

SLOVENSKI STANDARD SIST EN IEC 61960-4:2024

01-november-2024

Sekundarni členi in baterije, ki vsebujejo alkalne ali druge nekislinske elektrolite -Sekundarni litijevi členi in baterije za prenosne naprave - 4. del: Gumbni litijevi sekundarni členi in baterije, izdelane iz njih

Secondary cells and batteries containing alkaline or other non-acid electrolytes -Secondary lithium cells and batteries for portable applications - Part 4: Coin secondary lithium cells, and batteries made from them

Sekundärzellen und -batterien mit alkalischen oder anderen nicht-säurehaltigen Elektrolyten - Sekundäre Lithiumzellen und -batterien für tragbare Anwendungen - Teil 4: Sekundäre Lithium-Knopfzellen und daraus hergestellte Batterien

Accumulateurs alcalins et autres accumulateurs à électrolyte non acide - Accumulateurs au lithium pour applications portables - Partie 4: Éléments et batteries daccumulateurs boutons au lithium

Ta slovenski standard je istoveten z: EN IEC 61960-4:2024

ICS:

29.220.30 Alkalni sekundarni členi in

baterije

Alkaline secondary cells and

batteries

SIST EN IEC 61960-4:2024

en

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

SIST EN IEC 61960-4:2024

https://standards.iteh.ai/catalog/standards/sist/78b49449-e941-4f38-93eb-86a012760085/sist-en-iec-61960-4-2024

EUROPEAN STANDARD NORME EUROPÉENNE EUROPÄISCHE NORM

EN IEC 61960-4

September 2024

ICS 29.220.99

Supersedes EN IEC 61960-4:2020

English Version

Secondary cells and batteries containing alkaline or other nonacid electrolytes - Secondary lithium cells and batteries for portable applications - Part 4: Coin secondary lithium cells, and batteries made from them (IEC 61960-4:2024)

Accumulateurs alcalins et autres accumulateurs à électrolyte non acide - Accumulateurs au lithium pour applications portables - Partie 4: Éléments et batteries d'accumulateurs boutons au lithium (IEC 61960-4:2024)

Sekundärzellen und -batterien mit alkalischen oder anderen nicht-säurehaltigen Elektrolyten - Sekundäre Lithiumzellen und -batterien für tragbare Anwendungen - Teil 4: Sekundäre Lithium-Knopfzellen und daraus hergestellte Batterien (IEC 61960-4:2024)

This European Standard was approved by CENELEC on 2024-09-03. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard 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 European Standard 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.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.



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

EN IEC 61960-4:2024 (E)

European foreword

The text of document 21A/880/FDIS, future edition 2 of IEC 61960-4, prepared by SC 21A "Secondary cells and batteries containing alkaline or other non-acid electrolytes" of IEC/TC 21 "Secondary cells and batteries" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 61960-4:2024.

The following dates are fixed:

- latest date by which the document has to be implemented at national (dop) 2025-06-03 level by publication of an identical national standard or by endorsement
- latest date by which the national standards conflicting with the (dow) 2027-09-03 document have to be withdrawn

This document supersedes EN IEC 61960-4:2020 and all of its amendments and corrigenda (if any).

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.

Any feedback and questions on this document should be directed to the users' national committee. A complete listing of these bodies can be found on the CENELEC website.

Endorsement notice

The text of the International Standard IEC 61960-4:2024 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 standard indicated:

IEC 60051 series	NOTE	Approved as EN IEC 60051 series
IEC 60086-1	NOTE	Approved as EN IEC 60086-1
IEC 60086-2	NOTE	Approved as EN IEC 60086-2
IEC 60086-3:2021	NOTE	Approved as EN IEC 60086-3:2021 (not modified)
IEC 61434	NOTE	Approved as EN 61434
IEC 61959	NOTE	Approved as EN 61959
IEC 61960-3	NOTE	Approved as EN 61960-3
IEC 62281	NOTE	Approved as EN IEC 62281
IEC 62368-1	NOTE	Approved as EN IEC 62368-1

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.cencenelec.eu.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	EN/HD	<u>Year</u>
IEC 60050-482	-	International Electrotechnical Vocabulary - Part 482: Primary and secondary cells and batteries	-	-
IEC 60086-4	2019	Primary batteries - Part 4: Safety of lithium batteries	EN IEC 60086-4	2019
IEC 62133-2	2017	Secondary cells and batteries containing alkaline or other non-acid electrolytes - Safety requirements for portable sealed secondary lithium cells, and for batteries made from them, for use in portable applications - Part 2: Lithium systems	EN 62133-2	2017
+ AMD1 andards.iteh.ai/catalo	2021)12760 † A1 /sist-en-	2021

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

SIST EN IEC 61960-4:2024

https://standards.iteh.ai/catalog/standards/sist/78b49449-e941-4f38-93eb-86a012760085/sist-en-iec-61960-4-2024



IEC 61960-4

Edition 2.0 2024-07

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Secondary cells and batteries containing alkaline or other non-acid electrolytes – Secondary lithium cells and batteries for portable applications – Part 4: Coin secondary lithium cells, and batteries made from them

Accumulateurs alcalins et autres accumulateurs à électrolyte non acide – Accumulateurs au lithium pour applications portables – Partie 4: Éléments et batteries d'accumulateurs boutons au lithium

11. https://stanuarus.html.ai/catalog/stanuarus/sist/76049449-6941-4136-9360-60a012/00063/sist-611-166-01900-4-202

INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMMISSION ELECTROTECHNIQUE INTERNATIONALE

ICS 29,220,99 ISBN 978-2-8322-9196-2

Warning! Make sure that you obtained this publication from an authorized distributor.

Attention! Veuillez vous assurer que vous avez obtenu cette publication via un distributeur agréé.

CONTENTS

F	OREWO	PRD	4
1	Scop	oe	6
2	Norn	native references	6
3	Term	ns and definitions	7
4	Para	meter measurement tolerances	8
5	Cell	designation and marking	8
	5.1	Cell designation	
	5.2	Marking	
	5.2.1	· ·	
	5.2.2	Swallowable cells or batteries	10
6	Elec	trical tests	11
	6.1	General	11
	6.2	Charging procedure for test purposes	12
	6.3	Discharge performance	12
	6.4	Charge (capacity) recovery after long-term storage	13
	6.5	Endurance in cycles	13
	6.6	Cell or battery internal resistance (AC resistance)	14
	6.6.1		
	6.6.2		
	6.6.3	Measurement	14
	6.6.4	•	
7	Diffe	rentiation	15
Α	nnex A	(normative) Requirements for secondary lithium watch batteries	16
	A.1	GeneralSIST EN TEC 01900-4:2024	16
	A.2 ite	Physical requirements	16
	A.2.1	,	
	A.2.2		
	A.3	Test methods for determining the resistance to leakage	
	A.3.1	3	
	A.3.2	9 1	
	A.3.3	, ,	
	A.4	Visual examination and acceptance criteria	
	A.4.1	5	
	A.4.2	5	
	A.4.3 A.4.4	S .	
۸		(informative) Guidelines for designers of equipment using lithium batteries	
		phy	
Б	ibilograp	ony	21
F	igure 1 -	- Dimensional characteristics	9
	•	- Sample sizes and sequence of tests	
	•	1 – Dimensional drawing	
		2 – Test by temperature cycles	
Г	iguie A	z – rest by telliperature cycles	10
,	abla 1	Floatrachemical avatama in aurrent prostical ves	0
I	avie I –	Electrochemical systems in current practical use	9

Table 2 – Examples of generally used upper limit charge voltage	12
Table 3 – Example of generally used lower limit of end-of-discharge voltage	13
Table 4 – Minimum number of cycles	14
Table A.1 – Dimensions and size codes for watch batteries	17
Table A.2 – Storage conditions	17
Table B.1 – Equipment design guidelines	20

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

SIST EN IEC 61960-4:2024

https://standards.iteh.ai/catalog/standards/sist/78b49449-e941-4f38-93eb-86a012760085/sist-en-jec-61960-4-2024

– 4 –

INTERNATIONAL ELECTROTECHNICAL COMMISSION

SECONDARY CELLS AND BATTERIES CONTAINING ALKALINE OR OTHER NON-ACID ELECTROLYTES – SECONDARY LITHIUM CELLS AND BATTERIES FOR PORTABLE APPLICATIONS –

Part 4: Coin secondary lithium cells, and batteries made from them

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.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) IEC draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). IEC takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, IEC had not received notice of (a) patent(s), which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at https://patents.iec.ch. IEC shall not be held responsible for identifying any or all such patent rights.

IEC 61960-4 has been prepared by subcommittee 21A: Secondary cells and batteries containing alkaline or other non-acid electrolytes, of IEC technical committee 21: Secondary cells and batteries, in cooperation with ISO technical committee 114: Horology. It is an International Standard.

This second edition cancels and replaces the first edition published in 2020. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) added an annex to standardize requirements for secondary lithium watch batteries;
- b) added new chemistries;