



**CSA C22.2 No. 62133-2:20**  
(IEC 62133-2:2017, MOD)  
National Standard of Canada



**CSA C22.2 No. 62133-2:20**  
**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**  
(IEC 62133-2:2017, MOD)



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*CSA C22.2 No. 62133-2:20*

***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 (IEC 62133-2:2017, MOD)***

**Note:** For brevity, this Standard will be referred to as "CSA C22.2 No. 62133-2" throughout.

JANUARY 10, 2020

This national standard is based on publication IEC 62133-2, First Edition (2017).

*Prepared by  
International Electrotechnical Commission*



*Reviewed by*



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## Preface

This is the harmonized CSA Group and UL standard for 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. It is the first edition of CSA C22.2 No. 62133-2, and the first edition of UL 62133-2. This edition of CSA C22.2 No. 62133-2 replaces CAN/CSA-C22.2 No. 62133:17 (adopted IEC 62133:2012), 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. This edition of UL 62133-2 replaces the second edition UL 62133, 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, published September 5, 2017.

This harmonized standard is based on IEC Publication 62133-2: first edition, 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, issued February 2017. IEC 62133-2 is copyrighted by the IEC.

This harmonized standard was prepared by CSA Group and Underwriters Laboratories Inc. (UL). The efforts and support of the International Harmonization Committee for 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 are gratefully acknowledged.

This standard is considered suitable for use for conformity assessment within the stated scope of the standard.

This standard was reviewed by the CSA Subcommittee on Batteries and Battery Systems, under the jurisdiction of the CSA Technical Committee on General Requirements, CE Code, Part II and the CSA Strategic Steering Committee on Requirements for Electrical Safety, and has been formally approved by the CSA Technical Committee. This standard has been developed in compliance with Standards Council of Canada requirements for National Standards of Canada. It has been published as a National Standard of Canada by CSA Group.

## Application of Standard

Where reference is made to a specific number of samples to be tested, the specified number is to be considered a minimum quantity.

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## NATIONAL DIFFERENCES

In the CSA Group and UL publications of this standard, National Differences from the text of International Electrotechnical Commission (IEC) Publication 62133-2, 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, copyright 2017, are indicated by notations (differences) and are presented in bold text. The national difference type is included in the body.

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## FOREWORD

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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**

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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 cancels and replaces the second edition of IEC 62133 published in 2012. It 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.

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

FDIS	Report on voting
21A/620/FDIS	21A/628/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 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.

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.

**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.**

**DV.1 DE Modification to add the following to the IEC Foreword:**

The numbering system in the standard uses a space instead of a comma to indicate thousands and uses a comma instead of a period to indicate a decimal point. For example, 1 000 means 1,000 and 1,01 means 1.01.

# **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.

### **1DV.1 D1 Modification to add the following paragraph and note to Clause [1](#):**

**This standard is not, by itself, generally suitable for the evaluation of the safety of end-products, as it lacks specific requirements regarding charging, the effect of normal loads, abnormal conditions that should be considered, and the physical and electromagnetic stresses encountered in the anticipated environment of the end-product.**

**NOTE** Battery packs with additional features or circuitry, including integral circuitry that facilitates charging, are considered to be end-products.

### **1DV.2 DR Modification to add the following paragraph to Clause [1](#) (Canada only):**

**This standard deals with the covered components used in accordance with CAN/CSA-C22.2 No. 0.**

## **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*

### **2DV.1 DR Modification to add the following to Clause [2](#) (Canada only):**

**CAN/CSA-C22.2 No. 0, *General Requirements – Canadian Electrical Code, Part II***