

# American National Standard

*for Materials Handling (Containers) -  
Steel Drums and Pails*



P.O. Box 790  
Severna Park, MD 21146-0790  
[www.whysteeldrums.org](http://www.whysteeldrums.org)  
T: 410-544-0385

**ANSI®**  
**MH2-2018**

## AMERICAN NATIONAL STANDARD

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for Materials Handling (Containers) --

**Steel Drums and Pails**

Secretariat  
**Industrial Steel Drum Institute**  
**P.O. Box 790**  
**Severna Park, MD 21146-0790**  
**Phone: 410-544-0385**  
[www.whysteeldrums.org](http://www.whysteeldrums.org)

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Approved January 16, 2019  
**American National Standards Institute, Inc.**

## American National Standard

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Published by

**Industrial Steel Drum Institute**  
**P.O. Box 790**  
**Severna Park, MD 21146-0790**  
**Phone: 410-544-0385**  
[www.whysteeldrums.org](http://www.whysteeldrums.org)

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## Foreword

This is a new standard which replaces the expired *American National Standard for Steel drums and pails*, ANSI MH2-2004.

The first MH2 standards for steel drums and pails were issued in 1958, each as nine separate designation numbers. Subsequently, additional standards were added in 1985, the designation numbers were eliminated, and the existing 17 standards with the exception of one, which was obsolete, were grouped according to capacity in subsections. Eight new standards were added covering 20-liter pails and 55-gallon round-seam chime construction, bringing the total to 24 various types of steel shipping drums and pails. ANSI MH2-1991 consisted of standards for these types plus one more, DOT 17C, bringing the total to 25.

ANSI MH2-1997 represented the first time that DOT specification numbers were not part of the standard. This revision of ANSI MH2 retains all of the previous edition's standards and adds one new drum style to cover 55 gallon, open head, straight sided, no rolling hoops steel drums (section 3.12). Because of changes in Title 49 CFR (Code of Federal Regulations), Part 178, DOT specification non-bulk containers can no longer be manufactured. Instead, hazardous material containers are to be designated and constructed based on UN performance-oriented packaging (POP) standards. There is no conversion chart to compare the equivalent UN marking to the old DOT marking.

The UN performance standards of the DOT Title 49 CFR Part 178 provide limited design guidelines on how the container is to be constructed. The container is marked in accordance with the level it achieves during performance-oriented packaging testing. A container can be manufactured in any fashion as long as the resulting package conforms to the construction standards and test requirements of Part 178, Subparts L and M of Title 49 CFR, and meets the general performance criteria of Subpart B of Part 173.

Tests are to be conducted and documented in accordance with the requirements of Title 49 CFR and can be performed by the container manufacturer or a DOT-recognized third-party testing laboratory acting for the container manufacturer. The test criteria are determined by the packing group, specific gravity, and vapor pressure of the lading for liquids and the packing group and gross mass for solids.

It is the responsibility of the filler/shipper to determine the proper package for each lading and that the package is appropriately authorized, assembled, and marked for transport of hazardous materials.

Dimensional characteristics referred to in previous publications of MH2 will remain in these standards. It is expected that these dimensional standards will continue in worldwide use for many years.

Suggestions for improvements of this standard are welcome. They should be sent to the Industrial Steel Drum Institute, P.O. Box 790, Severna Park, MD 21146-0790.

This standard was processed and approved for submittal to ANSI by the Accredited Standards Committee on Metal Drums and Pails, MH2, with the Industrial Steel Drum Institute acting as secretariat. Committee approval of this standard does not necessarily imply that all committee members voted for its approval. At the time of approval of this standard, the MH2 Committee consisted of the following members;

David E. Sovol, Chairman  
Jordan Pike, Vice Chairman  
Susan Nauman, Secretary

<i>Organization Represented</i>	<i>Name of Representative</i>
Dow Chemical Co. ....	Justin Burke
Greif Corporation .....	Phil Zamperin
Mauser USA LLC .....	Christopher Lind
North Coast Container Corporation .....	David E. Sovol
Packaging Specialties, Inc. ....	James L. Munson
Reusable Industrial Packaging Association.....	C. L. Pettit
R B Natali Consulting, Inc. ....	Ronald Natali
Sherwin Williams .....	Jordan Pike
Skolnik Industries, Inc.....	Matthew Dick
Third Coast Terminals.....	Grif Carnes
Valvoline .....	Steve Ruble
U.S. Department of the Air Force.....	Susan J. Evans
U.S. Department of the Army.....	Charlotte Lent

# American National Standard for Materials Handling (Containers) - Steel Drums and Pails

## 1.1 Purpose

The purpose of this standard is to identify dimensional characteristics for free-standing steel drums and pails most commonly used in domestic and export shipments.

## 1.2 Scope

The scope of this standard is primarily for drums and pails having capacities from 5 to 58 gallons (19 – 221 liters).

Throughout the standard, the word "may" is used to denote an option reference. The word "should" is used to denote a recommendation.

For definition of terms in this standard, see clause 8.

The committee responsible for preparing this standard is comprised of representatives from container manufacturers, shippers, carriers, and regulatory groups.

## 2 General Information

### 2.1 Capacity

Historically, U.S. regulations express capacity of drums and pails in U.S. gallons based on rated (marked) capacity. Drum and pail dimension sizes reflect this historical view. Regulations effective October 1, 1991, do not specify a capacity definition.

Variations in drums and pail capacities require review and knowledge of various regulations in order to ensure compliance and to prevent overfilling the packages. Code of Federal Regulations, Title 49 CFR 173.24 (h) requires that packagings of 450 Liters (119 gallons) or less containing liquids have sufficient outage (ullage) to prevent liquid contents from completely filling the package at 55°C (131°F) or less. The outage must ensure the package does not leak or create permanent distortion as a result of liquid expansion at temperatures expected during transportation.

Applicable U.S. Department of Transportation regulations are published in Code of Federal Regulations, Title 49 Parts 100 to 185<sup>1</sup>; Rule 40 is published by the National Railroad Freight Committee<sup>2</sup>; and Item 260 is published by the National Classification Committee of the National Motor Freight Traffic Association<sup>3</sup>. All supplements, amendments, or reissues to these regulations that are in effect apply.

### 2.2 Metric Conversion

Metric conversion shall comply with U.S. Department of Transportation Title 49 CFR Part 171.10 as well as with both Rule 40 of the Uniform Freight Classification and Item 260 of the National Motor Freight Classification.

1) Available from the U.S. Government Printing Office at 1-202-512-1800, or on-line at: <http://bookstore.gpo.gov>. To read the CFR on-line: <http://www.eCFR-Code> of Regulations/index.html.

2 Uniform Freight Classification 6000-M is available for download at no charge from the North America Railroad Professional Services (NARPS), 916 Champions Way McDonough, GA 30252, Phone: 678-583-8296, FAX: 678-583-9574, Email: [narps@narps.org](mailto:narps@narps.org)

3) Available from the National Motor Freight Traffic Association, 1001 North Fairfax Street, Suite 600 Alexandria, VA 22314 -1798 or phone (703) 838-1810.