



NSAI
Standards

Irish Standard
I.S. EN 61982-4:2016

Secondary batteries (except lithium) for the propulsion of electric road vehicles - Part 4: Safety requirements of nickel-metal hydride cells and modules

I.S. EN 61982-4:2016

Incorporating amendments/corrigenda/National Annexes issued since publication:

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National Foreword

I.S. EN 61982-4:2016 is the adopted Irish version of the European Document EN 61982-4:2016, Secondary batteries (except lithium) for the propulsion of electric road vehicles - Part 4: Safety requirements of nickel-metal hydride cells and modules

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EUROPEAN STANDARD

EN 61982-4

NORME EUROPÉENNE

EUROPÄISCHE NORM

February 2016

ICS 29.220.20

English Version

**Secondary batteries (except lithium) for the propulsion of electric
road vehicles - Part 4: Safety requirements of nickel-metal
hydride cells and modules
(IEC 61982-4:2015)**

Accumulateurs (excepté lithium) pour la propulsion des
véhicules routiers électriques - Partie 4: Exigences de
sécurité pour les éléments et modules d'accumulateurs
nickel métal-hydrure
(IEC 61982-4:2015)

Sekundärbatterien (außer Lithium) für den Antrieb von
Elektrostraßenfahrzeugen -
Teil 4: Sicherheitsanforderungen an Nickel-Metallhydrid-
Zellen und -Module
(IEC 61982-4:2015)

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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

EN 61982-4:2016

European foreword

The text of document 21/852/CDV, future edition 1 of IEC 61982-4, prepared by IEC/TC 21 "Secondary cells and batteries" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 61982-4:2016.

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) 2016-09-01
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IEC 60051	NOTE	Harmonized in EN 60051 series.
IEC 60359	NOTE	Harmonized as EN 60359.
IEC 61982	NOTE	Harmonized as EN 61982.
IEC 62660-2	NOTE	Harmonized as EN 62660-2.

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 61434	-	Secondary cells and batteries containing alkaline or other non-acid electrolytes - Guide to the designation of current in alkaline secondary cell and battery standards	EN 61434	-

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IEC 61982-4

Edition 1.0 2015-10

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Secondary batteries (except lithium) for the propulsion of electric road vehicles –
Part 4: Safety requirements of nickel-metal hydride cells and modules**

**Accumulateurs (excepté lithium) pour la propulsion des véhicules routiers
électriques –
Partie 4: Exigences de sécurité pour les éléments et modules d'accumulateurs
nickel métal-hydrure**



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IEC 61982-4

Edition 1.0 2015-10

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Secondary batteries (except lithium) for the propulsion of electric road vehicles –
Part 4: Safety requirements of nickel-metal hydride cells and modules**

**Accumulateurs (excepté lithium) pour la propulsion des véhicules routiers
électriques –
Partie 4: Exigences de sécurité pour les éléments et modules d’accumulateurs
nickel métal-hydrure**

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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**SECONDARY BATTERIES (EXCEPT LITHIUM)
FOR THE PROPULSION OF ELECTRIC ROAD VEHICLES –**
Part 4: Safety requirements of nickel-metal hydride cells and modules

FOREWORD

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International Standard IEC 61982-4 has been prepared by IEC technical committee 21: Secondary cells and batteries.

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

CDV	Report on voting
21/852/CDV	21/866/RVC

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.

A list of all parts in the IEC 61982 series, published under the general title *Secondary batteries (except lithium) for the propulsion of electric road vehicles*, can be found on the IEC website.

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.

INTRODUCTION

The electric road vehicles (EV) including hybrid electric vehicles (HEV) begin to diffuse in the global market with backing from global concerns on CO₂ reduction and clean energy, as well as from relevant technology advancement and cost reduction. Nickel-metal hydride (Ni-MH) batteries have advantages in cost and balanced performance, and have been used extensively for EV application, especially for the propulsion of HEV.

This standard provides the safety test procedures and acceptance criteria of Ni-MH batteries (cells and modules) for EV application in order to evaluate their basic safety performance. For automobile application, it is important to note the designing diversity of battery packs and systems, and specific requirements for cells corresponding to each of such designs. Based on these facts, the purpose of this standard is to provide a basic level of safety test methodology and criteria with general versatility, which serves a function in common primary testing of cells or modules to be used in a variety of battery systems.

For specific requirements for the safety of cell differ depending on the system designs of battery pack or vehicle, final pass-fail criteria of cell are to be based on the agreement between the cell manufacturers and the customers.

SECONDARY BATTERIES (EXCEPT LITHIUM) FOR THE PROPULSION OF ELECTRIC ROAD VEHICLES –

Part 4: Safety requirements of nickel-metal hydride cells and modules

1 Scope

This Part of IEC 61982 specifies test procedures and acceptance criteria for safety performance of nickel-metal hydride (Ni-MH) secondary cells and modules used for the propulsion of electric vehicles (EV) including battery electric vehicles (BEV) and hybrid electric vehicles (HEV).

This standard intends to secure the basic safety performance of the cell as used in a battery system under intended use and reasonably foreseeable misuse, during the normal operation of EV. The safety requirements of the cell in this standard are based on the premise that the cells and modules are properly used in a battery pack and system within the limit of voltage, current and temperature as specified by the cell manufacturer.

The evaluation of the safety of batteries during transport and storage is not covered by this standard.

NOTE 1 In this standard, Ni-MH cells mean the sealed nickel-metal hydride cells: these are sealed cells that use nickel hydroxide at the positive electrode, a hydrogen absorbing alloy at the negative electrode, and alkaline aqueous solution such as potassium hydroxide as the electrolyte. Sealed-type cells are those that can maintain their sealed condition and do not release gas or liquid when electrically charged and discharged within the temperature range specified by the cell manufacturer. These cells are equipped with a gas release mechanism to prevent explosion.

NOTE 2 In this standard, all the description on the cell are applicable to the module under the test.

2 Normative references

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.

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

IEC 61434, *Secondary cells and batteries containing alkaline or other non-acid electrolytes – Guide to designation of current in alkaline secondary cell and battery standards*

3 Terms and definitions

For the purposes of this document, the terms and definitions and those given in IEC 60050-482, as well as the following apply.

3.1

battery electric vehicle

BEV

electric vehicle with only a traction battery as power source for vehicle propulsion

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