AS 2149—1990

Australian Standard®

Starter batteries—Lead-acid

This Australian Standard was prepared by Committee EL/5, Secondary batteries. It was approved on behalf of the Council of Standards Australia on 8 June 1990 and published on 10 December 1990.

The following interests are represented on Committee EL/5:

Australian Automobile Association
Australian Automotive Aftermarket Association
Australian Electrical and Electronic Manufacturers Association
Australian Federation of Consumer Organizations
Australian Lead Development Association
Confederation of Australian Industry
Department of Defence
Electricity Supply Association of Australia
Federal Chamber of Automotive Industries
Institution of Engineers Australia
Railways of Australia Committee
Telecom Australia

Additional interests participating in preparation of Standard:

CSIRO, Division of Manufacturing Technology

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First published as AS D2-1958.
Second edition 1968.
Revised and redesignated AS 2149-1978.
Second edition 1980.
Third edition 1985.
Fourth edition 1990.

PUBLISHED BY STANDARDS AUSTRALIA
(STANDARDS ASSOCIATION OF AUSTRALIA)
1 THE CRESCENT, HOMEBUSH, NSW 2140
ISBN 0 7262 6402 4

PREFACE

This Standard was prepared by the Standards Australia Committee on Secondary Batteries to supersede AS 2149—1985, *Lead-acid starter batteries*.

The principle differences to the previous edition are —

(a) the deletion of the requirement for an explosive label in Clause 4.1. This change has been made in order to align with AS 1216, *Classification, hazard identification and information systems for dangerous goods*, and the Australian Code for the transport of dangerous goods by road and rail; and

(b) the addition of Item (e) to Clause 5.2, this change being made to make it clear that the requirements and tests of the Standard apply to new batteries.

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STANDARDS AUSTRALIA

Australian Standard
Starter batteries—Lead-acid

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE This Standard specifies requirements for lead-acid secondary batteries with a rated voltage of 6 V or 12 V, used primarily as a source of starting and ignition current for internal combustion engines and also for the auxiliary installations of internal combustion engine vehicles. These batteries are commonly called 'starter batteries' and are hereinafter referred to as 'batteries'.

This Standard does not apply to motor cycle batteries or to batteries used for other purposes such as the starting of railcar internal combustion engines or the lighting of omnibuses.

1.2 REFERENCED DOCUMENTS The following documents are referred to in this standard:

AS	
1006	Solid stem general purpose thermometers
1042	Direct-acting indicating electrical measuring instruments and their accessories
1216	Classification, hazard identification and information systems for dangerous goods
1216.1	Part 1: Classification and class labels for dangerous goods
1852	International electrotechnical vocabulary
1852(111-03)	Physics and chemistry—Concepts relating to quantities and units
2562	Hydrometers—Portable syringe-type for lead-acid batteries
2668	Water for use in secondary batteries
2669	Sulphuric acid for use in lead-acid batteries
2700	Colour standards for general purposes

1.3 DEFINITIONS For the purpose of this Standard, the definition given in AS 1852(111-03) and the following apply:

1.3.1 Charge acceptance—current which a new and unused battery can accept under specified conditions.

1.3.2 Conserved-charged battery—battery that when supplied contains only a small quantity of electrolyte, mainly absorbed within the plates and separators. The plates are in a charged condition and the battery is activated by the addition of further electrolyte.

1.3.3 Dry charged battery—battery that contains charged plates but no electrolyte, that may be activated by the addition of suitable electrolyte.

1.3.4 Fully charged battery—battery in which the density of the electrolyte corrected to 25°C, or the battery terminal voltage and current, do not vary appreciably between three consecutive hourly readings taken while the battery is being charged under conditions specified by the manufacturer.

NOTE: The reference to electrolyte density applies only to batteries that have ready access to the electrolyte.

1.3.5 Rated cold cranking current—constant current, in amperes, which a battery is capable of delivering during a continuous uniform discharge over a period of 30 s, at a temperature of -18 ± 1°C before the voltage measured across the battery terminals falls to a minimum of 1.2 V per cell.

1.3.6 Rated reserve capacity—number of minutes of battery discharge during which the battery can supply a constant current of 25 A down to an end voltage of 1.75 V per cell at 25°C. This current is based on a typical total electrical load of a vehicle such as would be carried by the battery under adverse driving conditions in the event of failure of the charging system.

1.3.7 20-h capacity—number of ampere hours a battery is capable of delivering during a continuous uniform discharge over a period of 20 h, at a current, in amperes, numerically equal to 5 percent of the 20 h capacity, from the fully charged state to when the voltage measured across the battery terminals falls to 5.25 V for a 6 V battery or to 10.50 V for a 12 V battery, and corrected for an average electrolyte temperature of 25°C. The 20-h capacity is represented by the symbol C_{20}.

1.4 CLASSIFICATION Batteries are classified on the basis of whether or not the periodic addition of water is required. The categories are as follows:

(a) Category X—batteries which under normal conditions require the periodic addition of water.

(b) Category Y—batteries which, when used in their recommended application, do not require periodic water additions under normal conditions.

NOTE: Category Y is commonly referred to as 'maintenance free'.