SLOVENSKI STANDARD
oSIST prEN IEC 61951-2:2026

01-maj-2026

Sekundarni členi in baterije z alkalnimi ali drugimi nekislinskimi elektroliti - Sekundarni zatesnjeni členi in baterije za prenosne naprave - 2. del: Nikelj-kovinski hidrid

Secondary cells and batteries containing alkaline or other non acid electrolytes - Secondary sealed cells and batteries for portable applications - Part 2: Nickel-metal hydride

Sekundärzellen und -batterien mit alkalischen oder anderen nichtsäurehaltigen Elektrolyten - Tragbare wiederaufladbare gasdichte Zellen und Batterien - Teil 2: Nickel-Metallhydrid

Accumulateurs alcalins et autres accumulateurs à électrolyte non-acide - Accumulateurs étanches pour applications portables - Partie 2: Nickel-métal hydrure

Ta slovenski standard je istoveten z: **prEN IEC 61951-2:2026**

ICS:

29.220.30	Alkalni sekundarni členi in baterije	Alkaline secondary cells and batteries

oSIST prEN IEC 61951-2:2026 **en**

21A/967/CDV

COMMITTEE DRAFT FOR VOTE (CDV)

PROJECT NUMBER: **IEC 61951-2 ED5**	
DATE OF CIRCULATION: **2026-03-13**	CLOSING DATE FOR VOTING: **2026-06-05**
SUPERSEDES DOCUMENTS: **21A/922/CD, 21A/951A/CC**	

IEC SC 21A : SECONDARY CELLS AND BATTERIES CONTAINING ALKALINE OR OTHER NON-ACID ELECTROLYTES

SECRETARIAT: France	SECRETARY: Mr Jean-Marie Bodet
OF INTEREST TO THE FOLLOWING COMMITTEES: TC 35	HORIZONTAL FUNCTION(S):
ASPECTS CONCERNED:	

☒ 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.

☐ NOT SUBMITTED FOR CENELEC PARALLEL VOTING

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:

Secondary cells and batteries containing alkaline or other non acid electrolytes – Secondary sealed cells and batteries for portable applications – Part 2: Nickel-metal hydride

PROPOSED STABILITY DATE: 2027

NOTE FROM TC/SC OFFICERS:

The compilation of comments has been analyzed and solved by the project team. The resolved comments have been presented during IEC SC21A WG2 Hybrid Meeting held in Washington on 2025-10-29, approved by the members of the WG2 and distributed to NCs.

The revised draft (clean document) for CDV is proposed to be onboarded on Online Standard Development (OSD).

Link to Committee Draft for Vote (CDV) online document:

Click here

How to access

This link leads you to the Online Standards Development (OSD) platform for National Mirror Committee's (NMC) comments. The project draft may be found further down this document.

Resource materials

We recommend NCs to review the available materials to better understand the member commenting on the OSD platform.

This includes the:

- OSD NC roles overview
- How to add and submit comments to the IEC

Contact

Should you require any assistance, please contact the IEC IT Helpdesk.

CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

_____

Secondary cells and batteries containing alkaline or other non acid electrolytes – Secondary sealed cells and batteries for portable applications – Part 2: Nickel-metal hydride

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/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 61951-2 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. It is an International Standard.

This fifth edition cancels and replaces the fourth edition published in 2017 and its amendment 1 published in 2022. This edition constitutes a technical revision.

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

a) addition of application examples as performance reference test in scope;

b) addition of manufacture period indication options;

c) revision of dimensions of jacketed cylindrical cells dimensionally interchangeable with primary cells (ϕP: reference value);

d) revision of charge endurance test objects (7.5.2.1);

e) revision of type approval test table (10.2) which harmonized with revision of charge endurance test objects.

The text of this International Standard is based on the following documents:

Draft	Report on voting
21A/XX/FDIS	21A/XX/RVD

The language used for the development of this International Standard is English [change language if necessary].

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/publications.

A list of all parts of the IEC 61951 series can be found, under the general title *Secondary cells and batteries containing alkaline or other non-acid electrolytes - Secondary sealed cells and batteries for portable applications*, 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, or

– revised.

INTRODUCTION

Note from IEC: The following items were listed in the bibliography but not cited in the text. Please find a suitable place to cite them to justify their inclusion in the bibliography:

IEC 60051 (all parts), *Direct acting indicating analogue electrical measuring instruments and their accessories*IEC 60051 (all parts) [1]

IEC 60086 (all parts), *Primary batteries*IEC 60086 (all parts) [2]

IEC 60485, *Digital electronic d.c. voltmeters and d.c. electronic analogue-to-digital convertors*IEC 60485 [3]

1 Scope

This part of IEC 61951 specifies marking, designation, dimensions, tests and requirements for secondary sealed nickel-metal hydride small prismatic, cylindrical and button cells and batteries which are conveniently hand-carried, suitable use for portable applications.

Examples of portable applications are remote controllers, flashlights, toys, electric toothbrush, power tools and similar equipment.

This standard also covers portable cells and batteries for the following applications as a performance reference standard (specific standards or regulations take precedence):

a) Fixed application: in-vehicle accessories, emergency lights and similar equipment, and

b) Personal mobility application: mobility scooters or electric bicycles that are not required to be registered for use on the road, and similar equipment.

NOTE The cell is not limited to specific products indicated in examples, if there is agreement between supplier and purchaser.

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 (IEV) - Part 482: Primary and secondary cells and batteries*

IEC 60086-2, *Primary batteries - Part 2: Physical and electrical specifications*

IEC 61959, *Secondary cells and batteries containing alkaline or other non-acid electrolytes - Mechanical tests for sealed portable secondary cells and batteries*

IEC 62133-1, *Secondary cells and batteries containing alkaline or other non-acid electrolytes - Safety requirements for portable sealed secondary cells and for batteries made from them, for use in portable applications - Part 1: Nickel systems*

IEC 62902, *Secondary cells and batteries - Marking symbols for identification of their chemistry*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60050-482:2004 and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

– IEC Electropedia: available at https://www.electropedia.org/

– ISO Online browsing platform: available at https://www.iso.org/obp

3.1
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 sealed nickel-metal hydride 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.

[SOURCE: IEC 60050-482:2004, 482-03-31, modified - Addition of Notes 1 and 2 to entry.]

3.2
rated capacity
capacity value of a cell or battery determined under specified conditions and declared by the manufacturer

Note 1 to entry: The rated capacity is the quantity of electricity C_5 Ah (ampere-hours) declared by the manufacturer which a single cell can deliver during a 5 h period when charging, storing and discharging under the conditions specified in 7.3.2.

Note 2 to entry: The capacity of a battery is the quantity of electricity C_5 Ah (ampere-hours) declared by the manufacturer which a battery can deliver during a 5 h period, when charged, stored and discharged under the procedure described in 7.3.2.

[SOURCE: IEC 60050-482:2004, 482-03-15, modified - Addition of Notes 1 and 2 to entry.]

3.3
small prismatic cell
cell in the form of a rectangular parallelepiped whose width and thickness dimensions are not more than 25 mm

3.4
cylindrical cell
cell of circular cross-section in which the overall height is equal to, or greater than the overall diameter

3.5
button cell
cell of circular cross-section in which the overall height is less than the overall diameter

3.6
nickel-metal hydride cell
cell containing a nickel hydroxide compound for the positive electrode, a hydrogen absorbing alloy for the negative electrode, and potassium hydroxide or other alkaline solution as electrolyte

Note 1 to entry: Positive electrodes are isolated from negative electrodes by a separator

3.7
nickel-metal hydride battery
assembly of secondary cell(s) as a source of electrical energy characterized by its voltage, size, terminal arrangement, capacity and rate capability

3.8
sealed cell
cell which remains closed and does not release either gas or liquid when operated within the limits of charge and temperature specified by the manufacturer

Note 1 to entry: The cell is equipped with a safety device to prevent dangerously high internal pressure.

Note 2 to entry: The cell does not require addition to the electrolyte and is designed to operate during its life in its original sealed state.

Note 3 to entry: The nickel-metal hydride cell, however, may release gas towards the end of its life due to the accumulation of hydrogen in the cell.

[SOURCE: IEC 60050-482:2004, 482-05-17, modified - The existing note has been developed into Notes 1, 2 and 3 to entry.]

3.9
surface temperature limited cell
cell which performs a function that prevents the temperature increase from a certain standard point even at the moment of an abnormal occurrence such as short circuit of cell

3.10
high recovery type cell or battery
cell or battery which has lower "permanent capacity loss" than normal type after storage

Note 1 to entry: It is defined as "high recovery type" in 7.10.2, Table 22.

3.11
low self-discharge type cell
cell which is able to retain higher charge capacity than normal type after storage by reducing self-discharge

Note 1 to entry: It is defined as "low self-discharge type" in 7.4.

3.12
9 V type nickel-metal hydride battery
nickel-metal hydride battery which is interchangeable with 9 V primary batteries and is composed of cylindrical cells, small prismatic cells or button cells

3.13
trickle charge
method of charge applied to a battery wherein the state of charge is maintained by a continuous, long term, regulated small electric current

Note 1 to entry: The trickle charge compensates self-discharge effects and maintains the battery in an approximately fully charged state.

Note 2 to entry: The trickle charge is not suitable for cells and batteries that are designed with overcharge protection.

Note 3 to entry: The trickle charge is performed with the cell or battery disconnected from the load.

[SOURCE: IEC 60050-482:2004, 482-05-17, modified - Replace secondary battery type not suitable for trickle charge to cells and batteries that are designed with overcharge protection. and add Note 3 to entry.]

4 Parameter measurement tolerances

The overall accuracy of controlled or measured values, relative to the specified or actual values, shall be within the following tolerances:

a) ±1 % for voltage;

b) ±1 % for current;

c) ±1 % for capacity;

d) ±2 °C for temperature;

e) ±0,1 % for time;

f) ±0,1 mm for dimensions;

g) ±5 % for humidity.

These tolerances comprise the combined accuracy of the measuring instruments, the measurement techniques used and all other sources of error in the test procedure.

The details of the instrumentation used shall be provided in each report of results.

5 Cell and battery designation and marking

5.1 Cell and battery designation

5.1.1 Small prismatic cells and cylindrical cells

5.1.1.1 General

Sealed nickel-metal hydride small prismatic rechargeable single cells and cylindrical rechargeable single cells shall be designated according to discharge rate characteristics by a letter L, M, J, H or X which signifies:

– low rate of discharge (L);
– medium rate of discharge (M);
– medium high rate of discharge (J);
– high rate of discharge (H);
– very high rate of discharge (X).

NOTE 1 These cells are typically but not exclusively used for the following discharge rates:

– L up to 0,5 I_t A;
– M up to 3,5 I_t A;
– J up to 5,0 I_t A;
– H up to 7,0 I_t A;
– X over 7,0 I_t A.

NOTE 2 These currents are expressed as multiples of I_t A, where I_t A = C_5 Ah/1 h (see IEC 61434 [4]).

When a cell is intended for permanent charge at elevated temperatures, typically higher than 40 °C, a letter "T" is placed after the letter L, M, J, H or X.

When a cell is intended for permanent charge at elevated temperatures, typically higher than 50 °C, a letter "U" is placed after the letter L, M, J, H or X.

When a cell is intended for surface temperature limitation under an abnormal situation, a letter "S" is placed after the letter L or M.

When a cell is intended for rapid charge, typically at 1,0 I_t A, a letter "R" is placed after the letter L, M, J, H or X.

When a cell or battery is intended as a high recovery type, a letter "F" is placed after the letter L, M, J, H or X.

When a cell is intended as a low self-discharge cell, a letter "I" is placed after the letter L, M, J, H or X.

5.1.1.2 Small prismatic cells

Sealed nickel-metal hydride small prismatic rechargeable single cells shall be designated by the letters "HF" followed by a letter L, M, J, H or X, and where applicable, followed by a letter T, U, R, F and/or I, followed by three groups of figures, each group being separated by a solidus, as follows:

a) The two figures to the left of the first solidus shall indicate the maximum width specified for the cell, expressed in millimetres, rounded up to the next whole number.
b) The two figures in the middle shall indicate the maximum thickness specified for the cell, expressed in millimetres, rounded up to the next whole number.

c) The two figures to the right of the second solidus shall indicate the maximum height specified for the cell, expressed in millimetres, rounded up to the next whole number.

EXAMPLE HFLF 18/07/49 designation identifies a small prismatic cell of low discharge rate capability, high recovery type with a maximum width of 18 mm, a maximum thickness of 7 mm and a maximum height of 49 mm.

5.1.1.3 Cylindrical cells

Sealed nickel-metal hydride cylindrical rechargeable single cells shall be designated by the letters "HR" followed by a letter L, M, J, H or X, and where applicable, followed by a letter T, U, S, R, F and/or I, followed by two groups of figures, each group being separated by a solidus, as follows:

a) The two figures to the left of the solidus shall indicate the maximum diameter specified for the cell, expressed in millimetres, rounded up to the next whole number.

b) The two figures to the right of the solidus shall indicate the maximum height specified for the cell, expressed in millimetres, rounded up to the next whole number.

EXAMPLE 1 HRLF 33/62 designation identifies a cylindrical cell of low discharge rate capability, high recovery type with a maximum diameter of 33 mm and a maximum height of 61,5 mm.

EXAMPLE 2 HRLTF 33/62 designation identifies a cylindrical cell of low discharge rate capability, intended for permanent charge at elevated temperatures, typically higher than 40 °C, high recovery type, with a maximum diameter of 33 mm and a maximum height of 61,5 mm.

EXAMPLE 3 HRXRFI 23/43 designation identifies a cylindrical cell of very high discharge rate capability, intended for rapid charge typically at 1,0 I_t A, high recovery type, low self-discharge type with a maximum diameter of 23 mm and a maximum height of 43 mm.

For cells dimensionally interchangeable with primary cells, the following single or double figures following the letter L or M, J, H or X, and where applicable, following the letter T, U, S, R, F and/or I may indicate:

– 20- Size D;
– 14- Size C;
– 6- Size AA;
– 03- Size AAA.

NOTE Unless a discharge rate type L, M, J, H, or X is specified in the designation, cells dimensionally interchangeable with primary cells correspond to M type

For the purpose of this explanation, an example is given below.

EXAMPLE 4 HRMRFI03 designation identifies a sealed nickel-metal hydride cylindrical rechargeable single cell, of medium discharge rate capability, also intended for rapid charge typically at 1,0 I_t A, high recovery type and low self-discharge type, dimensionally interchangeable with primary cell and whose type designation is AAA.

When a manufacturer designs a cell with dimensions and tolerances which make it interchangeable with a primary cell, the designations in Table 2 shall also be marked on the cell.

5.1.2 Button cells

Sealed nickel-metal hydride button rechargeable single cells shall be designated by the letters "HB" followed by, if designated, letter F and/or letter I, followed by two groups of figures, each group being separated by a solidus, as follows:

a) The three figures to the left of the solidus shall indicate the maximum diameter specified for the cell, expressed in tenths of millimetres, rounded up to the next whole number.

b) The three figures to the right of the solidus shall indicate the maximum height specified for the cell, expressed in tenths of millimetres, rounded up to the next whole number.

EXAMPLE HBFI 116/054 designation identifies a button cell, intended as a high recovery type, low self-discharge type, with a maximum diameter of 11,6 mm and a maximum height of 5,4 mm.