Fire hazard testing - Part 7-2: Toxicity of fire effluent - Summary and relevance of test methods

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EUROPEAN STANDARD

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(IEC 60695-7-2:2011)

Essais relatifs aux risques du feu - Partie 7-2: Toxicité des effluents du feu - Résumé et pertinence des méthodes d'essai (CEI 60695-7-2:2011)

Prüfungen zur Beurteilung der Brandgefahr - Teil 7-2: Toxizität von Rauch und/oder Brandgasen - Auswertung und Sachdienlichkeit von Prüfverfahren (IEC 60695-7-2:2011)

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European Committee for Electrotechnical Standardization
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Foreword

The text of document 89/1059/FDIS, future edition 1 of IEC 60695-7-2, prepared by IEC/TC 89 "Fire hazard testing" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60695-7-2:2011.

The following dates are fixed:

• latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2012-07-04
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2014-10-04

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Endorsement notice

The text of the International Standard IEC 60695-7-2:2011 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following note has to be added for the standard indicated:

ISO 5659-2 NOTE Harmonized as EN ISO 5659-2.

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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.

Publication	Year	Title	EN/HD	Year
IEC 60695-7-1	2010	Fire hazard testing - Part 7-1: Toxicity of fire effluent - General guidance	EN 60695-7-1	2010
IEC/TS 60695-7-3	-	Fire hazard testing - Part 7-3: Toxicity of fire effluent - Use and interpretation of test results	-	-
IEC Guide 104	-	The preparation of safety publications and the use of basic safety publications and group safety publications	-	-
ISO/IEC Guide 51	-	Safety aspects - Guidelines for their inclusion in standards	-	-
ISO 13344	-	Estimation of the lethal toxic potency of fire effluents	-	-
ISO 13571	2007	Life-threatening components of fire - Guidelines for the estimation of time available for escape using fire data	-	-
ISO 13943	-	Fire safety - Vocabulary	-	-
ISO 16312-1	2010	Guidance for assessing the validity of physical fire models for obtaining fire effluent toxicity data for fire hazard and risk assessment - Part 1: Criteria	-	-
ISO/TR 16312-2	2007	Guidance for assessing the validity of physical fire models for obtaining fire effluent toxicity data for fire hazard and risk assessment - Part 2: Evaluation of individual physical fire models	-	-
ISO 19701	-	Methods for sampling and analysis of fire effluents	-	-
ISO 19702	-	Toxicity testing of fire effluents - Guidance for analysis of gases and vapours in fire effluents using FTIR gas analysis	-	-
ISO 19703	2010	Generation and analysis of toxic gases in fire -- Calculation of species yields, equivalence ratios and combustion efficiency in experimental fires	--	-
ISO 19706	-	Guidelines for assessing the fire threat to people	-	-

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INTRODUCTION

The IEC 60695-7 series provides guidance to IEC product committees on the adoption and implementation of the recommendations of ISO/TC 92, for the minimization of toxic hazard from fires involving electrotechnical products.

Electrotechnical products, primarily as the objects of a fire, may contribute to the fire hazard due to release of toxic effluent, which may be a significant contributing factor to the overall fire hazard.

IEC product committees incorporating requirements for the assessment of toxic hazard from fire in product standards should note that toxic potency and other measurements of toxicity which are described in this international standard should not be used directly in product specifications. Data from toxic potency test methods should only be used as part of a toxic hazard assessment, in conjunction with other product-based reaction to fire data such as mass loss rate.

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FIRE HAZARD TESTING –

Part 7-2: Toxicity of fire effluent – Summary and relevance of test methods

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1 Scope

This part of IEC 60695 gives a brief summary of the test methods that are in common use in the assessment of acute toxic potency, and other toxicity tests. It includes special observations on their relevance to real fire scenarios and gives recommendations on their use.

It advises which tests provide toxic potency data that are relevant to real fire scenarios, and which are suitable for use in fire hazard assessment and fire safety engineering.

This basic safety publication is intended for use by technical committees in the preparation of standards in accordance with the principles laid down in IEC Guide 104 and ISO/IEC Guide 51.

One of the responsibilities of a technical committee is, wherever applicable, to make use of basic safety publications in the preparation of its publications. The requirements, test methods or test conditions of this basic safety publication will not apply unless specifically referred to or included in the relevant publications.

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 60695-7-1:2010, *Fire hazard testing – Part 7-1: Toxicity of fire effluent – General guidance*

IEC/TS 60695-7-3, *Fire hazard testing – Part 7-3: Toxicity of fire effluent – Use and interpretation of test results*

IEC Guide 104, *The preparation of safety publications and the use of basic safety publications and group safety publications*

ISO/IEC 13943, *Fire safety – Vocabulary*

ISO/IEC Guide 51, *Safety aspects – Guidelines for their inclusion in standards*

ISO 13344, *Estimation of the lethal toxic potency of fire effluents*

ISO 13571:2007, *Life-threatening components of fire – Guidelines for the estimation of time available for escape using fire data*

ISO 16312-1:2010, *Guidance for assessing the validity of physical fire models for obtaining fire effluent toxicity data for fire hazard and risk assessment – Part 1: Criteria*

ISO/TR 16312-2:2007, *Guidance for assessing the validity of physical fire models for obtaining fire effluent toxicity data for fire hazard and risk assessment – Part 2: Evaluation of individual physical fire models*

ISO 19701, *Methods for sampling and analysis of fire effluents*

ISO 19702, *Toxicity testing of fire effluents – Guidance for analysis of gases and vapours in fire effluents using FTIR gas analysis*

ISO 19703:2010, *Generation and analysis of toxic gases in fire – Calculation of species yields, equivalence ratios and combustion efficiency in experimental fires*

ISO 19706, *Guidelines for assessing the fire threat to people*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 13943:2008, some of which are reproduced below for the user's convenience, as well as the following, apply.

3.1
acute toxicity
toxicity that causes rapidly occurring toxic effects

cf. **toxic potency** (3.45).

[ISO/IEC 13943:2008, definition 4.5]

3.2
burn, intransitive verb
undergo combustion

[ISO/IEC 13943:2008, definition 4.28]

3.3
burn, transitive verb
cause combustion

[ISO/IEC 13943:2008, definition 4.29]

3.4
combustible, adjective
capable of being ignited and burned

[ISO/IEC 13943:2008, definition 4.43]

3.5
combustible, noun
item capable of combustion

[ISO/IEC 13943:2008, definition 4.44]

3.6
combustion
exothermic reaction of a substance with an oxidizing agent

NOTE Combustion generally emits fire effluent accompanied by flames and/or glowing.

[ISO/IEC 13943:2008, definition 4.46]

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