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

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EUROPEAN STANDARD

**EN 60622**

NORME EUROPÉENNE

EUROPÄISCHE NORM

January 2003

ICS 29.220.30

Supersedes EN 60622:1995

English version

**Secondary cells and batteries containing alkaline  
or other non-acid electrolytes -  
Sealed nickel-cadmium prismatic rechargeable single cells  
(IEC 60622:2002)**

Accumulateurs alcalins et autres  
accumulateurs à électrolyte non acide -  
Éléments individuels parallélépipédiques  
rechargeables étanches au nickel-  
cadmium  
(CEI 60622:2002)

Akkumulatoren und Batterien mit  
alkalischem oder anderen  
nichtsäurehaltigen Elektrolyten -  
Gasdichte wiederaufladbare prismatische  
Nickel-Cadmium-Einzelzellen  
(IEC 60622:2002)

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This European Standard was approved by CENELEC on 2002-12-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and United Kingdom.

**CENELEC**

European Committee for Electrotechnical Standardization  
Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

**Central Secretariat: rue de Stassart 35, B - 1050 Brussels**

## Foreword

The text of document 21A/362/FDIS, future edition 3 of IEC 60622, prepared by SC 21A, Secondary cells and batteries containing alkaline or other non-acid electrolytes, of IEC TC 21, Secondary cells and batteries, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60622 on 2002-12-01.

This European Standard supersedes EN 60622:1995.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2003-09-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2005-12-01

Annexes designated "normative" are part of the body of the standard.

In this standard, annex ZA is normative.

Annex ZA has been added by CENELEC.

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## iTeh STANDARD PREVIEW

### Endorsement notice

The text of the International Standard IEC 60622:2002 was approved by CENELEC as a European Standard without any modification.

In the official version for Bibliography, the following note has to be added for the standard indicated:

IEC 61434      NOTE      Harmonized as EN 61434:1996 (not modified).

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## Annex ZA (normative)

### Normative references to international publications with their corresponding European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60050-486	- <sup>1)</sup>	International Electrotechnical Vocabulary (IEV) Chapter 486: Secondary cells and batteries	-	-
IEC 60051	Series	Direct acting indicating analogue electrical measuring instruments and their accessories	EN 60051	Series
IEC 60410	- <sup>1)</sup>	Sampling plans and procedures for inspection by attributes	-	-
IEC 60417	Series	Graphical symbols for use on equipment	EN 60417	Series
IEC 60485	- <sup>1)</sup>	Digital electronic d.c. voltmeters and d.c. electronic analogue-to-digital converters	-	-
IEC 61438	- <sup>1)</sup>	Possible safety and health hazards in the use of alkaline secondary cells and batteries - Guide to equipment manufacturers and users	-	-

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<sup>1)</sup> Undated reference.

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à électrolyte non acide –  
Eléments individuels parallélépipédiques  
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Commission Electrotechnique Internationale  
International Electrotechnical Commission  
Международная Электротехническая Комиссия

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

## FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the 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, the IEC publishes International Standards. 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. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of the IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested National Committees.
- 3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical specifications, technical reports or guides and they are accepted by the National Committees in that sense.
- 4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.
- 5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.
- 6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 60622 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 third edition cancels and replaces the second edition published in 1988, amendment 1 (1989) and amendment 2 (1992). This third edition constitutes a technical revision.

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

FDIS	Report on voting
21A/362/FDIS	21A/370/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 3.

The committee has decided that the contents of this publication will remain unchanged until 2008-01. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

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

## 1 General

### 1.1 Scope

This International standard specifies marking, tests and requirements for sealed nickel-cadmium prismatic secondary single cells.

NOTE In this context “prismatic” refers to cells having rectangular sides and bases.

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

### 1.2 Normative references

The following referenced documents are indispensable for the application 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 60050-486, *International Electrotechnical Vocabulary – Chapter 486: Secondary cells and batteries*.

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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*.

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*.

### 1.3 Terms and definitions

For the purpose of this International Standard, the definitions contained in IEC 60050-486 and the following apply.

#### 1.3.1 sealed cell

cell which remains closed and does not release either gas or liquid when operated within the limits of charge and temperature specified by the manufacturer. The cell is equipped with a safety device to prevent dangerously high internal pressure. The cell does not require addition to the electrolyte and is designed to operate during its life in its original sealed state

### 1.3.2

#### **nominal voltage**

the nominal voltage of a sealed nickel-cadmium rechargeable single cell is 1,2 V

### 1.3.3

#### **rated capacity**

quantity of electricity  $C_5$  Ah (ampere-hours) declared by the manufacturer which a single cell can deliver when discharged at the reference test current of  $0,2 I_t$  A to a final voltage of 1,0 V at +20 °C after charging, storing and discharging under the conditions specified in clause 4

## 1.4 Parameter measurement tolerances

The overall accuracy of controlled or measured values, relative to the specified or actual values, shall be within these tolerances:

- a)  $\pm 1 \%$  for voltage;
- b)  $\pm 1 \%$  for current;
- c)  $\pm 2 \text{ }^\circ\text{C}$  for temperature;
- d)  $\pm 0,1 \%$  for time;
- e)  $\pm 1 \%$  for capacity.

These tolerances comprise the combined accuracy of the measuring instruments, the measurement techniques used, and all other sources of error in the test procedure.

For assistance in selecting instrumentation see IEC 60051 for analogue instruments and IEC 60485 for digital instruments. The details of the instrumentation used shall be provided in any report of results.

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## 2 Designation and marking

### 2.1 Cell designation

Sealed nickel-cadmium prismatic secondary single cells shall be designated by the letters "KC" followed by a third letter L, M, H or X which signifies:

- low rate of discharge (L);
- medium rate of discharge (M);
- high rate of discharge (H);
- very high rate of discharge (X).

NOTE These types of cells are typically but not exclusively used for the following discharge rates

- L up to  $0,5 I_t$  A,
- M up to  $3,5 I_t$  A,
- H up to  $7,0 I_t$  A,
- X up to and above  $7,0 I_t$  A.