



UL 2054

STANDARD FOR SAFETY

Household and Commercial Batteries

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UL Standard for Safety for Household and Commercial Batteries, UL 2054

Third Edition, Dated November 17, 2021

Summary of Topics

This new edition of UL 2054 dated November 17, 2021 incorporates the following changes in requirements from the August 20, 2021 and October 15, 2021 proposals:

- ***Added general construction requirements for wiring and terminals; [6.3](#),***
- ***Made miscellaneous revisions throughout the Standard; Sections [2](#) – [5](#), [6.1.2](#) – [6.1.4](#), [6.5.1](#), [8.1](#), [8.2](#), [11.10](#), [12.13](#), [13.3](#), [14.7](#), [15.2](#), [16.6](#), Section [23](#) title, [24.1](#), Appendix A.***
- ***Clarified requirements for adhesive labels; Section [29](#), [30.1](#), [30.2](#)***
- ***Made Limited Power Source Test an optional requirement; [7.1](#)***
- ***Clarified the external resistance in the test in [11.11](#).***

The new and revised requirements are substantially in accordance with Proposal(s) on this subject dated August 20, 2021 and October 15, 2021.

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NOVEMBER 17, 2021

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UL 2054

Standard for Household and Commercial Batteries

First Edition – May, 1997
Second Edition – October, 2004

Third Edition

November 17, 2021

This UL Standard for Safety consists of the Third Edition.

Comments or proposals for revisions on any part of the Standard may be submitted to UL at any time. Proposals should be submitted via a Proposal Request in UL's On-Line Collaborative Standards Development System (CSDS) at <https://csds.ul.com>.

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INTRODUCTION

1 Scope

1.1 These requirements cover portable primary (nonrechargeable) and secondary (rechargeable) batteries for use as power sources in products. These batteries consist of either a single electrochemical cell or two or more cells connected in series, parallel, or both, that convert chemical energy into electrical energy by chemical reaction.

1.2 These requirements are intended to reduce the risk of fire or explosion when batteries are used in a product. The proper use of these batteries in a particular application is dependent on their use in a complete product that complies with the requirements applicable to such a product.

1.3 These requirements are intended to cover batteries for general use and do not include the combination of the battery and the host product which are covered by requirements in the host product standard.

1.4 These requirements are also intended to reduce the risk of injury to persons due to fire or explosion when batteries are removed from a product to be transported, stored, or discarded.

1.5 These requirements do not cover the toxicity risk that results from the ingestion of a battery or its contents, nor the risk of injury to persons that occurs if a battery is cut open to provide access to its contents.

2 Units of Measurement

2.1 Values stated without parentheses are the requirement. Values in parentheses are explanatory or approximate information.

3 Components

3.1 A component of a product covered by this Standard shall:

- a) Comply with the requirements for that component as specified in this Standard;
- b) Be used in accordance with its rating(s) established for the intended conditions of use; and
- c) Be used within its established use limitations or conditions of acceptability.

3.2 A component of a product covered by this Standard is not required to comply with a specific component requirement that:

- a) Involves a feature or characteristic not required in the application of the component in the product;
- b) Is superseded by a requirement in this standard; or
- c) Is separately investigated when forming part of another component, provided the component is used within its established ratings and limitations.

3.3 A component shall be used in accordance with its rating established for the intended conditions of use.

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3.4 Specific components are incomplete in construction features or restricted in performance capabilities. Such components are intended for use only under limited conditions, such as certain temperatures not exceeding specified limits, and shall be used only under those specific conditions.

3.5 A component that is also intended to perform other functions such as overcurrent protection, ground-fault circuit-interruption, surge suppression, any other similar functions, or any combination thereof, shall comply additionally with the requirements of the applicable UL Standard(s) that cover devices that provide those functions.

4 Referenced Publications

4.1 Any undated reference to a code or standard appearing in the requirements of this Standard shall be interpreted as referring to the latest edition of that code or standard.

4.2 The following publications are referenced in this Standard:

UL 248-14, Low-Voltage Fuses – Part 14, Supplemental Fuses

UL 746C, Polymeric Materials – Use in Electrical Equipment Evaluations

UL 796, Printed-Wiring Boards

UL 969, Marking and Labeling Systems

UL 1434, Thermistor-Type Devices

UL 1642, Lithium Batteries

UL 60691, Thermal-Links – Requirements and Application Guide

UL 60730-1, Automatic Electrical Controls – Part 1: General Requirements

5 Glossary

5.1 For the purpose of these requirements the following definitions apply.

5.2 BATTERY – General term for (1) any single cell, or (2) a group of cells connected together either in a series and/or parallel configuration. May be ready for use or may be an installed component.

NOTE: The term “battery(ies)” refers to single or multicell batteries.

5.3 BATTERY PACK – A battery which is ready for use, contained in a supplemental rigid enclosure, with or without protective devices.

5.4 BATTERY, PRIMARY – A battery that can only be discharged once. It is not designed to be electrically recharged and must be protected from a charging current.

5.5 BATTERY, SECONDARY – A battery that is intended to be discharged and recharged many times in accordance with the manufacturer's recommendations.

5.6 C₅ AMP RATE – The current, in amperes, that a cell or battery can be discharged at for 5 h to the voltage cutoff point specified by the manufacturer.