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Lead-acid starter batteries -
Part 8: 12V Batteries used in automobiles for auxiliary or backup purposes

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IEC Secretariat
3, rue de Varembé
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
info@iec.ch
www.iec.ch

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Lead-acid starter batteries - Part 8: 12 V Batteries used in automobiles for auxiliary or backup purposes

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IEC 60095-8 has been prepared by IEC technical committee 21: Secondary cells and batteries. It is an International Standard.

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

Draft	Report on voting
21/1307/FDIS	21/1321/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 the parts in the IEC 60095 series, published under the general title *Lead-acid starter 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 in the data related to the specific document. At this date, the document will be

– reconfirmed,

– withdrawn, or

– revised.

INTRODUCTION

With the growth of electrified vehicles (xEV), many 12 V batteries in automobiles are not (or not regularly) used for cranking or starting engines: In battery-electric vehicles, there is no engine. In hybrid-electric vehicles, depending on powertrain topology, the electric machine can start the combustion engine utilizing power by the traction battery. Additional functionalities like the ones related to functional safety (e.g. in case of disruption of 12 V supply from the main high voltage energy system) require new test methods, particularly for power capability and charge recovery, as well as potential different ageing mechanisms related to different usage profiles. For example, the 12 V system is operated for significantly more hours per month than in a conventional car with internal combustion engine under the same driving usage, adding the on-plug time during which the traction battery is recharged, and potentially kept at standby for grid-connected storage functions.

Current production vehicles, including some internal combustion engine (ICE) start-stop vehicles, but mainly xEVs, such as hybrid electric vehicles (HEVs), plug-in hybrid electric vehicles (PHEVs) and battery electric vehicles (BEVs), already feature one or more 12 V support batteries and are expected to be equipped with such batteries as long as a 12 V power supply system forms part of the vehicle electrical system.

1 Scope

This part of IEC 60095 is applicable to lead acid batteries with a nominal voltage of 12 V, for automobile passenger cars applications, used as auxiliary energy storage and power source in vehicles, but not featuring the classical function of engine starting or cranking. This includes applications in battery-electric vehicles, as well as in vehicles with an internal combustion engine (ICE) that is started by another (12 V, 48 V or high-volt) battery. This document can be used for batteries with auxiliary or backup purposes.

This document specifies:

– the general requirements; and
– the essential functional characteristics, relevant test methods and results required for several classes of batteries in accordance with:
  - the general type of application;
  - the type of product; and
  - the categories as defined in 4.1.

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

IEC 60095-1:2018, *Lead-acid starter batteries - Part 1: General requirements and methods of test*

IEC 60095-2, *Lead-acid starter batteries - Part 2: Dimensions of batteries and dimensions and marking of terminals*

IEC 60095-6:2019, *Lead-acid starter batteries - Part 6: Batteries for micro-cycle applications*

3 Terms, definitions, abbreviated terms and symbols

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60050-482, IEC 60095-1, IEC 60095-6 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