

Lead-acid batteries for propulsion power of lightweight vehicles - General requirements and methods of test

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English Version

**Lead-acid batteries for propulsion power of lightweight vehicles -  
General requirements and methods of test  
(IEC 63193:2020)**

Batteries au plomb pour la puissance de propulsion des  
véhicules légers - Exigences générales et méthodes d'essai  
(IEC 63193:2020)

Bleibatterien für den Antrieb von Leichtkraftfahrzeugen -  
Allgemeine Anforderungen und Prüfverfahren  
(IEC 63193:2020)

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

## European foreword

The text of document 21/1056/FDIS, future edition 1 of IEC 63193, prepared by IEC/TC 21 "Secondary cells and batteries" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 63193:2021.

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) 2021-09-23
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## 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 60695-11-4	2011	Fire hazard testing - Part 11-4: Test flames - 50 W flame - Apparatus and confirmational test method	EN 60695-11-4	2011
IEC 60695-11-10	2013	Fire hazard testing - Part 11-10: Test flames - 50 W horizontal and vertical flame test methods	EN 60695-11-10	2013
IEC/TR 61430	1997	Secondary cells and batteries - Test methods for checking the performance of devices designed for reducing explosion hazards - Lead-acid starter batteries	-	-
IEC 62902	2019	Secondary cells and batteries - Marking symbols for identification of their chemistry	EN IEC 62902	2019
ISO 1043-1	2011	Plastics - Symbols and abbreviated terms – Part 1: Basic polymers and their special characteristics	EN ISO 1043-1	2011
ISO 3864-1	2011	Graphical symbols - Safety colours and safety signs - Part 1: Design principles for safety signs and safety markings	-	-
ISO 3864-3	2012	Graphical symbols - Safety colours and safety signs - Part 3: Design principles for graphical symbols for use in safety signs	-	-
ISO 7000	-	Graphical symbols for use on equipment - Registered symbols	-	-
ISO 7010	-	Graphical symbols - Safety colours and safety signs - Registered safety signs	-	-
ISO 8608	2016	Mechanical vibration - Road surface profiles - Reporting of measured data	-	-

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

**Lead-acid batteries for propulsion power of lightweight vehicles – General requirements and methods of test**

**Batteries au plomb pour la puissance de propulsion des véhicules légers – Exigences générales et méthodes d'essai**



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Switzerland

Tel.: +41 22 919 02 11  
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# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

**Lead-acid batteries for propulsion power of lightweight vehicles – General requirements and methods of test**

**Batteries au plomb pour la puissance de propulsion des véhicules légers – Exigences générales et méthodes d'essai**

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**LEAD-ACID BATTERIES FOR PROPULSION  
POWER OF LIGHTWEIGHT VEHICLES –  
GENERAL REQUIREMENTS AND METHODS OF TEST**

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International Standard IEC 63193 has been prepared by IEC technical committee 21: Secondary cells and batteries.

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

FDIS	Report on voting
21/1056/FDIS	21/1066/RVD

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "<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.

## LEAD-ACID BATTERIES FOR PROPULSION POWER OF LIGHTWEIGHT VEHICLES – GENERAL REQUIREMENTS AND METHODS OF TEST

### 1 Scope

This document is applicable to lead-acid batteries powering electric two-wheelers (mopeds) and three-wheelers (e-rickshaws and delivery vehicles), and also to golf cars and similar light utility and multi-passenger vehicles.



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a) Electric two- and three-wheelers



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b) Electric golf car and light utility and multi-passenger vehicles

**Figure 1 – Examples of vehicles covered by this document**

Persons with a low level of technical skills as regards these vehicles and associated batteries, operate them most often in an environment with many bystanders who are unaware of the possible risks involved. The batteries have thus to be eminently reliable, consumer friendly and minimize risks of fire, explosions, electrical shocks and chemical burns.

These batteries are submitted to frequent and deep discharges with electrical power delivered to the propulsion system in short surges of high current when accelerating, followed by lower current levels when at cruising speed. The subsequent charge of the battery can also occur in areas accessible to the public.

The document specifies methods of tests tailored to batteries destined for the above-referenced types of vehicles so as to ensure satisfactory and safe battery performance in the intended application.

This document does not apply for example to lead acid cells and batteries used for:

- vehicle engine starting applications (IEC 60095 series);
- traction applications (IEC 60254 series);