



**SLOVENSKI STANDARD
SIST EN IEC 63115-2:2021**

01-april-2021

Sekundarni člani in baterije z alkalnimi ali drugimi nekislinskimi elektroliti - Zatesnjeni nikelj-kovinski hidridni ponovno polnljivi člani in moduli za industrijsko uporabo - 2. del: Varnost

Secondary cells and batteries containing alkaline or other non-acid electrolytes - Sealed nickel-metal hydride rechargeable cells and modules for use in industrial applications - Part 2: Safety

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

[SIST EN IEC 63115-2:2021](https://standards.iteh.ai/catalog/standards/sist/2e879fa0-2911-48e9-b75d-74b6aa9432ae/sist-en-iec-63115-2-2021)

[https://standards.iteh.ai/catalog/standards/sist/2e879fa0-2911-48e9-b75d-](https://standards.iteh.ai/catalog/standards/sist/2e879fa0-2911-48e9-b75d-74b6aa9432ae/sist-en-iec-63115-2-2021)

[74b6aa9432ae/sist-en-iec-63115-2-2021](https://standards.iteh.ai/catalog/standards/sist/2e879fa0-2911-48e9-b75d-74b6aa9432ae/sist-en-iec-63115-2-2021)

Ta slovenski standard je istoveten z: EN IEC 63115-2:2021

ICS:

29.220.30	Alkalni sekundarni člani in baterije	Alkaline secondary cells and batteries
-----------	--------------------------------------	--

SIST EN IEC 63115-2:2021

en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN IEC 63115-2:2021](#)

<https://standards.iteh.ai/catalog/standards/sist/2e879fa0-2911-48e9-b75d-74b6aa9432ac/sist-en-iec-63115-2-2021>

EUROPEAN STANDARD

EN IEC 63115-2

NORME EUROPÉENNE

EUROPÄISCHE NORM

February 2021

ICS 29.220.30

English Version

Secondary cells and batteries containing alkaline or other non-acid electrolytes - Sealed nickel-metal hydride cells and batteries for use in industrial applications - Part 2: Safety
(IEC 63115-2:2021)

Accumulateurs alcalins et autres accumulateurs à électrolyte non acide - Accumulateurs étanches au nickel-métal hydrure destinés à l'utilisation dans les applications industrielles - Partie 2: Sécurité
(IEC 63115-2:2021)

Sekundärzellen und -batterien mit alkalischen oder anderen nicht-säurehaltigen Elektrolyten - Gasdichte Nickel-Metallhydrid-Zellen und -Batterien für den Gebrauch in industriellen Anwendungen - Teil 2: Sicherheit
(IEC 63115-2:2021)

This European Standard was approved by CENELEC on 2021-02-09. 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, Turkey 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 63115-2:2021 (E)**European foreword**

The text of document 21A/735/FDIS, future edition 1 of IEC 63115-2:2021, 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 63115-2:2021.

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) 2021-11-09
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2024-02-09

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 63115-2:2021 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 60068-2-11	NOTE	Harmonized as EN 60068-2-11
IEC 60068-2-60	NOTE	Harmonized as EN 60068-2-60
IEC 60529	NOTE	Harmonized as EN 60529
IEC 60664-1	NOTE	Harmonized as EN IEC 60664-1
IEC 60730-1:2013	NOTE	Harmonized as EN 60730-1:2016 (modified)
IEC 60812	NOTE	Harmonized as EN IEC 60812
IEC 61025	NOTE	Harmonized as EN 61025
IEC 61032:1997	NOTE	Harmonized as EN 61032:1998 (not modified)
IEC 61434	NOTE	Harmonized as EN 61434
IEC 61508 (series)	NOTE	Harmonized as EN 61508 (series)
IEC 61511-1	NOTE	Harmonized as EN 61511-1
IEC 61513	NOTE	Harmonized as EN 61513
IEC 61951-2:2017	NOTE	Harmonized as EN 61951-2:2017 (not modified)
IEC 62061	NOTE	Harmonized as EN 62061
IEC 62133-1:2017	NOTE	Harmonized as EN 62133-1:2017 (not modified)
IEC 62675	NOTE	Harmonized as EN 62675
IEC 62933-2-1:2017	NOTE	Harmonized as EN IEC 62933-2-1:2018 (not modified)
IEC 62485-2:2010	NOTE	Harmonized as EN IEC 62485-2:2018 (not modified)
ISO 9001:2015	NOTE	Harmonized as EN ISO 9001:2015 (not modified)

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.cenelec.eu.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60050-482	-	International Electrotechnical Vocabulary - Part 482: Primary and secondary cells and batteries	-	-
IEC 63115-1	2020	Secondary cells and batteries containing alkaline or other non-acid electrolytes - Sealed nickel-metal hydride cells and batteries for use in industrial applications - Part 1: Performance	EN IEC 63115-1	2020
ISO/IEC Guide 51	-	Safety aspects - Guidelines for their inclusion in standards	-	-

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN IEC 63115-2:2021](#)

<https://standards.iteh.ai/catalog/standards/sist/2e879fa0-2911-48e9-b75d-74b6aa9432ac/sist-en-iec-63115-2-2021>



IEC 63115-2

Edition 1.0 2021-01

INTERNATIONAL STANDARD

NORME INTERNATIONALE



Secondary cells and batteries containing alkaline or other non-acid electrolytes – Sealed nickel-metal hydride cells and batteries for use in industrial applications – Part 2: Safety

[SIST EN IEC 63115-2:2021](https://standards.iteh.ai/catalog/standards/sist/2e879fa0-2911-48e9-b75d-f46c2b32-accumulators-2021)

<https://standards.iteh.ai/catalog/standards/sist/2e879fa0-2911-48e9-b75d-f46c2b32-accumulators-2021>

Accumulateurs alcalins et autres accumulateurs à électrolyte non acide – Accumulateurs étanches au nickel-métal hydrure destinés à l'utilisation dans les applications industrielles – Partie 2: Sécurité

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

ICS 29.220.30

ISBN 978-2-8322-9132-0

**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	9
5 General safety considerations	10
5.1 General.....	10
5.2 Insulation and wiring.....	10
5.3 Venting	10
5.4 Temperature, voltage and current management	10
5.5 Terminal connectors	11
5.6 Assembly of cells into batteries.....	11
5.7 Quality plan	11
5.8 Type test conditions.....	11
5.9 Test items	11
6 Specific requirements and tests.....	12
6.1 General.....	12
6.2 Preliminary preparation for test purposes.....	13
6.3 Insulation.....	13
6.4 Intended use.....	13
6.4.1 Vibration.....	13
6.4.2 Enclosure stress at high ambient temperature	14
6.4.3 Temperature cycling.....	14
6.5 Reasonably foreseeable misuse.....	15
6.5.1 External short-circuit test.....	15
6.5.2 Drop test	15
6.5.3 Mechanical shock (crash hazard).....	16
6.5.4 Thermal abuse test.....	16
6.5.5 Crush	16
6.5.6 Low pressure.....	17
6.5.7 Overcharge test.....	17
6.5.8 Reverse charge test.....	18
7 Battery system safety (considering functional safety).....	18
7.1 Battery management system (BMS) (or battery management unit) – Requirements for the BMS	18
7.2 Overheating control (battery system)	19
8 EMC	20
9 Information for safety.....	20
10 Marking and designation.....	20
Annex A (informative) Battery system safety (considering functional safety) – General requirements.....	21
Bibliography.....	22
Figure 1 – Temperature profile for 6.4.3 – Temperature cycling test.....	15
Figure 2 – Examples of BMS locations and battery system configurations.....	19

Table 1 – Sample size for type tests	12
Table 2 – Level of accessibility test.....	13
Table 3 – Drop test conditions	16

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN IEC 63115-2:2021](https://standards.iteh.ai/catalog/standards/sist/2e879fa0-2911-48e9-b75d-74b6aa9432ac/sist-en-iec-63115-2-2021)

<https://standards.iteh.ai/catalog/standards/sist/2e879fa0-2911-48e9-b75d-74b6aa9432ac/sist-en-iec-63115-2-2021>

INTERNATIONAL ELECTROTECHNICAL COMMISSION

**SECONDARY CELLS AND BATTERIES CONTAINING
ALKALINE OR OTHER NON-ACID ELECTROLYTES –
SEALED NICKEL-METAL HYDRIDE CELLS AND BATTERIES
FOR USE IN INDUSTRIAL APPLICATIONS –**

Part 2: Safety

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) 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 63115-2 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.

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

FDIS	Report on voting
21A/735/FDIS	21A/743/RVD

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

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

A list of all parts in the IEC 63115 series, published under the general title *Secondary cells and batteries containing alkaline or other non-acid electrolytes – Sealed nickel-metal hydride cells and batteries for use in industrial applications*, can be found 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 "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document will be

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

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN IEC 63115-2:2021](https://standards.iteh.ai/catalog/standards/sist/2e879fa0-2911-48e9-b75d-74b6aa9432ac/sist-en-iec-63115-2-2021)

<https://standards.iteh.ai/catalog/standards/sist/2e879fa0-2911-48e9-b75d-74b6aa9432ac/sist-en-iec-63115-2-2021>