SLOVENSKI STANDARD
SIST EN 60086-5:2011

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Primarne baterije - 5. del: Varnost baterij z vodnim elektrolitom (IEC 60086-5:2011)

Primary batteries - Part 5: Safety of batteries with aqueous electrolyte (IEC 60086-5:2011)

Primärbatterien - Teil 5: Sicherheit von Batterien mit wässrigem Elektrolyt (IEC 60086-5:2011)

Piles électriques - Partie 5: Sécurité des piles à électrolyte aqueux (CEI 60086-5:2011)

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Primary batteries -
Part 5: Safety of batteries with aqueous electrolyte
(IEC 60086-5:2011)

Piles électriques -
Partie 5: Sécurité des piles à électrolyte aqueux
(CEI 60086-5:2011)

Primärbatterien -
Teil 5: Sicherheit von Batterien mit wässrigem Elektrolyt
(IEC 60086-5:2011)

This European Standard was approved by CENELEC on 2011-04-12. 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, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

CENELEC

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

Management Centre: Avenue Marnix 17, B - 1000 Brussels

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Foreword

The text of document 35/1273/CDV, future edition 3 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 2011-04-12.

This European Standard supersedes EN 60086-5:2005.

The major technical changes with respect to EN 60086-5:2005 are the test requirements and the harmonization of the marking clause with the other standards of the EN 60086 series. Moreover, the table of safety pictograms was added as Annex C.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN and CENELEC shall not be held responsible for identifying any or all such patent rights.

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)	2012-01-12
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2014-04-12

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 60086-5:2011 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.
IEC 60086-4	NOTE	Harmonized as EN 60086-4.

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

Publication	Year	Title	EN/HD	Year
IEC 60068-2-6	-	Environmental testing - Part 2-6: Tests - Test Fc: Vibration (sinusoidal)	EN 60068-2-6	-
IEC 60068-2-27	-	Environmental testing - Part 2-27: Tests - Test Ea and guidance: Shock	EN 60068-2-27	-
IEC 60068-2-31	-	Environmental testing - Part 2-31: Tests - Test Ec: Rough handling shocks, primarily for equipment-type specimens	EN 60068-2-31	-
IEC 60086-1	2011	Primary batteries - Part 1: General	EN 60086-1	2011
IEC 60086-2	2011	Primary batteries - Part 2: Physical and electrical specifications	EN 60086-2	2011

IEC 60086-5

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INTERNATIONAL STANDARD

NORME INTERNATIONALE

Primary batteries –
Part 5: Safety of batteries with aqueous electrolyte

Piles électriques –
Partie 5: Sécurité des piles à électrolyte aqueux

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

PRIMARY BATTERIES –

Part 5: Safety of batteries with aqueous electrolyte

FOREWORD

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

This third edition cancels and replaces the second edition (2005) and constitutes a technical revision.

The major technical changes with respect to the previous edition are the test requirements and the harmonization of the marking clause with the other standards of the IEC 60086 series. Moreover, the table of safety pictograms was added as Annex C.

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

CDV	Report on voting
35/1273/CDV	35/1276/RVC

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.

A list of all parts in the IEC 60086 series, under the general title *Primary batteries*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability 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.

INTRODUCTION

The concept of safety is closely related to safeguarding the integrity of people and property. This part of IEC 60086 specifies tests and requirements 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.

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 60086-1:2011, *Primary batteries – Part 1: General*

IEC 60086-2:2011, *Primary batteries – Part 2: Physical and electrical specifications*

IEC 60068-2-6, *Environmental testing – Part 2-6: Tests – Test Fc : Vibrations (sinusoidal)*

IEC 60068-2-27, *Environmental testing – Part 2-27: Tests – Test Ea and guidance: Shock*

IEC 60068-2-31, *Environmental testing – Part 2-31: Tests – Test Ec: Rough handling shocks, primarily for equipment-type specimens*

3 Terms and definitions

For the purpose of this document, the terms and definitions given in IEC 60086-1 as well as the following terms and definitions apply.

3.1
battery
one or more cells electrically connected by permanent means, fitted in a case, with terminals, markings and protective devices etc, as necessary for use

[IEC 60050-482: 2004, 482-01-04, modified]

3.2
button battery
small round battery, where the overall height is less than the diameter; batteries complying with Figures 3 and 4 of IEC 60086-2

3.3
cell
basic functional unit, consisting of an assembly of electrodes, electrolyte, container, terminals and usually separators that is a source of electric energy obtained by direct conversion of chemical energy

[IEC 60050-482: 2004, 482-01-01]