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



AS IEC 60623:2022

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- Australian Industry Group
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- Consumers Federation of Australia
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Preface

This Standard was prepared by the Standards Australia Committee EL-005, Secondary Batteries, to supersede AS 3731.1:1995, *Stationary batteries—Nickel-cadmium, Part 1: Vented type*.

The objective of this document is to specify marking, designation, dimensions, tests and requirements for vented nickel-cadmium prismatic secondary single cells.

In this context, “prismatic” refers to cells having rectangular sides and base.

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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

- reconfirmed,
- withdrawn,
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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.