2020-02.

3.20
equipment grouping
classification system of equipment related to the explosive atmosphere for which they are intended to be used

Note 1 to entry: EN IEC 60079-0 identifies three equipment groups:

Group I – equipment for mines susceptible to fire damp;

Group II, which is sub-divided into groups IIA, IIB and IIC – equipment for all places with an explosive gas atmosphere other than mines susceptible to fire damp;

Group III, which is sub-divided into groups IIIA, IIIB and IIIC – equipment for all places with an explosive dust atmosphere other than mines susceptible to fire damp.

[SOURCE: EN ISO 80079-36:2016 [4]]

3.21
Ex Component
part of Ex Equipment or a module, marked with the symbol "U", which is not intended to be used alone and requires additional consideration when incorporated into Ex Equipment or systems for use in explosive atmospheres

[SOURCE: EN ISO 80079-36:2016 [4]]

3.22
Ex Equipment
equipment where measures have been applied to ensure that effective ignition sources are mitigated as required by the Equipment Protection Level (EPL)

Note 1 to entry: This includes the ignition hazard assessment and/or protective measures in accordance with this standard.

[SOURCE: EN ISO 80079-36:2016 [4], 3.11]

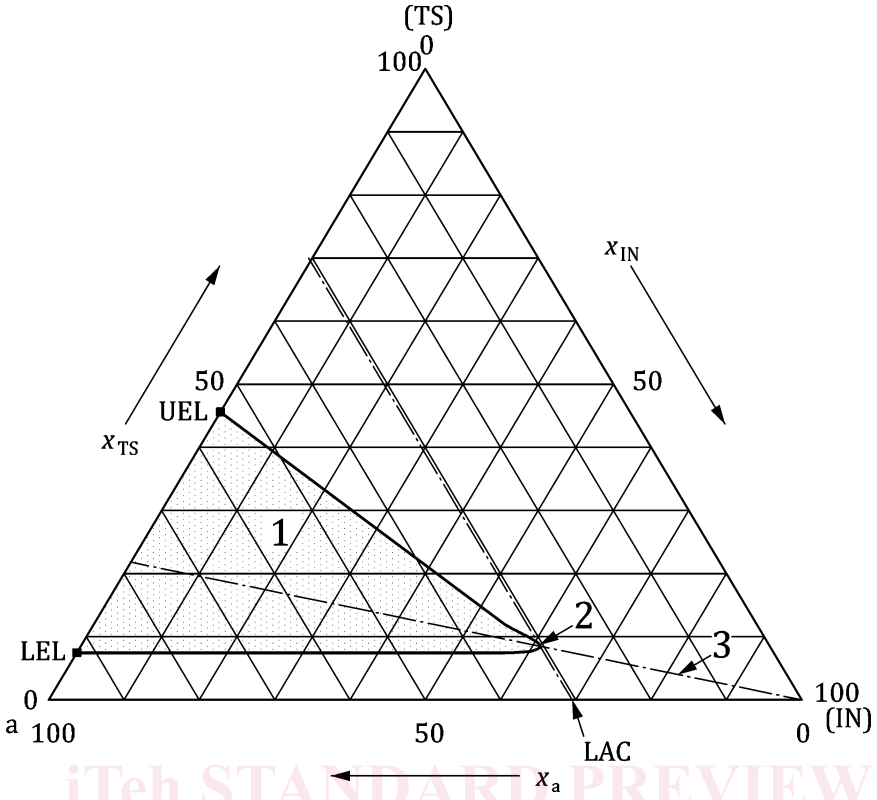
3.23
explosion
sudden increase of pressure and temperature, due to oxidation or other exothermic reaction

3.24
explosion region
area inside the boundary curve formed by the explosion limits of a flammable substance in various mixtures with air and inert gas

Note 1 to entry: In many cases the apex of the boundary curve corresponds to the limiting air concentration, LAC.

Note 2 to entry: In many cases this is also called explosion range.

[4] As impacted by EN ISO 80079-36:2016/AC:2019.



Key

1	explosion region
2	apex
3	stoichiometric line
x	molar fraction in %
IN	inert gas
TS	test substance
a	air

Figure 1 — Explosion region for a ternary system of test substance, air and inert gas

3.25
explosion diverter
passive device typically installed in a duct preventing flame jet ignition, pressure piling and reducing the probability of flame transmission into connected equipment

3.26
explosion isolation flap valve
valve containing a flap which is fixed to the housing on an axis perpendicular to the flow direction, kept open by the process flow and able to stop explosions from propagating through pipelines in the direction opposite to the normal process flow through the valve

[SOURCE: EN 16447:2014, 3.1, modified — Note 1 to entry has been deleted]