NEMA Standards Publication

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American National Standard for Portable Rechargeable Cells and Batteries - General and Specifications

National Electrical Manufacturers Association

National Electrical Manufacturers Association
1300 North 17th Street, Suite 900 • Rosslyn. VA 22209
www.NEMA.org

ANSI C18.2M, Part 1-2007

American National Standard

for Portable Rechargeable
Cells and Batteries—

General and Specifications

ANSI C18.2M, Part 1-2007
Revision of
ANSI C18.2M, Part 1-2003

American National Standard

For Portable Rechargeable Cells and Batteries—General and Specifications

Secretariat:

National Electrical Manufacturers Association

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American National Standards Institute, Inc.

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Foreword (This Foreword is not part of American National Standard C18.2M, Part 1-2007.)

In 1912, a committee of the American Electrochemical Society recommended standard methods to be used in testing dry cells. Their recommendations were followed five years later when the National Bureau of Standards prepared specifications that included cell sizes, arrangement of cells within batteries, service tests, and required performance.

The need for continued revision to the specification led to the authorization, by the American Engineering Standards committee, of a permanent sectional committee on dry cells, now portable cells. This Committee, C18, representing battery users, manufacturers, and government agencies, has remained active since that time.

This standard is a revision of American National Standard for Portable Rechargeable Cells and Batteries—General and Specifications, ANSI C18.2M, Part 1-2003. This current revision seeks to improve upon previous editions of this standard by adding consumer product acceptance procedures such as clarification of rated capacity, cycle life, and application charge capacity. Harmonization with the other ANSI C18 Standards was implemented where applicable.

The basic philosophical approach used in developing this standard was that of setting forth uniform test procedures that permit manufacturers' self-declaration with regard to the performance levels of their products, or, in some cases, establishing minimum acceptable performance levels.

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 Rechargeable 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 requirements, etc. Section 2 of Part 1 is comprised of specification sheets for various types of cells and batteries. **Part 2 of the standard, a separate document, contains safety requirements.**

Suggestions for the improvement of this standard will be welcome. They should be sent to the National Electrical Manufacturers Association, 1300 North 17th Street, Suite 1752, 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. When Committee C18 approved this standard, it had the following members:

Michael H. Babiak, Chairperson
Steven Wicelinski, Vice Chairperson
Paul Orr, Secretary

Organization Represented:	*Name of Representative:*
BAE Systems	Andrew Markow Dan Radzykewycz (Alternate)
Bureau Veritas	Thomas M. Heckmann
Consultant	David Linden

Consultant	Albert Himy
Duracell	Steven Wicelinski S. Keel Kelly (Alternate)
Eastman Kodak Company	James C. DeJager
Energizer Battery Manufacturing, Inc.	Michael H. Babiak Marc K. Boolish (Alternate)
Intertek ETL Semko	Terence O'Beirne
International Imaging Industry Association	James Peyton
Panasonic Battery Corporation of America	Charles Monahan
Moltech Power Systems	Ramesh V. Shah James Puckhaber (Alternate)
Spectrum Brands Corporation	John Hadley Denis Carpenter (Alternate)
Tiburon Associates	James Gucinski
Wilson Greatbatch Limited	Kathleen O'Shei

The members of Subcommittee C18-2 on Portable Rechargeable Batteries who contributed to the development of this standard are:

Ramesh V. Shah, Chairperson
Michael H. Babiak, Vice Chairperson
Paul Orr, Secretary

Marc Boolish	S. Keel Kelly
Denis Carpenter	David Linden
James C. DeJager	Andrew Markow
John M. Evjen	Charles Monahan
James Gucinski	John Thompson
John Hadley	Dan Radzykewycz
Thomas Heckmann	Steven Wicelinski
Albert Himy	Bob Coughlin

Others who contributed to the development of this document are:

Akio Furukawa	Battery Association of Japan
Scott Takahashi	Battery Association of Japan

For Portable Rechargeable Cells and Batteries— General and Specifications

1 General

NOTE—Part 1 does not include safety requirements, which can be found in Part 2.

1.1 Scope and objectives

1.1.1 Scope

This publication applies to portable rechargeable, or secondary, cells and batteries[1] based on the following electrochemical systems:

a) Nickel-cadmium
b) Nickel-metal hydride
c) Lithium-ion

Section 1 of this standard contains general information and all standardized performance and mechanical tests upon which all the specifications in Section 2 are based.

Section 2 specification sheets list those tests and requirements described herein that are required for each battery. Not all tests in Section 1 are necessarily required on every specification sheet.

Part 2 of this standard describes all safety tests and requirements.

1.1.2 Purpose

The purpose of this publication is:

a) To ensure the electrical and physical interchangeability of products from different manufacturers;
b) To minimize proliferation of cell and battery types;
c) To define standard performance tests and provide guidance for their assessment; and
d) To provide guidance to consumers, manufacturers, designers, and other end users.

This is achieved by specifying designations, dimensions, polarity, terminals, markings, test conditions, and procedures.

[1] Unless otherwise noted, the word “battery” is used to refer to either cell or battery or both in the remainder of this document.