

Primarne baterije – 5. del: Varnost baterij z vodnim elektrolitom (IEC 60086-5:2005)

Primary batteries – Part 5: Safety of batteries with aqueous electrolyte (IEC 60086-5:2005)

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EUROPEAN STANDARD

EN 60086-5

NORME EUROPÉENNE

EUROPÄISCHE NORM

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English version

Primary batteries
Part 5: Safety of batteries with aqueous electrolyte
(IEC 60086-5:2005)

Piles électriques
Partie 5: Sécurité des piles
à électrolyte aqueux
(CEI 60086-5:2005)

Primärbatterien
Teil 5: Sicherheit von Batterien
mit wässrigem Elektrolyt
(IEC 60086-5:2005)

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This European Standard was approved by CENELEC on 2005-04-01. 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, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, 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 35/1225/FDIS, future edition 2 of IEC 60086-5, prepared by IEC TC 35, Primary cells and batteries, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60086-5 on 2005-04-01.

This European Standard supersedes EN 60086-5:2000.

It is the result of a reformatting initiative aimed at making it more user-friendly, less ambiguous and, from a cross-reference point of view, fully harmonized with other parts of EN 60086. In addition, and from a safety perspective, the standard contains further guidance for appliance designers with respect to battery compartment design together with information regarding packaging, handling, warehousing and transportation.

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) 2006-02-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2008-04-01

Annex ZA has been added by CENELEC.

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Endorsement notice

The text of the International Standard IEC 60086-5:2005 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60086-3	NOTE	Harmonized as EN 60086-3:2005 (not modified).
IEC 60086-4	NOTE	Harmonized as EN 60086-4:2000 (not modified).
IEC 60068-2-6	NOTE	Harmonized as EN 60068-2-6:1995 (not modified).
IEC 60068-2-27	NOTE	Harmonized as EN 60068-2-27:1993 (not modified).
IEC 60068-2-32	NOTE	Harmonized as EN 60068-2-32:1993 (not modified).

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

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.

NOTE Where 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 60050-482	2004	International Electrotechnical Vocabulary Part 482: Primary and secondary cells and batteries	-	-
IEC 60086-1	2000	Primary batteries Part 1: General	EN 60086-1	2001
IEC 60086-2	2000	Part 2: Physical and electrical specifications	EN 60086-2	2001

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60086-5

Deuxième édition
Second edition
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Piles électriques –

**Partie 5:
Sécurité des piles à électrolyte aqueux**

iTeh STANDARD PREVIEW

**Primary batteries –
(standards.iteh.ai)**

**Part 5:
Safety of batteries with aqueous electrolyte**

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International Electrotechnical Commission
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INTERNATIONAL ELECTROTECHNICAL COMMISSION

PRIMARY BATTERIES –

Part 5: Safety of batteries with aqueous electrolyte

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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International Standard IEC 60086-5 has been prepared by IEC technical committee 35: Primary cells and batteries.

This second edition cancels and replaces the first edition published in 2000, and constitutes a technical revision. It is the result of a reformatting initiative aimed at making it more user-friendly, less ambiguous and, from a cross-reference point of view, fully harmonized with other parts of IEC 60086. In addition, and from a safety perspective, the standard contains further guidance for appliance designers with respect to battery compartment design together with information regarding packaging, handling, warehousing and transportation.

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

FDIS	Report on voting
35/1225/FDIS	35/1228/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.

IEC 60086 consists of the following parts, under the general title *Primary batteries*:

Part 1: General

Part 2: Physical and electrical specifications

Part 3: Watch batteries

Part 4: Safety of lithium batteries

Part 5: Safety of batteries with aqueous electrolyte

The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

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

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INTRODUCTION

The concept of safety is closely related to safeguarding the integrity of people and property. This part of IEC 60086 specifies requirements and tests for primary batteries with aqueous electrolyte and has been prepared in accordance with ISO/IEC guidelines, taking into account all relevant national and international standards which apply. Also included in this standard is guidance for appliance designers with respect to battery compartments and information regarding packaging, handling, warehousing and transportation.

Safety is a balance between freedom from risks of harm and other demands to be met by the product. There can be no absolute safety. Even at the highest level of safety, the product can only be relatively safe. In this respect, decision-making is based on risk evaluation and safety judgement.

As safety will pose different problems, it is impossible to provide a set of precise provisions and recommendations that will apply in every case. However, this standard, when followed on a judicious "use when applicable" basis, will provide reasonably consistent standards for safety.

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PRIMARY BATTERIES –

Part 5: Safety of batteries with aqueous electrolyte

1 Scope

This part of IEC 60086 specifies tests and requirements for primary batteries with aqueous electrolyte to ensure their safe operation under intended use and reasonably foreseeable misuse.

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

IEC 60086-1:2000, *Primary batteries – Part 1: General*

IEC 60086-2:2000, *Primary batteries – Part 2: Physical and electrical specifications*

3 Terms and definitions

[SIST EN 60086-5:2005
https://standards.iteh.ai/catalog/standards/sist/786c750f-993b-44c7-bf3c-efc5b7da29ba/sist-en-60086-5-2005](https://standards.iteh.ai/catalog/standards/sist/786c750f-993b-44c7-bf3c-efc5b7da29ba/sist-en-60086-5-2005)

For the purposes of this document, the definitions given in IEC 60050-482 and IEC 60086-1 (some of which are repeated below for convenience) apply, together with the following definitions.

3.1

battery (primary)

one or more primary cells, including case, terminals and marking

3.2

button battery

small round battery, where the overall height is less than the diameter; batteries complying with Figures 2, 3 and 4 of IEC 60086-2

3.3

cell (primary)

source of electrical energy obtained by the direct conversion of chemical energy that is not designed to be charged by any other electrical source

3.4

cylindrical battery

primary battery with cylindrical geometry where the overall height is equal to or greater than the diameter; batteries complying with Figures 1a and 1b of IEC 60086-2