IEC 62877-1

Edition 2.0 2023-09

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

## Electrolyte and water for vented lead acid accumulators – Part 1: Requirements for electrolyte

## Electrolyte et eau pour accumulateurs plomb-acide ouverts – Partie 1: Exigences pour l'électrolyte



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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# ELECTROLYTE AND WATER FOR VENTED LEAD ACID ACCUMULATORS –

## Part 1: Requirements for electrolyte

## FOREWORD

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IEC 62877-1 has been prepared by IEC technical committee 21: Secondary cells and batteries. It is an International Standard.

This second edition cancels and replaces the first 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) Addition of the concentration values of halogens in Table 4.

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

| Draft | Report on voting |
|---|---|
| 21/1169/FDIS | 21/1172/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. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

A list of all parts of the IEC 62877 series can be found, under the general title *Electrolyte and water for vented lead acid accumulators*, 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 in the data related to the specific document. At this date, the document will be

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- withdrawn,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

# ELECTROLYTE AND WATER FOR VENTED LEAD ACID ACCUMULATORS –

# Part 1: Requirements for electrolyte

## 1 Scope

This part of IEC 62877 applies to electrolytes and their components used for filling vented lead acid batteries with dry-charged cells and for electrolyte replenishment, replacement or electrolyte density adjustment of batteries in operation. This document defines the composition, purity and properties of electrolyte, for application where specific instructions from the battery manufacturer are not available.

## 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 62877-2, *Electrolyte and water for vented lead acid accumulators – Part 2: Requirements for water*

## 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- IEC Electropedia: available at https://www.electropedia.org/
- ISO Online browsing platform: available at https://www.iso.org/obp

**3.1**
**lead dioxide lead battery**
**lead acid battery**
secondary battery with an aqueous electrolyte based on dilute sulphuric acid, a positive electrode of lead dioxide and a negative electrode of lead

[SOURCE: IEC 60050-482:2004, 482-05-01, modified – Note 1 deleted and the term "lead acid battery" added.]

**3.2**
**electrolyte**
<of a lead dioxide lead battery> dilute solution of sulphuric acid ($H_2SO_4$) in purified water

Note 1 to entry: The electrolyte is prepared by mixing concentrated sulphuric acid or sulphuric acid with high density of $d$ > 1,30 kg/l and purified water to achieve the density values specified by the battery manufacturer or specified in standards related to the type and battery design in question for a defined state of charge. Its purity meets the requirements laid down in Table 3.

Note 2 to entry: Concentrated sulphuric acid is a colourless and highly corrosive liquid with a density $d$ > 1,82 kg/l.