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## Primärbatterier – Del 5: Säkerhet beträffande batterier med vattenhaltig elektrolyt

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

Som svensk standard gäller europastandarden EN IEC 60086-5:2021. Den svenska standarden innehåller den officiella engelska språkversionen av EN IEC 60086-5:2021.

### Nationellt förord

Europastandarden EN IEC 60086-5:2021

består av:

- **europastandardens ikraftsättningsdokument**, utarbetat inom CENELEC
- **IEC 60086-5, Fifth edition, 2021 - Primary batteries - Part 5: Safety of batteries with aqueous electrolyte**

utarbetad inom International Electrotechnical Commission, IEC.

Tidigare fastställd svensk standard SS-EN 60086-5, utgåva 4, 2017, gäller ej fr o m 2024-11-04.

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English Version

**Primary batteries - Part 5: Safety of batteries with aqueous  
electrolyte  
(IEC 60086-5:2021)**

Piles électriques - Partie 5: Sécurité des piles à électrolyte  
aqueux  
(IEC 60086-5:2021)

Primärbatterien - Teil 5: Sicherheit von Batterien mit  
wässrigem Elektrolyt  
(IEC 60086-5:2021)

This European Standard was approved by CENELEC on 2021-11-04. 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.

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

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

## **European foreword**

The text of document 35/1471/FDIS, future edition 5 of IEC 60086-5, prepared by IEC/TC 35 "Primary cells and batteries" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 60086-5:2021.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2022-08-04
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2024-11-04

This document supersedes EN 60086-5:2016 and all of its amendments and corrigenda (if any).

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Any feedback and questions on this document should be directed to the users' national committee. A complete listing of these bodies can be found on the CENELEC website.

### **Endorsement notice**

The text of the International Standard IEC 60086-5:2021 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 60068-2-27 NOTE Harmonized as EN 60068-2-27

IEC 60068-2-6 NOTE Harmonized as EN 60068-2-6

IEC 60068-2-31 NOTE Harmonized as EN 60068-2-31

ISO 7010:2019 NOTE Harmonized as EN ISO 7010:2020 (not modified)

IEC 60086-3 NOTE Harmonized as EN IEC 60086-3

IEC 60086-4 NOTE Harmonized as EN IEC 60086-4

## Annex ZA (normative)

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

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: [www.cenelec.eu](http://www.cenelec.eu).

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60086-1	2015	Primary batteries - Part 1: General	EN 60086-1	2015
IEC 60086-2	2015	Primary batteries - Part 2: Physical and electrical specifications	EN 60086-2	2016

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE



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

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

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

This fifth edition cancels and replaces the fourth edition published in 2016. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) revised information for safety dealing with keeping batteries out of the reach of children;
- b) removal of the method to determine the insulation resistance;
- c) changes to the test matrix;
- d) revision of the over-discharge test;
- e) revised definition and note for "button cell" or "button battery" in 3.2;
- f) revised method for evaluation of an explosion, moved from 3.6 to 6.2.1.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
35/1471/FDIS	35/1472/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at [www.iec.ch/members\\_experts/refdocs](http://www.iec.ch/members_experts/refdocs). The main document types developed by IEC are described in greater detail at [www.iec.ch/standardsdev/publications](http://www.iec.ch/standardsdev/publications).

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

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under [webstore.iec.ch](http://webstore.iec.ch) in the data related to the specific document. At this date, the document will be

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

NOTE The attention of National Committees is drawn to the fact that equipment manufacturers and testing organizations may need a transitional period following publication of a new, amended or revised IEC document in which to make products in accordance with the new requirements and to equip themselves for conducting new or revised tests.

It is the recommendation of the committee that the content of this document be adopted for implementation nationally not earlier than 2 years from the date of publication. The transitional period applies specifically to Table 7.

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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 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 document 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 document, 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 documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 60086-1:2015, *Primary batteries – Part 1: General*

IEC 60086-2:2015, *Primary batteries – Part 2: Physical and electrical specifications*