

INTERNATIONAL STANDARD



**Secondary cells and batteries containing alkaline or other non-acid
electrolytes – Vented nickel-cadmium prismatic rechargeable single cells**

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**SECONDARY CELLS AND BATTERIES CONTAINING
ALKALINE OR OTHER NON-ACID ELECTROLYTES –
VENTED NICKEL-CADMIUM PRISMATIC RECHARGEABLE SINGLE CELLS****FOREWORD**

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International Standard IEC 60623 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 fifth edition cancels and replaces the fourth edition published in 2001 and constitutes a technical revision.

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

- optional characterization of cells designed for performances at very low and/or very high temperature;
- optional characterization of cells tested with CCCV charge;
- optional characterization of cells designed for rapid charge;
- optional characterization of cells designed for high cycling.

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

FDIS	Report on voting
21A/610/FDIS	21A/621/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 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

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INTRODUCTION

~~Traditionally the manufacturers and users of alkaline secondary cells and batteries have expressed the current used to charge and discharge these cells and batteries as a multiple of the capacity. For example, a current of 20 A used to charge a cell with a rated capacity (C Ah) of 100 Ah would be expressed as C/5 A or 0,2 C A. This method of current designation has been used in earlier standards relating to alkaline secondary cells and batteries.~~

~~Comments have been made, however, that this method of current designation is dimensionally incorrect, in that a multiple of the capacity (ampere hours) will be in ampere hours and not, as required for current, in amperes. As a result of these comments, the method described in IEC 61434 has been used in this standard.~~

~~In brief, the method states that the reference test current (I_t) is expressed as:~~

$$~~I_t \text{ A} = \frac{C_n \text{ Ah}}{1 \text{ h}}~~$$

~~where~~

~~C_n is the rated capacity declared by the manufacturer in ampere hours (Ah), and~~

~~n is the time base in hours (h) for which the rated capacity is declared.~~

SECONDARY CELLS AND BATTERIES CONTAINING ALKALINE OR OTHER NON-ACID ELECTROLYTES – VENTED NICKEL-CADMIUM PRISMATIC RECHARGEABLE SINGLE CELLS

~~1~~ General

1 Scope

IEC 60623 specifies marking, designation, dimensions, tests and requirements for vented nickel-cadmium prismatic secondary single cells.

NOTE In this context, "prismatic" refers to cells having rectangular sides and base.

When there exists an IEC standard specifying test conditions and requirements for cells used in special applications and which is in conflict with this document, the former ~~shall~~ takes precedence.

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*

~~IEC 60050(486), International Electrotechnical Vocabulary – Chapter 486: Secondary cells and batteries~~

~~IEC 60051 (all parts), Direct acting indicating analogue electrical measuring instruments and their accessories~~

~~IEC 60410, Sampling plans and procedures for inspection by attributes~~

IEC 60417 ~~(all parts)~~, Graphical symbols for use on equipment (available from: <http://www.graphical-symbols.info/equipment>)

~~IEC 60485, Digital electronic d.c. voltmeters and d.c. electronic analogue-to-digital converters~~

~~IEC 61438, Possible safety and health hazards in the use of alkaline secondary cells and batteries – Guide to equipment manufacturers and users~~

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Secondary cells and batteries containing alkaline or other non-acid electrolytes – Vented nickel-cadmium prismatic rechargeable single cells

Accumulateurs alcalins ou autres accumulateurs à électrolyte non acide – Éléments individuels parallélépipédiques rechargeables ouverts au nickel-cadmium

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

IEC 60417, *Graphical symbols for use on equipment* (available from: <http://www.graphical-symbols.info/equipment>)

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COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE

ACCUMULATEURS ALCALINS OU AUTRES ACCUMULATEURS À ÉLECTROLYTE NON ACIDE – ÉLÉMENTS INDIVIDUELS PARALLÉLÉPIPÉDIQUES RECHARGEABLES OUVERTS AU NICKEL-CADMIUM

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Cette cinquième édition annule et remplace la quatrième édition parue en 2001 dont elle constitue une révision technique.

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

- caractérisation facultative d'éléments conçus pour des performances à très basse et/ou très haute température;
- caractérisation facultative d'éléments soumis aux essais avec des charges CCCV;

- caractérisation facultative d'éléments conçus pour une charge rapide;
- caractérisation facultative d'éléments conçus pour des cyclages élevés.

Le texte de cette norme est issu des documents suivants:

FDIS	Rapport de vote
21A/610/FDIS	21A/621/RVD

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

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ACCUMULATEURS ALCALINS OU AUTRES ACCUMULATEURS À ÉLECTROLYTE NON ACIDE – ÉLÉMENTS INDIVIDUELS PARALLÉLÉPIPÉDIQUES RECHARGEABLES OUVERTS AU NICKEL-CADMIUM

1 Domaine d'application

L'IEC 60623 spécifie le marquage, la désignation, les dimensions, les essais et les exigences applicables aux éléments individuels parallélépipédiques rechargeables, ouverts, au nickel-cadmium.

NOTE Dans le cadre du présent document, le qualificatif "parallélépipédique" se réfère aux éléments possédant des faces et une base rectangulaires.

En cas d'existence d'une norme IEC spécifiant des conditions d'essai et des exigences pour des éléments destinés à des applications particulières, et qui serait en contradiction avec le présent document, la publication particulière est appliquée en priorité.

2 Références normatives

Les documents suivants cités dans le texte 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 60050-482:2004, *Vocabulaire Electrotechnique International – Partie 482: Piles et accumulateurs électriques*

IEC 60417, *Symboles graphiques utilisables sur le matériel* (disponible à l'adresse: <http://www.graphical-symbols.info/equipment>)