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COMMENTED VERSION

INTERNATIONAL STANDARD

colour inside

Secondary cells and batteries containing alkaline or other non-acid electrolytes – Secondary lithium cells and batteries for portable applications – Part 4: Coin secondary lithium cells, and batteries made from them

INTERNATIONAL
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SECONDARY CELLS AND BATTERIES CONTAINING ALKALINE OR OTHER NON-ACID ELECTROLYTES – SECONDARY LITHIUM CELLS AND BATTERIES FOR PORTABLE APPLICATIONS –

Part 4: Coin secondary lithium cells, and batteries made from them

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This commented version (CMV) of the official standard IEC 61960-4:2024 edition 2.0 allows the user to identify the changes made to the previous IEC 61960-4:2020 edition 1.0. Furthermore, comments from IEC SC 21A experts are provided to explain the reasons of the most relevant changes, or to clarify any part of the content.

A vertical bar appears in the margin wherever a change has been made. Additions are in green text, deletions are in strikethrough red text. Experts' comments are identified by a blue-background number. Mouse over a number to display a pop-up note with the comment.

This publication contains the CMV and the official standard. The full list of comments is available at the end of the CMV.

IEC 61960-4 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, in cooperation with ISO technical committee 114: Horology. It is an International Standard.

This second edition cancels and replaces the first edition published in 2020. This edition constitutes a technical revision.

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

a) added an annex to standardize requirements for secondary lithium watch batteries;
b) added new chemistries;
c) added a table to standardize dimensions and size codes for secondary lithium watch batteries;
d) modified marking requirements.

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

Draft	Report on voting
21A/880/FDIS	21A/892/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

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 in the IEC 61960 series, published under the general title *Secondary cells and batteries containing alkaline or other non-acid electrolytes – Secondary lithium cells and batteries for portable applications*, can be found on the IEC website.

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SECONDARY CELLS AND BATTERIES CONTAINING ALKALINE OR OTHER NON-ACID ELECTROLYTES – SECONDARY LITHIUM CELLS AND BATTERIES FOR PORTABLE APPLICATIONS –

Part 4: Coin secondary lithium cells, and batteries made from them

1 Scope

This part of IEC 61960 specifies performance tests, designations, markings, dimensions and other requirements for coin secondary lithium cells and batteries for portable applications, watches, and backup power supply such as memory backup applications. In particular, watch-specific requirements are specified in Annex A. 1

This document provides purchasers and users of coin secondary lithium cells and batteries with a set of criteria with which they can assess the performance of coin secondary lithium cells and batteries offered by various manufacturers.

This document defines a minimum required level of performance and a standardized methodology by which testing is performed and the results of this testing are reported to the user. Hence, users will be able to establish the viability of commercially available cells and batteries via the declared specification and thus be able to select the cell or battery best suited for their intended application.

This document covers coin secondary lithium cells and batteries with a range of chemistries. Each electrochemical couple has a characteristic voltage range over which, during discharge, it releases its electrical capacity, a characteristic nominal voltage and a characteristic end-of-discharge voltage. Users of coin secondary lithium cells and batteries are requested to consult the manufacturer for advice.

This document also provides guidelines for designers of equipment using lithium batteries (see Annex B).

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 60086-4:2019, *Primary batteries – Part 4: Safety of lithium batteries*

IEC 62133-2:2017, *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/AMD1:2021

IEC 61960-4

Edition 2.0 2024-07

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Secondary cells and batteries containing alkaline or other non-acid electrolytes – Secondary lithium cells and batteries for portable applications – Part 4: Coin secondary lithium cells, and batteries made from them

Accumulateurs alcalins et autres accumulateurs à électrolyte non acide – Accumulateurs au lithium pour applications portables – Partie 4: Éléments et batteries d'accumulateurs boutons au lithium



IEC 61960-4:2024-07(en-fr)

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COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE

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ACCUMULATEURS ALCALINS ET AUTRES ACCUMULATEURS À ÉLECTROLYTE NON ACIDE – ACCUMULATEURS AU LITHIUM POUR APPLICATIONS PORTABLES –

Partie 4: Éléments et batteries d'accumulateurs boutons au lithium

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L'IEC 61960-4 a été établie par le sous-comité 21A: Accumulateurs alcalins et autres accumulateurs à électrolyte non acide, du comité d'études 21 de l'IEC: Accumulateurs, en coopération avec le comité d'études 114 de l'ISO: Horlogerie. Il s'agit d'une norme internationale.

Cette deuxième édition annule et remplace la première édition parue en 2020. Cette édition constitue une révision technique.

Cette édition inclut les modifications techniques majeures suivantes par rapport à l'édition précédente:

a) ajout d'une annexe pour normaliser les exigences des batteries d'accumulateurs au lithium pour montres;
b) ajout de nouvelles compositions chimiques;
c) ajout d'un tableau pour normaliser les dimensions et le codage de la taille des batteries d'accumulateurs au lithium pour montres;
d) modification des exigences de marquage.

Le texte de cette Norme internationale est issu des documents suivants:

Projet	Rapport de vote
21A/880/FDIS	21A/892/RVD

Le rapport de vote indiqué dans le tableau ci-dessus donne toute information sur le vote ayant abouti à son approbation.

La langue employée pour l'élaboration de cette Norme internationale est l'anglais.

Ce document a été rédigé selon les Directives ISO/IEC, Partie 2, il a été développé selon les Directives ISO/IEC, Partie 1 et les Directives ISO/IEC, Supplément IEC, disponibles sous www.iec.ch/members_experts/refdocs. Les principaux types de documents développés par l'IEC sont décrits plus en détail sous www.iec.ch/publications.

Une liste de toutes les parties de la série IEC 61960, publiées sous le titre général *Accumulateurs alcalins et autres accumulateurs à électrolyte non acide – Accumulateurs au lithium pour applications portables*, se trouve sur le site web de l'IEC.

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ACCUMULATEURS ALCALINS ET AUTRES ACCUMULATEURS À ÉLECTROLYTE NON ACIDE – ACCUMULATEURS AU LITHIUM POUR APPLICATIONS PORTABLES –

Partie 4: Éléments et batteries d'accumulateurs boutons au lithium

1 Domaine d'application

La présente partie de l'IEC 61960 spécifie les essais de performance, les désignations, les marquages, les dimensions et autres exigences pour les éléments et batteries d'accumulateurs boutons au lithium destinés aux montres, aux applications portables et d'alimentation de secours telles que les applications de sauvegarde de mémoire. Les exigences propres aux montres, en particulier, sont spécifiées dans l'Annexe A.

Le présent document fournit aux acheteurs et aux utilisateurs d'éléments et batteries d'accumulateurs boutons au lithium un ensemble de critères au moyen desquels ils peuvent évaluer les performances des différents accumulateurs de ce type proposés par différents fabricants.

Le présent document définit un niveau d'exigence minimale de performance et une méthodologie normalisée par laquelle sont réalisés les essais dont les résultats sont mis à la disposition de l'utilisateur. Les utilisateurs sont alors en mesure d'apprécier par eux-mêmes la viabilité des accumulateurs disponibles dans le commerce au moyen de la spécification déclarée et donc de sélectionner l'élément ou la batterie le ou la mieux adaptée à l'application prévue.

Le présent document couvre les éléments et batteries d'accumulateurs boutons au lithium dans une large gamme de compositions chimiques. Chaque couple électrochimique possède une plage de tension caractéristique dans laquelle il restitue, en décharge, sa capacité emmagasinée, une tension nominale caractéristique et une tension de fin de décharge caractéristique. Il est demandé aux utilisateurs d'éléments et batteries d'accumulateurs boutons au lithium de prendre conseil auprès du fabricant.

Le présent document fournit également des lignes directrices pour les concepteurs d'équipements utilisant des batteries au lithium (voir l'Annexe B).

2 Références normatives

Les documents suivants sont cités dans le texte de sorte qu'ils constituent, pour tout ou partie de leur contenu, des exigences du présent document. Pour les références datées, seule l'édition citée s'applique. Pour les références non datées, la dernière édition du document de référence s'applique (y compris les éventuels amendements).

IEC 60050-482, *Vocabulaire Électrotechnique International (IEV) – Partie 482: Piles et accumulateurs électriques*

IEC 60086-4:2019, *Piles électriques – Partie 4: Sécurité des piles au lithium*

IEC 62133-2:2017, *Accumulateurs alcalins et autres accumulateurs à électrolyte non acide – Exigences de sécurité pour les accumulateurs portables étanches, et pour les batteries qui en sont constituées, destinés à l'utilisation dans des applications portables – Partie 2: Systèmes au lithium*
IEC 62133-2:2017/AMD1:2021