# SLOVENSKI STANDARD
# SIST EN 62321-4:2014/A1:2018

**01-januar-2018**

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**Določevanje posameznih snovi v elektrotehničnih izdelkih - 4. del: Določevanje živega srebra v polimerih, kovinah in elektroniki s CV-AAS, CV-AFS, ICP-OES in ICP-MS - Dopolnilo A1**

Determination of certain substances in electrotechnical products - Part 4: Mercury in polymers, metals and electronics by CV-AAS, CV-AFS, ICP-OES and ICP-MS

Verfahren zur Bestimmung von bestimmten Substanzen in Produkten der Elektrotechnik - Teil 4: Quecksilber in Polymeren, Metallen und Elektronik mit CV-AAS, CV-AFS, ICP-OES und ICP-MS



Détermination de certaines substances dans les produits électrotechniques - Partie 4: Mercure dans les polymères, métaux et produits électroniques par CV-AAS, CV-AFS, ICP-OES et ICP-MS

**Ta slovenski standard je istoveten z:** **EN 62321-4:2014/A1:2017**

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**ICS:**

| | | |
|---|---|---|
| 29.020 | Elektrotehnika na splošno | Electrical engineering in general |
| 31.020 | Elektronske komponente na splošno | Electronic components in general |

**SIST EN 62321-4:2014/A1:2018** **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

**EN 62321-4:2014/A1**

November 2017

ICS 13.020; 43.040.10

English Version

# Determination of certain substances in electrotechnical products - Part 4: Mercury in polymers, metals and electronics by CV-AAS, CV-AFS, ICP-OES and ICP-MS (IEC 62321-4:2013/A1:2017)

Détermination de certaines substances dans les produits électrotechniques - Partie 4: Mercure dans les polymères, métaux et produits électroniques par CV-AAS, CV-AFS, ICP-OES et ICP-MS (IEC 62321-4:2013/A1:2017)

Verfahren zur Bestimmung von bestimmten Substanzen in Produkten der Elektrotechnik - Teil 4: Quecksilber in Polymeren, Metallen und Elektronik mit CV-AAS, CV-AFS, ICP-OES und ICP-MS (IEC 62321-4:2013/A1:2017)

This amendment A1 modifies the European Standard EN 62321-4:2014; it was approved by CENELEC on 2017-08-17. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment the status of a national standard without any alteration.



Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.



This amendment exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

## European foreword

The text of document 111/414/CDV, future IEC 62321-4:2013/A1, 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 62321-4:2014/A1:2017.

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) | 2018-05-17 |
| • latest date by which the national standards conflicting with the document have to be withdrawn | (dow) | 2020-08-17 |

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

## Endorsement notice

The text of the International Standard IEC 62321-4:2013/A1:2017 was approved by CENELEC as a European Standard without any modification.

IEC 62321-4

Edition 1.0 2017-07

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

AMENDMENT 1
AMENDEMENT 1

## Determination of certain substances in electrotechnical products – Part 4: Mercury in polymers, metals and electronics by CV-AAS, CV-AFS, ICP-OES and ICP-MS



## Détermination de certaines substances dans les produits électrotechniques – Partie 4: Mercure dans les polymères, métaux et produits électroniques par CV-AAS, CV-AFS, ICP-OES et ICP-MS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMMISSION ELECTROTECHNIQUE INTERNATIONALE

ICS 13.020; 43.040.10

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# FOREWORD

This amendment has been prepared by IEC technical committee 111: Environmental standardization for electrical and electronic products and systems.

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

| CDV | Report on voting |
|---|---|
| 111/414/CDV | 111/431/RVC |

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

The committee has decided that the contents of this amendment and the base publication will remain unchanged until the stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

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



## 1 Scope

*Delete, in the second sentence of the second paragraph, the words* "cold cathode".

### 5.1 General

*Add, at the end of the subclause, the following new text:*

**Warning: Analytical experts need to investigate the matrix effect or possible interferences of the phosphor to choose the appropriate conditions.**

## 6 Sampling and test portion

*Replace the existing third paragraph with the following new text:*

For the sample preparation of mercury in fluorescent lamps, follow the instructions given in IEC 62554.

### 8.1 General

*Add, before the NOTE, the following new text:*

"CV-AAS" is the preferred method due to its sensitivity and ease of use for fluorescent lamps.

## 9 Calculation

*Replace the existing text and formula with the following new text and formulae:*

The concentration measured in 8.3 is the concentration of mercury in the sample solution. The total amount of mercury in the sample is calculated from Formula (1):

$$m_{Hg} = (A_1 - A_2) \times V1_{Hg} \times D \quad (1)$$

where

$m_{Hg}$ is the total (absolute) amount of mercury in the sample in mg;

$V1_{Hg}$ is the total volume of the original sample solution in l;

$D$ is the diluting factor after diluting the original sample solution;

$A_1$ is the concentration of Hg in the sample solution in mg/l;

$A_2$ is the concentration of Hg in the reagent blank solution in mg/l;

The total concentration of mercury in the sample is calculated from Formula (2):



$$C_{Hg} = \frac{(A_3 - A_4)}{M} \times V2_{Hg} \times D \quad (2)$$



where

$C_{Hg}$ is the total concentration of Hg in the sample in µg/g;

$V2_{Hg}$ is the total volume of the original sample solution in ml;

$D$ is the diluting factor after diluting the original sample solution;

$A_3$ is the concentration of Hg in the sample solution in mg/l;

$A_4$ is the concentration of Hg in the reagent blank solution in mg/l;

$M$ is the mass of the original/complete sample in g.

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