

SLOVENSKI STANDARD
oSIST prEN IEC 62321-10:2025
01-oktober-2025

Določevanje posameznih snovi v elektrotehničnih izdelkih - 10. del.: Policiklični aromatski ogljikovodiki (PAH) v polimerih in elektroniki s plinsko kromatografijo in masno spektrometrijo (GC-MS)

Determination of certain substances in electrotechnical products - Part 10: Polycyclic aromatic hydrocarbons (PAHs) in polymers and electronics by gas chromatography-mass spectrometry (GC-MS)

Verfahren zur Bestimmung von bestimmten Substanzen in Produkten der Elektrotechnik - Teil 10: Polyzyklische aromatische Kohlenwasserstoffe (PAK) in Polymeren und Elektronik mittels Gaschromatographie-Massenspektrometrie (GC-MS)

Détermination de certaines substances dans les produits électrotechniques - Partie 10: Hydrocarbures aromatiques polycycliques (HAP) dans les polymères et les produits électroniques par chromatographie en phase gazeuse-spectrométrie de masse (GC-MS)

<https://standards.iteh.ai/catalog/standards/sist/80c471b8-914d-4911-b05c-cc1cf7a80867/osist-pren-iec-62321-10-2025>

Ta slovenski standard je istoveten z: prEN IEC 62321-10:2025

ICS:

29.020	Elektrotehnika na splošno	Electrical engineering in general
31.020	Elektronske komponente na splošno	Electronic components in general
71.040.50	Fizikalnokemijske analitske metode	Physicochemical methods of analysis

oSIST prEN IEC 62321-10:2025

en



111/838/CDV

COMMITTEE DRAFT FOR VOTE (CDV)

PROJECT NUMBER:

IEC 62321-10 ED2

DATE OF CIRCULATION:

2025-09-05

CLOSING DATE FOR VOTING:

2025-11-28

SUPERSEDES DOCUMENTS:

111/773/CD, 111/808/CC

IEC TC 111 : ENVIRONMENTAL STANDARDIZATION FOR ELECTRICAL AND ELECTRONIC PRODUCTS AND SYSTEMS

SECRETARIAT:

Italy

SECRETARY:

Mr Alfonso Sturchio

OF INTEREST TO THE FOLLOWING COMMITTEES:

TC 2, TC 9, TC 18, TC 20, TC 21, TC 23, TC 34, SC 34D, TC 59, TC 62, SC 65B, TC 80, TC 82, TC 88, TC 91, TC 100, TC 110, TC 121, TC 124, TC 125

HORIZONTAL FUNCTION(S):

TC 111 Horizontal Basic Environment - Test methods

ASPECTS CONCERNED:

Environment

SUBMITTED FOR CENELEC PARALLEL VOTING

NOT SUBMITTED FOR CENELEC PARALLEL VOTING

Attention IEC-CENELEC parallel voting

The attention of IEC National Committees, members of CENELEC, is drawn to the fact that this Committee Draft for Vote (CDV) is submitted for parallel voting.

The CENELEC members are invited to vote through the CENELEC online voting system.

[eSiST prEN IEC 62321-10:2025](https://standards.iteh.ai/)

<https://standards.iteh.ai/catalog/standards/sist/80c471b8-9f4d-4911-b05c-ccfcf7a80867/osist-pren-iec-62321-10-2025>

This document is still under study and subject to change. It should not be used for reference purposes.

Recipients of this document are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

Recipients of this document are invited to submit, with their comments, notification of any relevant "In Some Countries" clauses to be included should this proposal proceed. Recipients are reminded that the CDV stage is the final stage for submitting ISC clauses. (SEE [AC/22/2007](#) OR [NEW GUIDANCE DOC](#)).

TITLE:

Determination of certain substances in electrotechnical products - Part 10: Polycyclic aromatic hydrocarbons (PAHs) in polymers and electronics by gas chromatography-mass spectrometry (GC-MS)

PROPOSED STABILITY DATE: 2029

NOTE FROM TC/SC OFFICERS:

Copyright © 2025 International Electrotechnical Commission, IEC. All rights reserved. It is permitted to download this electronic file, to make a copy and to print out the content for the sole purpose of preparing National Committee positions. You may not copy or "mirror" the file or printed version of the document, or any part of it, for any other purpose without permission in writing from IEC.

CONTENTS

1	FOREWORD	4
3	INTRODUCTION	6
4	1 Scope	7
5	2 Normative references	7
6	3 Terms, definitions and abbreviated terms	7
7	3.1 Terms and definitions	7
8	3.2 Abbreviated terms	8
9	4 Principle	8
10	5 Reagents and materials	8
11	6 Apparatus	8
12	7 Sampling	9
13	8 Procedure	10
14	8.1 General instructions for the analysis	10
15	8.2 Sample preparation	10
16	8.2.1 Ultrasonic extraction	10
17	8.2.2 Soxhlet extraction	10
18	8.2.3 Alternative extraction procedures for soluble polymers	10
19	8.3 Instrumental parameters	11
20	8.4 Calibrants	12
21	8.4.1 General	12
22	8.4.2 Stock solution	13
23	8.4.3 Preparation of calibration standard	13
24	8.4.4 Internal standard	14
25	8.5 Calibration	14
26	8.5.1 General	14
27	8.5.2 Calibration standard solutions of PAHs	14
28	9 Calculation of PAH concentration	15
29	9.1 General	15
30	9.2 Calculation	15
31	10 Precision: repeatability and reproducibility	15
32	11 Quality assurance and control	18
33	11.1 Performance	18
34	11.2 Limit of detection (LOD) or method detection limit (MDL) and limit of quantification (LOQ)	18
35	12 Test report	19
36	Annex A (informative) Additional GC-MS conditions	20
37	A.1 Instrumental parameters for GC-MS	20
38	A.2 Examples of suitable column and its separation results for PAHs	21
39	Annex B (informative) Labware cleaning procedure for PAH testing	25
40	B.1 With the use of furnace (non-volumetric glassware only)	25
41	B.2 Without the use of furnace (glassware and plastic-ware)	25
42	B.3 Estimation of cleanliness of the inner areas of volumetric glassware	26

IEC CDV 62321-10 ED2 © IEC 2025

44	Annex C (informative) Results of international interlaboratory study of PAHs (Pre-IIS10-PAHs)	27
45	
46	Bibliography	30
47		
48	Figure A.1 – Examples of total ion chromatograms of PAHs for each suitable PAH column,	
49	naphthalene to benzo[ghi]perylene	23
50		
51	Table 1 – List of reference masses for quantification of PAHs	11
52	Table 2 – Example list of commercially available calibration chemicals considered suitable for	
53	this analysis	12
54	Table 3 – Example list of calibration chemicals (standard solution and internal standards) for	
55	this analysis	13
56	Table 4 – Pre-IIS10-PAHs repeatability and reproducibility	15
57	Table A.1 – Instrument parameters for GC-MS	20
58	Table A.2 – Examples of suitable columns and its separation conditions/parameters for PAHs	
59	21	
60	Table A.3 – Information of each PAH substance and numbers of aromatic rings	23
61	Table C.1 – Statistical data for GC-MS (Pre-IIS10-PAHs).....	27
62	Table C.2 – Samples information of Pre-IIS10-PAHs	28
63		

iTeh Standards
(<https://standards.iteh.ai>)
Document Preview

[oSIST prEN IEC 62321-10:2025](#)

<https://standards.iteh.ai/catalog/standards/sist/80c471b8-9f4d-4911-b05c-ccfcf7a80867/osist-pren-iec-62321-10-2025>