

INTERNATIONAL STANDARD

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**Explosive atmospheres –
Part 10-1: Classification of areas – Explosive gas atmospheres**

**Atmosphères explosives –
Partie 10-1: Classification des emplacements – Atmosphères explosives
gazeuses**



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

EXPLOSIVE ATMOSPHERES –**Part 10-1: Classification of areas –
Explosive gas atmospheres**

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International Standard IEC 60079-10-1 has been prepared by subcommittee 31J: Classification of hazardous areas and installation requirements, of IEC technical committee 31: Equipment for explosive atmospheres.

This third edition of IEC 60079-10-1 cancels and replaces the second edition, published in 2015, and constitutes a technical revision. The significant technical changes with respect to the previous edition are as follows:

Changes	Clause	Type		
		Minor and editorial changes	Extension	Major technical changes
Deleting commercial and industrial applications for fuel gas from the Scope exemptions	1			C1
Updating editorial details and notes to the definitions	3		X	
Deletion of the previous edition clause 3.7.3 definition for catastrophic failure (dealt with in clause 4.5)			X	
Introduction of new Subclause 4.4.2 Zone of negligible extent	4.4.2		X	
Introduction of new clause 5.3.2 Fuel gas installations	5.3.2		X	
Renumbering of headings	7	X		
Introduction of Figure 1 – Dilution volume	7		X	
Upgrading Table A.1 with UFL and its column 15 heading with the 'source of data'	A.1	X		
Updating the flow-chart in Figure B.1	B.6		X	
Updating equations for evaporation rate to align with the recent source modifications	B.7.3		X	
Updating the chart in Figure B.2 according to the updated equations for evaporation rate and the ventilation velocity of 0,25 m/s	B.7.3		X	
Restructuring Table C.1	C.3.4		X	
Removal of safety factor k and deleting it from the horizontal axis of the chart in Figure C.1	C.3.5			C2
Revising equations (C.2) and (C.3)	C.5.2			C3
Revising equations (C.4) and (C.5)	C.5.3			C4
Revising the chart in Figure C.6 by changing the label on the horizontal axis	C.5.3			C5
Revising equation (C.6) and deleting equation (C.7)	C.5.4			C6
Removal of safety factor k and deleting it from the horizontal axis of the charts in Figure D.1	D.3			C7
Imposing limitations to the use of the chart in Figure D.1	D.3		X	
Updating and corrections in Annex E	Annex E		X	
Upgrading Annex G on Flammable mists	Annex G		X	
Introducing new items in Table K.1	Annex K		X	
Introducing new items in the Bibliography	Bibliography		X	
NOTE The technical changes referred to include the significance of technical changes in the revised IEC Standard, but they do not form an exhaustive list of all modifications from the previous version.				

Explanations:

A) Definitions

Minor and editorial changes

clarification
decrease of technical requirements
minor technical change
editorial corrections

These are changes which modify requirements in an editorial or a minor technical way. They include changes of the wording to clarify technical requirements without any technical change.

Extension

addition of technical options

These are changes which add new or modify existing technical requirements, in a way that new options are given, but without increasing requirements.

Major technical changes

addition of technical requirements
increase of technical requirements

B) Information about the background of changes

- C1 The previous edition item e) was: “commercial and industrial applications where only low pressure fuel gas is used for appliances e.g. for cooking, water heating and similar uses, where the installation is compliant with relevant gas codes”. Industrial applications of any kind should not be exempted from the scope of this standard. See also new clause 5.3.2.
- C2 The factor *k* was initially intended to provide for additional safety for uncertainties in determining LFL for flammable substances, particularly gas mixtures. However, this was considered as unnecessary and confusing considering the derivation of the chart.
- C3 The equations are updated to align with BS 5925
- C4 The equations are updated to align with BS 5925
- C5 The chart is revised to match the new equation (C.4)
- C6 The equation is updated to align with BS 5925
- C7 See the explanation under C2

These are changes to technical requirements (addition, increase of the level or removal).

NOTE These changes represent current technological knowledge. However, these changes should not normally have an influence on equipment already placed on the market.

The text of this standard is based on the following documents:

FDIS	Report on voting
31J/307/FDIS	31J/310/RVD

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts of the IEC 60079 series, under the general title *Explosive atmospheres*, can be found on the IEC website.

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- replaced by a revised edition, or
- amended.

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