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Edition 2.0 2022-05
COMMENTED VERSION

INTERNATIONAL STANDARD

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Secondary cells and batteries containing alkaline or other non-acid electrolytes – Safety requirements for secondary lithium cells and batteries, for use in industrial applications

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

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SECONDARY CELLS AND BATTERIES CONTAINING ALKALINE OR OTHER NON-ACID ELECTROLYTES – SAFETY REQUIREMENTS FOR SECONDARY LITHIUM CELLS AND BATTERIES, FOR USE IN INDUSTRIAL APPLICATIONS

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.
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This commented version (CMV) of the official standard IEC 62619:2022 edition 2.0 allows the user to identify the changes made to the previous IEC 62619:2017 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.

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This second edition cancels and replaces the first edition published in 2017. This edition constitutes a technical revision.

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

a) new requirements for moving parts;
b) addition of requirements for hazardous live parts;
c) addition of requirements for battery system design;
d) new requirements for system lock;
e) new requirements for EMC;
f) addition of procedure of propagation test by laser.

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

Draft	Report on voting
21A/785/FDIS	21A/787/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/standardsdev/publications.

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1 Scope

This document specifies requirements and tests for the safe operation of secondary lithium cells and batteries used in industrial applications, including stationary applications.

When there exists an IEC International Standard specifying test conditions and requirements for cells used in special applications and which is in conflict with this document, the former takes precedence (e.g., IEC 62660 series on road vehicles).

The following are some examples of applications that utilize cells and batteries under the scope of this document:

- Stationary applications: telecom, uninterruptible power supplies (UPS), electrical energy storage system, utility switching, emergency power, and similar applications.
- Motive applications: forklift truck, golf cart, automated guided vehicle (AGV), railway vehicles, and marine vehicles, with the exception of road vehicles. 1

Since this document covers batteries for various industrial applications, it includes those requirements which are common and minimum to the various applications.

Electrical safety is included only as a part of the risk analysis of Clause 8. In regard to details for addressing electrical safety, the end use application standard requirements ~~have~~ need to be considered.

This document applies to cells and batteries. If the battery is divided into smaller units, the smaller unit can be tested as the representative of the battery. The manufacturer clearly declares the tested unit. The manufacturer ~~may~~ can add functions, which are present in the final battery to the tested unit.

This document addresses first life cells and batteries. Reuse, repurpose, second life use or similar are not taken into consideration by this document. 2

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 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*~~

IEC 62133-2:2017, *Secondary cells and batteries containing alkaline or other non-acid electrolytes – Safety requirements for portable sealed secondary lithium cells, and for batteries made from them, for use in portable applications – Part 2: Lithium systems*

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IEC 62620:2014, *Secondary cells and batteries containing alkaline or other non-acid electrolytes – Secondary lithium cells and batteries for use in industrial applications*

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

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Edition 2.0 2022-05

INTERNATIONAL STANDARD

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Accumulateurs alcalins et autres accumulateurs à électrolyte non acide – Exigences de sécurité pour les accumulateurs au lithium pour utilisation dans des applications industrielles



IEC 62619:2022-05(en-fr)

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COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE

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ACCUMULATEURS ALCALINS ET AUTRES ACCUMULATEURS À ÉLECTROLYTE NON ACIDE – EXIGENCES DE SÉCURITÉ POUR LES ACCUMULATEURS AU LITHIUM POUR UTILISATION DANS DES APPLICATIONS INDUSTRIELLES

AVANT-PROPOS

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La Norme internationale IEC 62619 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. Il s'agit d'une Norme internationale.

Cette deuxième édition annule et remplace la première édition parue en 2017. Cette édition constitue une révision technique.

This is a preview of IEC 62619 Ed. 2.0 en:2022 CMV. Click here to purchase the full version from the ANSI store.

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

a) de nouvelles exigences pour les pièces mobiles;
b) l'ajout d'exigences pour les parties actives dangereuses;
c) l'ajout d'exigences pour la conception du système de batterie;
d) de nouvelles exigences relatives au verrouillage système;
e) de nouvelles exigences relatives à la CEM;
f) l'ajout de la procédure d'essai de propagation par laser.

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

Projet	Rapport de vote
21A/785/FDIS	21A/787/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.

Le présent 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/standardsdev/publications.

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ACCUMULATEURS ALCALINS ET AUTRES ACCUMULATEURS À ÉLECTROLYTE NON ACIDE – EXIGENCES DE SÉCURITÉ POUR LES ACCUMULATEURS AU LITHIUM POUR UTILISATION DANS DES APPLICATIONS INDUSTRIELLES

1 Domaine d'application

Le présent document spécifie les exigences et les essais pour le fonctionnement en toute sécurité des accumulateurs au lithium utilisés dans des applications industrielles, y compris les applications stationnaires.

Lorsqu'il existe une Norme internationale IEC qui spécifie des conditions d'essai et des exigences pour des éléments destinés à des applications particulières, et qui est en contradiction avec le présent document, la publication particulière est appliquée en priorité (par exemple, la série IEC 62660 sur les véhicules routiers).

Ci-après figurent des exemples d'applications qui emploient les éléments et les batteries inclus dans le domaine d'application du présent document :

- applications stationnaires: télécommunications, alimentation sans interruption (ASI), système de stockage d'énergie électrique, sélecteur de service, alimentation de secours et applications similaires;
- applications mobiles: chariot élévateur à fourche, voiturette de golf, véhicule à guidage automatique (AGV, automated guided vehicle), véhicules ferroviaires et marins, à l'exclusion des véhicules routiers.

Étant donné que le présent document couvre les batteries destinées à différentes applications industrielles, il inclut les exigences qui sont communes et minimales pour les différentes applications.

La sécurité électrique est incluse uniquement dans le cadre de l'analyse des risques de l'Article 8. Concernant les informations détaillées en matière de sécurité électrique, il est nécessaire de prendre en considération les exigences normalisées relatives à l'application finale.

Le présent document s'applique aux éléments et aux batteries. Si la batterie est divisée en unités plus petites, l'unité plus petite peut être soumise à l'essai pour représenter la batterie. Le fabricant déclare clairement l'unité soumise à l'essai. Il peut ajouter des fonctions, qui sont présentes dans la batterie finale, à l'unité soumise à l'essai.

Le présent document traite de la première vie des éléments et des batteries. La réutilisation, la réaffectation, l'utilisation dans le cadre d'une seconde vie ou d'autres utilisations similaires ne sont pas prises en considération dans le présent document.

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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 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 62620:2014, *Accumulateurs alcalins et autres accumulateurs à électrolyte non acide – Éléments et batteries d'accumulateurs au lithium pour utilisation dans les applications industrielles*

Guide ISO/IEC 51, *Aspects liés à la sécurité – Principes directeurs pour les inclure dans les normes*