ICS 13.020.01, 43.040.10 SLOVENSKÁ TECHNICKÁ NORMA Január 2022

STN	**Stanovenie obsahu určených látok v elektrotechnických výrobkoch Časť 9: Hexabrómcyklododekán v polyméroch stanovený plynovou chromatografiou s hmotnostnou spektrometriou (GC-MS)**	**STN EN IEC 62321-9** 34 6705

Determination of certain substances in electrotechnical products - Part 9: Hexabromocyclododecane in polymers by chromatography-mass spectrometry (GC-MS)

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 12/21

Obsahuje: EN IEC 62321-9:2021, IEC 62321-9:2021

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EUROPÄISCHE NORM

EN IEC 62321-9

October 2021

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English Version

Determination of certain substances in electrotechnical products - Part 9: Hexabromocyclododecane in polymers by chromatography-mass spectrometry (GC-MS) (IEC 62321-9:2021)

Détermination de certaines substances dans les produits électrotechniques - Partie 9: Hexabromocyclododécane dans les polymères par chromatographie en phase gazeuse-spectrométrie de masse (GC-MS) (IEC 62321-9:2021)

Verfahren zur Bestimmung von bestimmten Substanzen in Produkten der Elektrotechnik - Teil 9: Hexabromcyclododecan in Polymeren durch Chromatographie-Massenspektrometrie (GC-MS) (IEC 62321-9:2021)

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

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

European foreword

The text of document 111/620/FDIS, future edition 1 of IEC 62321-9, prepared by IEC/TC 111 “Environmental standardization for electrical and electronic products and systems” was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 62321-9:2021.

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) 2022–07–04
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2024–10–04

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Endorsement notice

The text of the International Standard IEC 62321-9:2021 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 62321-2 NOTE Harmonized as EN 62321-2

IEC 62321-3-1 NOTE Harmonized as EN 62321-3-1

ISO 3696 NOTE Harmonized as EN ISO 3696

ISO 5667-1 NOTE Harmonized as EN ISO 5667-1

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

Publication	Year	Title	EN/HD	Year
IEC 62321-1	2013	Determination of certain substances in electrotechnical products - Part 1: Introduction and overview	EN 62321-1	2013

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DETERMINATION OF CERTAIN SUBSTANCES IN ELECTROTECHNICAL PRODUCTS –

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FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as “IEC Publication(s)”). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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IEC 62321-9 has been prepared by IEC technical committee 111: Environmental standardization for electrical and electronic products and systems. It is an International Standard.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
111/620/FDIS	111/631/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications.

A list of all parts in the IEC 62321 series, published under the general title *Determination of certain substances in electrotechnical products*, can be found on the IEC website

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

INTRODUCTION

The widespread use of electrotechnical products has drawn increased attention to their impact on the environment. In many countries this has resulted in the adoption of regulations affecting wastes, substances and energy use of electrotechnical products.

The use of certain substances (e.g. lead (Pb), cadmium (Cd) and polybrominated diphenyl ethers (PBDEs) in electrotechnical products is a source of concern in current and proposed regional legislation.

The purpose of this document is therefore to provide test methods that will allow the electrotechnical industry to determine the levels of certain substances of concern in electrotechnical products on a consistent global basis.

WARNING – Persons using this document should be familiar with normal laboratory practice. This document does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user to establish appropriate safety and health practices and to ensure compliance with any national regulatory conditions.

DETERMINATION OF CERTAIN SUBSTANCES IN ELECTROTECHNICAL PRODUCTS –

Part 9: Hexabromocyclododecane in polymers by gas chromatography-mass spectrometry (GC-MS)

1 Scope

This part of IEC 62321 specifies two techniques for the determination of hexabromocyclododecane (HBCDD) in polymers of electrotechnical products.

The gas chromatography-mass spectrometry (GC-MS) test method is described in the normative part of this document. The GC-MS method is suitable for the determination of hexabromocyclododecane (HBCDD).

A method using high-pressure liquid chromatography-mass spectrometry (HPLC-MS) is given in informative Annex A.

These test methods have been evaluated for use with EPS (expanded polystyrene foam), XPS (extruded polystyrene foam) and ABS (acrylonitrile butadiene styrene) within the concentration ranges as specified in Table 1. The use of this method for other types of materials or concentration ranges outside those specified below has not been evaluated.

Table 1 – Tested concentration ranges for HBCDD by GC-MS in various materials

Substance or element	HBCDD		
Parameter	Unit of measurement mg/kg	Medium or material tested	
		EPS/XPS	ABS
Concentration range tested		6 080 to 11 940	1 000 to 10 000

This document has the status of a horizontal standard in accordance with IEC Guide 108.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 62321-1:2013, *Determination of certain substances in electrotechnical products – Part 1: Introduction and overview*