

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE



**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 2: Lithium systems**

**Accumulateurs alcalins et autres accumulateurs à électrolyte non acide –  
Exigences de sécurité pour les accumulateurs au lithium portables étanches,  
et pour les batteries qui en sont constituées, destinés à l'utilisation dans des  
applications portables –  
Partie 2: Systèmes au lithium**



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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

# 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 2: Lithium systems

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**IEC 62133-2 edition 1.1 contains the first edition (2017-02) [documents 21A/620/FDIS and 21A/628/RVD] and its amendment 1 (2021-07) [documents 21A/760/FDIS and 21A/729B/RVD].**

**In this Redline version, a vertical line in the margin shows where the technical content is modified by amendment 1. Additions are in green text, deletions are in strikethrough red text. A separate Final version with all changes accepted is available in this publication.**

International Standard IEC 62133-2 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.

This first edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to IEC 62133:2012:

- separation of nickel systems into a separate Part 1;
- inclusion of coin cell requirements;
- update of assembly of cells into batteries (5.6);
- mechanical tests [vibration, shock] (7.3.8.1, 7.3.8.2);
- insertion of IEC TR 62914 within the Bibliography.

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

The following different practices of a less permanent nature exist in the countries indicated below.

7.3.9: Design evaluation – Forced internal short-circuit test only applies to Korea, Japan, Switzerland and France.

A list of all parts of the IEC 62133 series, published under the general title *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*, can be found on the IEC website.

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# 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 2: Lithium systems

### 1 Scope

This part of IEC 62133 specifies requirements and tests for the safe operation of portable sealed secondary lithium cells and batteries containing non-acid electrolyte, under intended use and reasonably foreseeable misuse.

### 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* (available at <http://www.electropedia.org>)

IEC 61960, *Secondary cells and batteries containing alkaline or other non-acid electrolytes – Secondary lithium cells and batteries for portable applications*

ISO/IEC Guide 51, *Safety aspects – Guidelines for their inclusion in standards*

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60050-482, ISO/IEC Guide 51 and the following apply.

#### 3.1

##### **safety**

freedom from unacceptable risk

#### 3.2

##### **risk**

combination of the probability of occurrence of harm and the severity of that harm

#### 3.3

##### **harm**

physical injury or damage to the health of people or damage to property or to the environment

#### 3.4

##### **hazard**

potential source of harm