

SLOVENSKI STANDARD
SIST EN 60623:2017**01-julij-2017****Nadomešča:**
SIST EN 60623:2002

**Sekundarni člani in baterije z alkalnimi ali drugimi nekislinskimi elektroliti -
Oddušni nikelj-kadmijevi prizmatični polnljivi enojni člani**

Secondary cells and batteries containing alkaline or other non-acid electrolytes - Vented nickel-cadmium prismatic rechargeable single cells

Akkumulatoren und Batterien mit alkalischem oder anderem nicht-säurehaltigen Elektrolyten - Geschlossene prismatische wiederaufladbare Nickel-Cadmium-Einzelnzellen
ITih STANDARD PREVIEW
(standards.itih.ai)[SIST EN 60623:2017](#)Accumulateurs alcalins ou autres accumulateurs à électrolyte non acide - Eléments individuels parallélépipédiques rechargeables ouverts au nickel-cadmium
[https://standards.itih.ai/60623-2017](#)
[https://standards.itih.ai/60623-2017](#)**Ta slovenski standard je istoveten z: EN 60623:2017****ICS:**

29.220.30 Alkalni sekundarni člani in baterije Alkaline secondary cells and batteries

SIST EN 60623:2017 en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 60623:2017](https://standards.iteh.ai/catalog/standards/sist/6022f783-2ce5-4d46-b471-22c612af0d45/sist-en-60623-2017)

<https://standards.iteh.ai/catalog/standards/sist/6022f783-2ce5-4d46-b471-22c612af0d45/sist-en-60623-2017>

EUROPEAN STANDARD

EN 60623

NORME EUROPÉENNE

EUROPÄISCHE NORM

May 2017

ICS 29.220.99

Supersedes EN 60623:2001

English Version

Secondary cells and batteries containing alkaline or other non-acid electrolytes - Vented nickel-cadmium prismatic rechargeable single cells
(IEC 60623:2017)

Accumulateurs alcalins et autres accumulateurs à électrolyte non acide - Eléments individuels parallélépipédiques rechargeables ouverts au nickel-cadmium
(IEC 60623:2017)

Akkumulatoren und Batterien mit alkalischen oder anderen nicht-säurehaltigen Elektrolyten - Geschlossene prismatische wiederaufladbare Nickel-Cadmium-Einzelzellen
(IEC 60623:2017)

This European Standard was approved by CENELEC on 2017-02-27. 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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.



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

EN 60623:2017**European foreword**

The text of document 21A/610/FDIS, future edition 5 of IEC 60623, 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 60623:2017.

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) 2017-11-27
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2020-02-27

This document supersedes EN 60623:2001.

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

Endorsement notice

The text of the International Standard IEC 60623:2017 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 60051 (series) | NOTE Harmonized as EN 60051 (series).
https://standards.iteh.ai/catalog/standards/sist/6022f783-2ce5-4d46-b471-220f2af0493b/iec-60623-2017 |
| IEC 61434 | NOTE Harmonized as EN 61434. |

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE 1 When 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.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60050-482	2004	International Electrotechnical Vocabulary (IEV) -- Part 482: Primary and secondary cells and batteries	-	-
IEC 60417	-	Graphical symbols for use on equipment. Index, survey and compilation of the single sheets.	-	-

iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN 60623:2017](https://standards.iteh.ai/catalog/standards/sist/6022f783-2ce5-4d46-b471-22c612af0d45/sist-en-60623-2017)

<https://standards.iteh.ai/catalog/standards/sist/6022f783-2ce5-4d46-b471-22c612af0d45/sist-en-60623-2017>

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 60623:2017](#)

<https://standards.iteh.ai/catalog/standards/sist/6022f783-2ce5-4d46-b471-22c612af0d45/sist-en-60623-2017>



IEC 60623

Edition 5.0 2017-01

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Secondary cells and batteries containing alkaline or other non-acid electrolytes – Vented nickel-cadmium prismatic rechargeable single cells

Accumulateurs alcalins ou autres accumulateurs à électrolyte non acide – Éléments individuels parallélépipédiques rechargeables ouverts au nickel-cadmium

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

ICS 29.220.99

ISBN 978-2-8322-3788-5

**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

FOREWORD	4
1 Scope	6
2 Normative references	6
3 Terms and definitions	6
4 Parameter measurement tolerances	7
5 Designation and marking	7
5.1 Cell designation (mandatory)	7
5.2 Cell designation (optional)	8
5.3 Cell termination	8
5.4 Marking	8
5.5 Safety recommendations	8
6 Dimensions	9
7 Electrical tests	10
7.1 General	10
7.2 Charging procedure for test purposes	10
7.2.1 General	10
7.2.2 Charge procedure based on constant current	11
7.2.3 Charge procedure based on constant voltage at a given current	11
7.2.4 Rapid charge current	11
7.3 Discharge performances	11
7.3.1 General	11
7.3.2 Discharge performance at 20 °C	11
7.3.3 Discharge performance at +5 °C	12
7.3.4 Discharge performance at –18 °C	13
7.3.5 Discharge performance at low temperature	13
7.3.6 Discharge performance at high temperature	14
7.3.7 High rate current test	15
7.4 Charge retention	16
7.5 Endurance	16
7.5.1 Test conditions	16
7.5.2 Endurance in cycles	16
7.6 Charge acceptance at constant voltage	17
7.7 Vent plug operation	18
7.8 Electrolyte retention test	18
7.8.1 General	18
7.8.2 Test procedure	18
7.8.3 Acceptance criteria	18
7.9 Storage	18
8 Mechanical tests	18
9 Physical appearance	18
10 Conditions for approval and acceptance	19
10.1 Type approval	19
10.2 Batch acceptance	19
Annex A (normative) CCCV charge methodology	21
Bibliography	24

Figure 1 – Example of a vented prismatic cell in steel container with two terminals and four lugs.....	9
Figure A.1 – Overview of charging characteristic of Ni-Cd.....	22
Table 1 – Dimensions for vented nickel-cadmium prismatic cells in steel containers	9
Table 2 – Dimensions for vented nickel-cadmium prismatic cells in plastic containers.....	10
Table 3 – Measurement tolerances in millimetres (valid for widths and lengths)	10
Table 4 – Maximum values for rapid charge current R	11
Table 5 – Discharge performance at 20 °C.....	12
Table 6 – Discharge performance at +5 °C.....	12
Table 7 – Discharge performance at –18 °C.....	13
Table 8 – Discharge performance at low temperature	14
Table 9 – Discharge performance at high temperature	15
Table 10 – High currents values.....	15
Table 11 – Endurance in cycles	16
Table 12 – Constant voltage charging conditions	17
Table 13 – Charge time.....	17
Table 14 – Sequence of tests for type approval	19
Table 15 – Recommended test sequence for batch acceptance.....	20
Table A.1 – Ni-Cd batteries charging characteristics.....	22

SIST EN 60623:2017

<https://standards.iteh.ai/catalog/standards/sist/6022f783-2ce5-4d46-b471-22c612af0d45/sist-en-60623-2017>

INTERNATIONAL ELECTROTECHNICAL COMMISSION

**SECONDARY CELLS AND BATTERIES CONTAINING
ALKALINE OR OTHER NON-ACID ELECTROLYTES –
VENTED NICKEL-CADMIUM PRISMATIC RECHARGEABLE SINGLE CELLS**

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.
[SIST EN 60623:2017](https://standards.iteh.ai/catalog/standards/sist/en-60623-2017)
<https://standards.iteh.ai/catalog/standards/sist/en-60623-2017>
- 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) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 60623 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.

This fifth edition cancels and replaces the fourth edition published in 2001 and constitutes a technical revision.

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

- optional characterization of cells designed for performances at very low and/or very high temperature;
- optional characterization of cells tested with CCCV charge;
- optional characterization of cells designed for rapid charge;
- optional characterization of cells designed for high cycling.

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

FDIS	Report on voting
21A/610/FDIS	21A/621/RVD

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

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this 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.

iTeh STANDARD PREVIEW **(standards.iteh.ai)**

[SIST EN 60623:2017](https://standards.iteh.ai/catalog/standards/sist/6022f783-2ce5-4d46-b471-22c612af0d45/sist-en-60623-2017)

<https://standards.iteh.ai/catalog/standards/sist/6022f783-2ce5-4d46-b471-22c612af0d45/sist-en-60623-2017>

SECONDARY CELLS AND BATTERIES CONTAINING ALKALINE OR OTHER NON-ACID ELECTROLYTES – VENTED NICKEL-CADMIUM PRISMATIC RECHARGEABLE SINGLE CELLS

1 Scope

IEC 60623 specifies marking, designation, dimensions, tests and requirements for vented nickel-cadmium prismatic secondary single cells.

NOTE In this context, "prismatic" refers to cells having rectangular sides and base.

When there exists an IEC standard specifying test conditions and requirements for cells used in special applications and which is in conflict with this document, the former takes precedence.

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 60050-482:2004, *International Electrotechnical Vocabulary – Part 482: Primary and secondary cells and batteries*

[SIST EN 60623:2017](https://standards.iteh.ai/catalog/standards/sist/6022f783-2ce5-4d46-b471-22c612af0d45/sist-en-60623-2017)

IEC 60417, *Graphical symbols for use on equipment* (available from: <http://www.graphical-symbols.info/equipment>)

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60050-482 and the following 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>

3.1

vented cell

secondary cell having a cover provided with an opening through which products of electrolysis and evaporation are allowed to escape freely from the cell to the atmosphere

Note 1 to entry: The opening may be fitted with a venting system.

3.2

nominal voltage

suitable approximate value of the voltage used to designate or identify a cell or a battery

Note 1 to entry: The nominal voltage of a vented nickel-cadmium rechargeable single cell is 1,2 V.

Note 2 to entry: The nominal voltage of a battery of n series connected cells is equal to n times the nominal voltage of a single cell.