



ANSI C18.3M, Part 1-2024
Revision of ANSI C18.3M, Part 1-2019

*American National Standard for
Portable Lithium Primary Cells and Batteries—
General and Specifications*

Secretariat:

National Electrical Manufacturers Association

Approved: May 13, 2024

American National Standards Institute

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Foreword

(This foreword is not part of American National Standard C18.3M, Part 1-2024.)

This edition of an American National Standard for Portable Lithium Primary Cells and Batteries is based in part on the previous *American National Standard for Portable Lithium Primary Cells and Batteries—General and Specifications*, ANSI C18.3M, Part 1-2019, and recognizes the work of the International Electrotechnical Commission (refer to IEC Publications 60086-1 and 60086-2) in establishing worldwide standard requirements for portable lithium primary batteries. As with the previous edition, this edition includes the following chemistries:

- Lithium/carbon monofluoride
- Lithium/manganese dioxide
- Lithium/iron disulfide

Changes in this edition include the following items:

- Addition of a new “Digital Household” application test to the 5003LC (CR2025) and 5004LC (CR2032) batteries.
- The “Remote Control / Key Fob” application test was added to the specifications for the 5029LC (CR2450) battery.
- For the 5024LC (CR-P2, 223) and 5032LC (2CR5, 245) batteries, the lower drain photoflash application tests were deleted.

In April 1996, the then ANSI Accredited Standards Committee C18 on Specifications for Dry Cells and Batteries established a new general format for the publication of its standards, dividing this standard into two parts. Part 1 of this American National Standard for Portable Lithium Primary Cells and Batteries contains two basic sections. The first section has general requirements and information, such as the scope, applicable definitions, general descriptions of battery dimensions, terminal requirements, marking requirements, general design conditions, test conditions, etc. Section 2 of Part 1 is composed of specification sheets for various types of cells and batteries. Part 2 of the standard, a separate document, contains safety requirements. ANSI C18.4, also another separate standard, contains environmental requirements.

Suggestions for the improvement of this standard are welcome. They should be sent to the National Electrical Manufacturers Association, 1300 North 17th Street, Suite 900, Rosslyn, VA 22209, Attention: Secretary ANSI ASC C18.

This standard was processed and approved for submittal to ANSI by the American National Standards Committee C18 on Portable Cells and Batteries. Committee approval of this standard does not necessarily imply that all committee members voted for its approval. At the time Committee C18 approved this standard, it had the following members:

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1 General

Note: Part 1 does not include safety requirements. Safety requirements can be found in Part 2.

1.1 Scope and Purpose

1.1.1 Scope

This standard applies to portable lithium primary cells and batteries. This edition includes the following electrochemical systems:

- a. Lithium/carbon monofluoride;
- b. Lithium/manganese dioxide; and
- c. Lithium/iron disulfide.

1.1.2 Purpose

The purpose of this publication is to:

- a. Ensure the electrical and physical interchangeability of products from different manufacturers;
- b. Minimize proliferation of cell and battery types;
- c. Define a standard of performance and provide guidance for its assessment; and
- d. Provide guidance to consumers, manufacturers, and designers.

This is achieved by specifying items such as nomenclature, dimensions, polarity, terminals, marking, test conditions, and procedures.

1.2 Normative References

The following standards contain provisions which, through reference in this text, constitute provisions of this American National Standard. Parties to agreements based on this American National Standard are encouraged to investigate the most recent editions of the standards indicated below.

ANSI/ASME Y14.5	<i>Dimensioning and Tolerancing</i>
ANSI C18.3M, Part 2	<i>American National Standard for Portable Lithium Primary Cells and Batteries—Safety Standard</i>
ANSI C18.4M	<i>American National Standard for Portable Cells and Batteries—Environmental</i>

1.3 Definitions

- 1.3.1 anode:** Electrode at which an electrochemical oxidation reaction occurs.
- 1.3.2 application test:** A test that simulates the actual use of a battery in a specific application.
- 1.3.3 battery:** One or more cells, including case, terminals, and markings.
- 1.3.4 battery, coin:** Small round lithium battery, in which the overall height is less than the diameter.

Note: The term “battery, button” is defined in ANSI C18.1M, Part 1 as a small round non-lithium battery, in which the overall height is less than the diameter.