BSI Standards Publication

Determination of certain substances in electrotechnical products

Part 3-3: Screening — Polybrominated biphenyls, polybrominated diphenyl ethers and phthalates in polymers by gas chromatography-mass spectrometry using a pyrolyser/thermal desorption accessory (Py/TD-GC-MS)

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This British Standard is the UK implementation of EN IEC 62321-3-3:2021. It is identical to IEC 62321-3-3:2021. Together with BS EN 62321-1:2013, BS EN 62321-2:2014, BS EN 62321-3-1:2014, BS EN 62321-3-2:2014, BS EN 62321-4:2014, BS EN 62321-5:2014, BS EN 62321-6:2015, BS EN 62321-7-1:2015, BS EN 62321-7-2:2017 and BS EN 62321-8:2017 it supersedes BS EN 62321:2009, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee GEL/111, Electrotechnical environment committee.

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Published by BSI Standards Limited 2021

ISBN 978 0 580 97321 5

ICS 13.020.01; 43.040.10

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This British Standard was published under the authority of the Standards Policy and Strategy Committee on 30 November 2021.

Amendments/corrigenda issued since publication

Date	Text affected

EUROPEAN STANDARD **EN IEC 62321-3-3**

EUROPÄISCHE NORM

October 2021

ICS 13.020.01; 43.040.10

English Version

Determination of certain substances in electrotechnical products - Part 3-3: Screening - Polybrominated biphenyls, polybrominated diphenyl ethers and phthalates in polymers by gas chromatography-mass spectrometry using a pyrolyser/thermal desorption accessory (Py/TD-GC-MS) (IEC 62321-3-3:2021)

Détermination de certaines substances dans les produits électrotechniques - Partie 3-3: Détection - Diphényles polybromés, diphényléthers polybromés et phtalates dans les polymères par chromatographie en phase gazeuse-spectrométrie de masse par pyrolyse/thermodésorption (Py/TD-GC-MS) (IEC 62321-3-3:2021)

Verfahren zur Bestimmung von bestimmten Substanzen in Produkten der Elektrotechnik - Teil 3-3: Screening der polybromierten Biphenyle, polybromierten Diphenylether und Phthalate in Polymeren durch Pyrolyse (Py-GC-MS) oder Thermodesorption-Gaschromatographie-Massenspektrometrie (TD-GC-MS) (IEC 62321-3-3:2021)

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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 111/626/FDIS, future edition 1 of IEC 62321-3-3, 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 62321-3-3:2021.

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) 2022–07–19
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In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 62321-1:2013	NOTE Harmonized as EN 62321-1:2013 (not modified)
IEC 62321-2:2013	NOTE Harmonized as EN 62321-2:2014 (not modified)
IEC 62321-8:2017	NOTE Harmonized as EN 62321-8:2017 (not modified)
IEC 62321-3-1:2013	NOTE Harmonized as EN 62321-3-1:2014 (not modified)
IEC 62321-3-2:2020	NOTE Harmonized as EN IEC 62321-3-2:2020[1] (not modified)
IEC 62321:2008[2]	NOTE Harmonized as EN 62321:2009[3] (not modified)
ISO 3696	NOTE Harmonized as EN ISO 3696
ISO/IEC 17025	NOTE Harmonized as EN ISO/IEC 17025

[1] To be published. Stage at time of publication: prEN IEC 62321-3-2:2020.

[2] Withdrawn.

[3] Withdrawn.

CONTENTS

FOREWORD 4
INTRODUCTION 6
1 Scope 7
2 Normative references 7
3 Terms, definitions and abbreviated terms 7
3.1 Terms and definitions 7
3.2 Abbreviated terms 9
4 Principle 10
4.1 Overview 10
4.2 Principle of test 11
5 Reagents and materials 11
6 Apparatus 12
7 Sampling 12
8 Procedure 12
8.1 General instructions for the analysis 12
8.2 Sample preparation 13
8.2.1 General 13
8.2.2 Polymer sample 13
8.2.3 Stock solution or polymer reference material 13
8.3 Instrumental parameters 13
8.4 Calibration 15
8.4.1 General 15
8.4.2 Determination of RRFs 15
9 Calculation of PBBs, PBDEs and phthalates concentration 16
9.1 General 16
9.2 Determination of RF of DEHP 17
9.3 Calculation 17
9.3.1 Calculation of RF 17
9.3.2 Calculation of concentration 17
10 Precision 18
10.1 Screening judgement 18
10.2 Repeatability and reproducibility 20
11 Quality assurance and control 23
11.1 General 23
11.2 Quality control 23
11.2.1 Sensitivity test 23
11.2.2 Blank test 23
11.2.3 System stability test 24
11.2.4 Degradation test 24
11.2.5 RRF test 24
11.3 Method detection limit (MDL) and limit of quantification (LOQ) 25
12 Test report 25
Annex A (informative) Flow chart of screening and verification test method 26
Annex B (informative) Principle of Py/TD-GC-MS instruments 28
Annex C (informative) Other test methods 29

Annex D (informative) Commercially available reference solutions and materials 30
D.1 Reference solution 30
D.2 Polymer reference materials 31
Annex E (informative) Sampling procedure 33
E.1 Sample preparation using cutting tools 33
E.2 Sample preparation using cryogenic grinding mill 33
E.3 Accurate weighing of sample 33
E.4 Method of sample injection 33
Annex F (informative) Verification of the EGA thermal desorption zone 34
Annex G (informative) Example of chromatograms 36
Annex H (informative) Examples of RRFs 37
Annex I (informative) Sample analysis sequence 38
Annex J (informative) Results of international inter-laboratory study 3-3 39
Bibliography 42

Figure A.1 – Flow chart for screening step and verification test step for PBDEs, PBBs and phthalates 26
Figure B.1 – Example of Py/TD-GC-MS instrument 28
Figure D.1 – Sample preparation of reference materials 32
Figure F.1 – Example of EGA thermogram of a PVC sample containing phthalates 34
Figure F.2 – Example of EGA thermogram of a polystyrene sample containing PBDEs 35
Figure G.1 – Total ion current chromatogram of 0,1 µg of PBBs, PBDEs and phthalates mixture by Py/TD-GC-MS 36

Table 1 – Measurement conditions of Py/TD-GC-MS 14
Table 2 – IIS3-3 Screening and threshold judgement 18
Table 3 – IIS3-3 Repeatability and reproducibility (phthalate) 20
Table 4 – IIS3-3 Repeatability and reproducibility (PBB) 21
Table 5 – IIS3-3 Repeatability and reproducibility (PBDE) 22
Table A.1 – Screening methods for phthalate esters, PBBs and PBDEs in the IEC 62321 series 27
Table C.1 – Other test methods 29
Table D.1 – Example list of commercially available reference solutions of PBBs and PBDEs 30
Table D.2 – Example list of commercially available reference solutions of phthalates 31
Table D.3 – Example list of commercially available reference materials of PBBs, PBDEs and PS considered suitable for Py/TD-GC-MS 31
Table D.4 – Example list of commercially available reference materials of phthalates considered suitable for Py/TD-GC-MS 32
Table E.1 – Example of variation of weighting samples 33
Table H.1 – RRFs of analytes 37
Table I.1 – Sample analysis sequence for Py/TD-GC-MS analysis 38
Table J.1 – Statistical data for phthalates 39
Table J.2 – Statistical data for polybrominated biphenyls 40
Table J.3 – Statistical data for polybrominated diphenyl ethers 41

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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DETERMINATION OF CERTAIN SUBSTANCES IN ELECTROTECHNICAL PRODUCTS –

Part 3-3: Screening – Polybrominated biphenyls, polybrominated diphenyl ethers and phthalates in polymers by gas chromatography-mass spectrometry using a pyrolyser/thermal desorption accessory (Py/TD-GC-MS)

FOREWORD

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IEC 62321-3-3 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
111/626/FDIS	111/632/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 all over the world, this has resulted in the adaptation of regulations affecting wastes, substances and energy use of electrotechnical products.

The use of polybrominated biphenyls (PBBs), polybrominated diphenyl ethers (PBDEs) and certain phthalates in electrotechnical products is of concern in many regions of the world.

The purpose of this document is therefore to provide a test method that will allow the electrotechnical industry to determine the levels of polybrominated biphenyls (PBBs), polybrominated diphenyl ethers (PBDEs), di-isobutyl phthalate (DIBP), di-n-butyl phthalate (DBP), benzylbutyl phthalate (BBP), di-(2-ethylhexyl) phthalate (DEHP), di-n-octyl phthalate (DNOP), di-isononyl phthalate (DINP) and di-isodecyl phthalate (DIDP) 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 3-3: Screening – Polybrominated biphenyls, polybrominated diphenyl ethers and phthalates in polymers by gas chromatography-mass spectrometry using a pyrolyser/thermal desorption accessory (Py/TD-GC-MS)

1 Scope

This part of IEC 62321 specifies the screening analysis of polybrominated biphenyls (PBBs), polybrominated diphenyl ethers (PBDEs), di-isobutyl phthalate (DIBP), di-n-butyl phthalate (DBP), benzylbutyl phthalate (BBP), di-(2-ethylhexyl) phthalate (DEHP), di-n-octyl phthalate (DNOP), di-isononyl phthalate (DINP), and di-isodecyl phthalate (DIDP) in polymers of electrotechnical products using the analytical technique of gas chromatography-mass spectrometry using a pyrolyser/thermal desorption accessory (Py/TD-GC-MS).

This test method has been evaluated through the analysis of PP (polypropylene), PS (polystyrene), and PVC (polyvinyl chloride) materials containing deca-BDE between 100 mg/kg and 1 000 mg/kg and individual phthalates between 100 mg/kg to 4 000 mg/kg as depicted in Annex J. Use of the methods described in this document for other polymer types, PBBs (mono-deca), PBDEs (mono-deca) and phthalates or concentration ranges other than those specified above has not been specifically evaluated.

This document has the status of a horizontal standard in accordance with IEC Guide 108 [1][1].

2 Normative references

There are no normative references in this document.

3 Terms, definitions and abbreviated terms

3.1 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 http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

[1] Numbers in square brackets refer to the bibliography.