

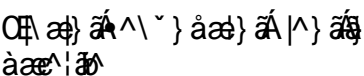
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**Sealed nickel-cadmium button rechargeable single cells**

Sealed nickel-cadmium button rechargeable single cells

Gasdichte wiederaufladbare einzelne Nickel-Cadmium-Knopfzellen

Éléments individuels boutons rechargeables, étanches, au nickel-cadmium

**Ta slovenski standard je istoveten z: HD 561 S1:1991**[SIST HD 561 S1:1997](https://standards.iteh.ai/catalog/standards/sist/7ae9e4a6-a7fe-47ea-8216-41ffd2a4911f/sist-hd-561-s1-1997)<https://standards.iteh.ai/catalog/standards/sist/7ae9e4a6-a7fe-47ea-8216-41ffd2a4911f/sist-hd-561-s1-1997>**ICS:**29.220.30  Alkaline secondary cells and batteries**SIST HD 561 S1:1997****en**

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HARMONIZATION DOCUMENT

HD 561 S1

DOCUMENT D'HARMONISATION

HARMONISIERUNGSDOKUMENT

February 1991

UDC 621.355.82:620.1

Descriptors: -

## ENGLISH VERSION

SEALED NICKEL-CADMIUM BUTTON RECHARGEABLE  
SINGLE CELLS  
(IEC 509:1988)

Éléments individuels boutons  
rechargeables, étanches, au  
nickel-cadmium  
(CEI 509:1988)

Wiederaufladbare gasdichte  
Nickel-Cadmium-Knopfzellen  
(IEC 509:1988)

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This Harmonization Document was approved by CENELEC on 1990-05-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for implementation of this Harmonization Document on a national level.

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

This Harmonization Document exists in three official versions (English, French, German).

CENELEC members are the national electrotechnical committees of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, 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

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Ref. No. HD 561 S1:1991 E

FOREWORD

The CENELEC questionnaire procedure, performed for finding out whether or not the International Standard IEC 509:1988 could be accepted without textual changes, has shown that no CENELEC common modifications were necessary for the acceptance as Harmonization Document.

The reference document was submitted to the CENELEC members for formal vote and was approved by CENELEC as HD 561 S1 on 1 May 1990.

The following dates were fixed:

- latest date of announcement  
of the HD at national level (doa) 1990-12-15
- latest date of publication of  
a harmonized national standard (dop) 1991-06-15
- latest date of withdrawal of  
conflicting national standards (dow) 1991-06-15

For products which have complied with the relevant national standard before 1991-06-15, as shown by the manufacturer or by a certification body, this previous standard may continue to apply for production until 1996-06-15.

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ENDORSEMENT NOTICE

The text of the International Standard IEC 561 S1:1988 was approved by CENELEC as a Harmonization Document without any modification.

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# NORME INTERNATIONALE INTERNATIONAL STANDARD

CEI  
IEC  
509

Deuxième édition  
Second edition  
1988



Commission Electrotechnique Internationale  
International Electrotechnical Commission  
Международная Электротехническая Комиссия

**Éléments individuels boutons rechargeables,  
étanches, au nickel-cadmium**

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**Sealed nickel-cadmium button rechargeable  
single cells**

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

SEALED NICKEL-CADMIUM BUTTON RECHARGEABLE  
SINGLE CELLS

## FOREWORD

- 1) The formal decisions or agreements of the IEC on technical matters, prepared by Technical Committees on which all the National Committees having a special interest therein are represented, express, as nearly as possible, an international consensus of opinion on the subjects dealt with.
- 2) They have the form of recommendations for international use and they are accepted by the National Committees in that sense.
- 3) In order to promote international unification, the IEC expresses the wish that all National Committees should adopt the text of the IEC recommendation for their national rules in so far as national conditions will permit. Any divergence between the IEC recommendation and the corresponding national rules should, as far as possible, be clearly indicated in the latter.
- 4) The IEC has not laid down any procedure concerning marking as an indication of approval and has no responsibility when an item of equipment is declared to comply with one of its recommendations.

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## PREFACE

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This standard has been prepared by Sub-Committee 21A: Alkaline secondary cells and batteries, of IEC Technical Committee No. 21: Secondary cells and batteries.

This second edition of IEC Publication 509 replaces the first edition issued in 1976.

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

Six Months' Rule	Report on Voting	Two Months' Procedure	Report on Voting
21A(CO)46	21A(CO)50	21A(CO)51	21A(CO)54

Full information on the voting for the approval of this standard can be found in the Voting Reports indicated in the above table.

The following IEC publications are quoted in this standard:

Publications Nos. 51: Direct acting indicating analogue electrical measuring instruments and their accessories.

68-2-29 (1987): Environmental testing, Part 2: Tests — Test Eb and guidance: Bump.

410 (1973): Sampling plans and procedures for inspection by attributes.

485 (1974): Digital electronic d.c. voltmeters and d.c. electronic analogue-to-digital converters.

## SEALED NICKEL-CADMIUM BUTTON RECHARGEABLE SINGLE CELLS

### SECTION ONE -- GENERAL

#### 1.1 Scope

This standard specifies tests and requirements for sealed nickel-cadmium button rechargeable single cells, suitable for use in any position.

#### 1.2 Definitions

For the purpose of this standard, the following definitions apply:

##### 1.2.1 *Button cell*

Cell of circular cross-section in which the overall height is less than the diameter.

##### 1.2.2 *Sealed cell*

A 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 may be 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.

Users of cells not equipped with a safety device should ensure that suitable containment against a possible explosive disruption of the cells is provided. The cell manufacturer shall provide information accordingly to the user.

##### 1.2.3 *Nominal voltage*

The nominal voltage of a single sealed nickel-cadmium rechargeable cell is 1.2 V.

##### 1.2.4 *Rated capacity*

The quantity of electricity  $C_5$  in Ah (ampere hours), declared by the manufacturer, which a single cell can deliver at the 5 h discharge rate to a final voltage of 1.0 V at + 20 °C after charging, storing and discharging under the conditions specified in Section Four.

#### 1.3 Measuring instruments

The measuring instruments used for the tests shall be selected to meet the magnitude of the parameters to be measured. Equipment shall be regularly calibrated to ensure that it shall at all times have the degree of accuracy given below.

##### 1.3.1 *Voltage measurement*

The instruments used for voltage measurement shall be voltmeters having an accuracy class of 0.5 or better, as defined in IEC Publication 51 for analogue instruments and IEC Publication 485 for digital instruments.



The resistance of voltmeters shall be at least 10 000  $\Omega/V$ .

### 1.3.2 Current measurement

The instruments used for current measurement shall be ammeters having an accuracy class of 0.5 or better as defined in IEC Publication 51 for analogue instruments. Digital instruments shall be of the same accuracy. This accuracy class shall be maintained for the assembly of ammeter, shunt and leads.

### 1.3.3 Temperature measurement

The instruments used for temperature measurement shall be thermometers having a graduated or digital scale in which the value of each graduation or digit is not in excess of one degree Celsius.

The absolute accuracy of the instrument shall be at least 0.5 °C.

### 1.3.4 Time measurement

Time measurement shall be to an accuracy of 0.1% or better.

## SECTION TWO — DESIGNATION AND MARKING

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### 2.1 Cell designation

Sealed nickel-cadmium button rechargeable single cells shall be designated by the letters "KB" followed by a letter L, M or H which signifies whether the cell is designed for low (L), medium (M), or high (H) rates of discharge, followed by two groups of figures separated by a solidus.

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The three figures to the left of the solidus shall indicate the maximum diameter specified for the cell, expressed in tenths of millimetres.

The three figures to the right of the solidus shall indicate the maximum height specified for the cell, expressed in tenths of millimetres.

For example: KBL 116/055.

### 2.2 Cell termination

This standard does not specify terminations for sealed nickel-cadmium rechargeable button cells.

### 2.3 Marking

Except when otherwise required by the purchaser, each cell shall carry durable markings giving the following minimum information:

- Type of cell (manufacturer's designation or cell designation as specified in Clause 2.1)
- Polarity
- Date of manufacture (year and quarter or greater precision)
- Name or identification of manufacturer or supplier.