NEMA Standards Publication

ANSI/NEMA C18.4M-2017

American National Standard for Portable Cells and Batteries—Environmental

National Electrical Manufacturers Association

National Electrical Manufacturers Association
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ANSI C18.4M-2017

American National Standard for Portable Cells and Batteries—Environmental

Secretariat:

National Electrical Manufacturers Association

Approved: November 2, 2017

American National Standards Institute, Inc.

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Published by

National Electrical Manufacturers Association
1300 North 17th Street, Suite 900,
Rosslyn, VA 22209

Printed in the United States of America

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CONTENTS

Foreword (This foreword is not part of American National Standard C18.4M-2017.)

The purpose of this publication is to provide guidance on the proper scientific protocols for testing the environmental performance of batteries. This includes the symbols used to convey messages for collection, recycling, or other ideas; and the aspects and functional unit(s) to be included in assessing the environmental impact of batteries with modern life-cycle analysis techniques. While this publication covers portable primary cells and batteries, at the time of publication, the committee had started discussions about a similar publication for rechargeable batteries or inclusion of rechargeables in the next revision.

This latest edition improves upon the 2015 edition by including details for article information sheets, a compliance checklist, extended producer responsibility and refined information on US and international requirements for environmental aspects as they relate or do not relate to batteries.

Suggestions for improvement of this standard are welcome. They should be sent to:

National Electrical Manufacturers Association,
1300 North 17th Street, Suite 900,
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Attention: Secretary ANSI ASC C18.

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

Steven Wicelinski, Chairman, Duracell, Inc.
Marcus Boolish, Vice-chairman, Energizer Brands, LLC
Khaled Masri, Secretary, NEMA

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The following members of Subcommittee C18-4 for Environmental Aspects for Batteries contributed to the development of this standard:

Marcus Boolish, Chairman, Energizer Brands, LLC
Charles Monahan, Vice-chairman, Panasonic Corporation of North America
Khaled Masri, Secretary, NEMA

Name of Representative:		**Organization Represented**
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S. Keel	Kelly	Consultant
Jody	Leber	SGS North America
Douglas	Lee	U. S. Consumer Product Safety Commission
Charles	Monahan	Panasonic Corporation of North America
Thomas	O'Hara	Intertek
Jeff	Ortega	ZPower, LLC
Heather	Peterson	Batteries Plus Bulbs
Tim	Powers	ZPower, LLC
Andy	Roszkowski	Spectrum Brands, Inc.
Hirotaka	Shima	Hitachi Maxell, Ltd.
Carin	Stuart	Energizer Brands, LLC
Steven	Wicelinski	Duracell, Inc.

Introduction

Every product has some effect on the environment during its manufacture, distribution, use, and disposal. These effects can range from slight to significant; they can be short-term or long-term; and they can occur at the global, regional, or local level. Provisions in battery standards can significantly influence the extent of these environmental effects.

Environmental stewardship in the battery industry embraces a multiplicity of activities, from design, manufacturing, transportation, storage, and recycling, to disposal of the batteries.

There are often questions on the applicability of regulations to batteries. This standard provides guidance on regulations applicable and not applicable to batteries, as well as procedures for measuring environmental characteristics.

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1 Scope and Purpose

1.1 Scope

This standard applies to all chemistries of portable primary cells and batteries standardized in the ANSI C18 series.

1.2 Purpose

This American National Standard is intended to:

a. Raise awareness that provisions in battery standards can affect the environment in negative and positive ways;

b. Outline the relationship between battery standards and the environment;

c. Help avoid provisions in battery standards that might lead to adverse environmental effects;

d. Emphasize that addressing environmental aspects in battery standards is a complex process that requires a balance in competing priorities;

e. Recommend the use of recognized scientific methodologies when developing battery standards that incorporate environmental aspects.

In order to achieve this purpose, this standard:

f. Sets forth general considerations that should be taken into account when developing battery standards which balance the need to achieve the intended product performance while reducing adverse environmental effects, and,

g. Outlines ways in which provisions in battery standards might affect the environment throughout the life cycle of battery products.

2 Normative References

The following standards contain provisions that, through reference in this text, constitute provisions of this American National Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this American National Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below.

IEC GUIDE 109: 2012, *Environmental aspects—Inclusion in electrotechnical product standards*

ISO Draft GUIDE 64: 2008, *Guide for the inclusion of environmental aspects in product standards*

ISO 14040: 2006, *Environmental management—Life cycle assessment—Principles and framework*

3 Terms and Definitions

For the purposes of this American National Standard, the following definitions apply:

3.1 battery, easily removable: A battery that can be removed without permanent damage to the product.

3.2 battery, button: Small round non-lithium battery, in which the overall height is less than the diameter.

Note: the term “battery, coin” is defined in ANSI C18.3 as a small round lithium battery, in which the overall height is less than the diameter.

3.3 battery, portable: A battery that is easily carried and doesn’t exceed 5 kg.

3.4 cadmium free: A battery that contains less than 20 parts per million cadmium.