Approved: June 10, 2016

Abstract
This standard provides a comprehensive dictionary of MH 10/SC 8 Data Identifiers and GS1 Application Identifiers, provides for the assignment of new Data Identifiers, as required, and provides a document detailing the correlation, or mapping, of Data Identifiers to Application Identifiers, where a correlation exists.
Approval of an American National Standard requires verification by the American National Standards Institute (ANSI) that the requirements for due process, consensus, and other criteria for approval have been met by the standards developer.

Consensus is established when, in the judgment of the ANSI Board of Standards Review, substantial agreement has been reached by directly and materially affected interests. Substantial agreement means much more than a simple majority, but not necessarily unanimity. Consensus requires that all views and objections be considered, and that a concerted effort be made toward their resolution.

The use of American National Standards is completely voluntary; their existence does not in any respect preclude anyone, whether he has approved the standards or not, from manufacturing, marketing, purchasing, or using products, processes, or procedures not conforming to the standards.

The American National Standards Institute does not develop standards and will in no circumstances give an interpretation of any American National Standard. Moreover, no person shall have the right or authority to issue an interpretation of an American National Standard in the name of the American National Standards Institute. Requests for interpretations should be addressed to the sponsor whose name appears on the title page of this standard.

CAUTION NOTICE: This American National Standard may be revised or withdrawn at any time. The procedures of the American National Standards Institute require that action be taken periodically to reaffirm, revise, or withdraw this standard. Purchasers of American National Standards may receive current information on all standards by calling or writing the American National Standards Institute.

Published by:

Material Handling Industry for:

MH10, Unit-Loads & Transport-Packages,
MH10 is an ANSI Accredited Standards Committee

Secretariat: Material Handling Industry

8720 Red Oak Blvd., Suite 201, Charlotte, NC  28217-3992

Copyright © 2016 by Material Handling Industry

All rights reserved.

No part of this publication may be reproduced in any form, in an electronic retrieval system or otherwise, without prior written permission of the publisher.

Printed in the United States of America
Disclaimer

This standard was developed under the ANSI Committee method and approved by ANSI on October 9, 2006. It was developed with the sole intent of offering information to parties engaged in the manufacture, marketing, purchase, or use of automatic identification equipment, software and services. This standard is advisory only and acceptance is voluntary and the standard should be regarded as a guide that the user may or may not choose to adopt, modify, or reject. The information does not constitute a comprehensive safety program and should not be relied upon as such. Such a program should be developed and an independent safety adviser consulted to do so.

Material Handling Industry (MHI), the MH10 Committee and its officers and members assume no responsibility and disclaim all liability of any kind, however arising, as a result of acceptance or use or alleged use of this standard. User specifically understands and agrees that MHI, the MH10 Committee and their officers, committee members, agents, and members shall not be liable under any legal theory of any kind for any action or failure to act with respect to the design, installation, manufacture, preparation for sale, sale, characteristics, features, or delivery of anything covered by this standard. Any use of this information must be determined by the user to be in accordance with applicable federal, state, and local laws and regulations.

MHI, the MH10 Committee and its officers and members make no warranties of any kind, express, implied, or statutory, in connection with the information in this standard. MHI and the MH10 Committee specifically disclaim all implied warranties of merchantability or of fitness for particular purpose.

By referring to or otherwise employing this standard, the user agrees to defend, protect, indemnify, and hold MHI, the MH10 Committee, their officers, committee members, agents, and members harmless from and against all claims, losses, expenses, damages, and liabilities, direct, incidental, or consequential, arising from acceptance or use or alleged use of this standard, including loss of profits and reasonable attorneys' fees which may arise out of the acceptance or use or alleged use of this standard. The intent of this provision and of the user is to absolve and protect MHI, the MH10 Committee, committee officers, agents, and members from any and all loss relating in any way to this standard, including those resulting from the user's own negligence.
Foreword

It is the mission of this committee to develop a comprehensive dictionary of Data and Application Identifiers, assign new Data Identifiers, as required, and to provide a document detailing the correlation, or mapping, of Data Identifiers to Application Identifiers, where a correlation exists.

As with any American National standard, as new requirements are identified, interested parties request the assignment of new Data Identifiers and Application Identifiers to meet the needs of a particular industry or activity. ANSI has designated this standard as being "Under Continuous Maintenance". Proposed changes to the standard that are accepted by the MH10.8.2 Data Identifier Committee shall be integrated into the previously published version at the recommendation of the committee. Upon approval of the new version by MH10 Subcommittee 8 and the full MH10 committee, the standard will be published as a new version.

The committee plans to incorporate accepted revisions into the standard as frequently as necessary, but in no case will a published revised standard be issued more frequently than yearly, in line with indicated needs and industry developments. Each accepted revision since the last published version shall be identified in a "Document Maintenance Summary" appearing immediately before the Table of Contents of the standard.

This standard has been updated from the last published issue of ANS MH10.8.2 representing the fourth five-year revision of the standard, published in 2015, published in 2006, published in 2002; the first revision occurring in 1995. Requests received subsequent to the date of the standard will be added to the draft standard for trial use and will be considered for incorporation at the fifth five-year revision of the standard.

Users desiring assignment of new Data Identifiers may submit their request to:

EMAIL: Dlrequests@mhi.org
MAIL: DIMC
     c/o MHI
     8720 Red Oak Blvd – Suite #201
     Charlotte, NC 28007-3992
     USA
PHONE: +1 704.676.1190   Ask for Data Identifier Request Desk

Users desiring assignment of new Application Identifiers may submit their request to http://www.gs1.org/.
Note:

The following annexes are provided:
- Annex A Quick Reference to Data Identifier (DI) Categories
- Annex B Annotated Listing of Assigned Data Identifier (DI) Categories
- Annex C Data Identifier (DI) Application Notes
- Annex D ANSI X12.3 Data Element Number 355 Unit of Measure Code
- Annex E ANSI X12.3 Data Element Number 374 Date/Time Codes
- Annex F ANSI X12.3 Data Element Numbers 208 & 209 Hazardous Material Codes
- Annex G ISO 4217 Currencies and Funds Codes
- Annex H ISO 3166-1 Country Codes
- Annex I Data Identifier and Application Identifier Request Forms & Metadata
- Annex J User Guidance
- Annex K System Identifiers
- Annex L Identifiers for Returnable Packaging Items
- Annex M Material categories and material codes

At the time of approval, the MH10 committee consisted of the following members:

American Trucking Associations
American Wood Packaging Association
APA - The Engineered Wood Association
Association of American Railroads
Assoc. of Professional Material Handling Consultants
ASTM
Automotive Industry Action Group
Containerization & Intermodal Institute, Inc.
Fibre Box Association
Flexible Intermediate Bulk Containers Association
Glass Packaging Institute
GS1 US
IDEAlliance
Institute of Packaging Professionals
Integrated Business Communications Alliance
Intermec Technologies Corporation
International Association of Movers
International Cargo Handling Coordination Association
International Foodservice Distributors Association
International Safe Transit Association

Data Identifier Maintenance Committee

ANSI MH10.8.2 is a reference standard to ISO/IEC 15418 (GS1 Application Identifiers and MH 10/SC 8 Data Identifiers). As such a Data Identifier Maintenance Committee was established representing diverse interests from various countries. Data Identifier Maintenance Committee Members are:

Bill Hoffman, Automotive Industry Action Group (AIAG) Interim Chair
Hiromitsu Takai, Denso Wave, SC 31 Committee of Japan
Sten Lindgren, ODX Consulting AB
Robert Fox, R Fox Enterprises
Erich Guenter, IBM (Germany) & EDIFICE

Heinrich Oehlmann, Eurodata Council, DIN
John Wells, IPC Technology, UPU
Mark Lewis, United Parcel Service (UPS)
Craig MacDougall, USD (AT&L)/DPAP/PDI
## DOCUMENT MAINTENANCE SUMMARY

Any changes to this document will be reflected in the Document Maintenance Summary, below.

<table>
<thead>
<tr>
<th>Date</th>
<th>Action</th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016-01-07</td>
<td>Add</td>
<td>10N - Data in the format and using semantics defined by the holder of a Company Identification Number (CIN) that has been issued by an Issuing Agency Code (IAC) in accordance with ISO/IEC 15459, defined as a sequence of concatenated data elements: IAC, followed by CIN, followed by the separator character &quot;:&quot; (colon) followed by the data in the format and using semantics as defined by the CIN holder. NOTE: Only the data syntax rules (if any) as provided by the declared IAC+CIN within each DI “10N” data stream shall be applied to the data following DI 10N+IAC+CIN.</td>
</tr>
<tr>
<td>2016-07-19</td>
<td>Add</td>
<td>30B – Packaging Item Number. Number to identify the type of packaging item (material) used when packing products and packages. The number will enable packaging item (material) to be identified and separated from products, packages, Returnable Transport Items (RTIs) and Returnable Packaging Items (RPIs) during packing. The number is constructed as a sequence of minimum 1 data element: Packaging item (material) number that is unique within the holder’s domain.</td>
</tr>
<tr>
<td>2016-07-19</td>
<td>Add</td>
<td>31B – Global Unique Packaging Number. Global unique number to identify the type of packaging item (material) used when packing products and packages. The global unique number will enable packaging items (materials) to be identified and separated from products, packages, Returnable Transport Items (RTIs) and Returnable Packaging Items (RPIs) during packing. The number is constructed as a sequence of 3 concatenated data elements: The IAC, followed by the CIN, followed by the Packaging item (material) number that is unique within the CIN holder’s domain.</td>
</tr>
<tr>
<td>2016-08-12</td>
<td>Corrected</td>
<td>10N - Due to an error in the assignment of DI “10N” (there is no central authority for data-definition nor maintenance), no new uses of DI “10N” should be implemented. The function of DI “10N” is established in Category 18, MISCELLANEOUS with DI “5R”. It is strongly recommended that existing applications that use DI “10N” migrate to DI 5R.</td>
</tr>
<tr>
<td>Date</td>
<td>Action</td>
<td>Summary</td>
</tr>
<tr>
<td>----------</td>
<td>--------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>2016-08-12</td>
<td>Added</td>
<td>5R - Data in the format and using semantics defined by the holder of a Company Identification Number (CIN) that has been issued by an Issuing Agency Code (IAC) in accordance with ISO/IEC 15459, defined as a sequence of concatenated data elements: IAC, followed by CIN, followed by the separator character “:” (colon) followed by the data in the format and using semantics as defined by the CIN holder. NOTE: Only the data syntax rules (if any) as provided by the declared IAC+CIN within each DI “10N” data stream shall be applied to the data following DI 10N+IAC+CIN.</td>
</tr>
<tr>
<td>2016-08-29</td>
<td>Added</td>
<td>6R - ISO/IEC 20248 digital signature data construct. If the underlying data carrier encoding is 7 bits, then only the ISO/IEC 20248 raw format may be used.</td>
</tr>
<tr>
<td>2016-09-22</td>
<td>Added</td>
<td>11N - Data fields related to reverse logistics, which covers returns, repair, refurbishing and recycling.</td>
</tr>
</tbody>
</table>
# TABLE OF CONTENTS

DOCUMENT MAINTENANCE SUMMARY ................................................................................................................................. vi

1. **Scope** ........................................................................................................................................................................... 1

2. **Normative References** .................................................................................................................................................. 1

3. **Terms and Definitions** .................................................................................................................................................. 2

SECTION I DATA IDENTIFIERS (DIs) ................................................................................................................................. 4

SECTION II GS1 APPLICATION IDENTIFIERS (AIs) ........................................................................................................... 42

SECTION III MAPPING ANSI MH10.8.2 DIs & GS1 AIs .................................................................................................... 54

SECTION IV MAPPING GS1 AIs to ANSI MH10.8.2 DIs .................................................................................................. 76

SECTION V SHORT TITLES .................................................................................................................................................. 88

SECTION VI HIERARCHICAL LEVELS - Data Identifier "F" ............................................................................................. 93

ANNEX A QUICK REFERENCE TO DATA IDENTIFIER (DI) CATEGORIES (Informative) .................................................. 102

ANNEX B ANNOTATED ALPHABETICAL LISTING OF ASSIGNED DATA IDENTIFIER (DI) CATEGORIES (Informative) ........................................................................................................................................... 105

ANNEX C DATA IDENTIFIER (DI) APPLICATION NOTES (Normative) ........................................................................ 109

ANNEX D ANSI X12.3 DATA ELEMENT NUMBER 355 UNIT OF MEASURE CODE (Informative) .................................................. 119

ANNEX E ANSI X12.3 DATA ELEMENT NUMBER 374 DATE/TIME CODES (Informative) ................................................................. 126

ANNEX F ANSI X12.3 DATA ELEMENT NUMBERS 208 & 209 HAZARDOUS MATERIAL CODES (Informative) ........................................................................................................................................... 130

ANNEX G ISO 4217 CURRENCIES AND FUNDS CODES (Informative) ........................................................................ 135

ANNEX H ISO 3166-1 COUNTRY CODES (Informative) .................................................................................................. 138

ANNEX I DATA IDENTIFIER REQUEST FORM (Informative) ............................................................................................. 141

ANNEX J SYSTEM IDENTIFIERS (Informative) .................................................................................................................. 148

ANNEX K DATA IDENTIFIERS FOR RETURNABLE PACKAGING ITEMS (RPIs) (Normative) ................................................................. 151

ANNEX L MATERIAL CATEGORIES AND MATERIAL CODES (Normative) ................................................................. 1577
Data Identifier and
Application Identifier Standard

1. Scope

This standard provides a comprehensive dictionary of MH 10/SC 8 Data Identifiers and GS1 Application Identifiers, provides for the assignment of new Data Identifiers, as required, and provides a document detailing the correlation, or mapping, of Data Identifiers to Application Identifiers, where a correlation exists. This standard does not supersede or replace any applicable safety or regulatory marking or labeling requirements. The standard is to be applied in addition to any other mandated labeling requirements.

Unless otherwise stated within the document, the allowable character set for data fields identified by an ANS MH10.8.2 Data Identifier are the upper case alphabetic characters A to Z and the numeric characters 0 to 9.

2. Normative References

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 646 Information technology -- ISO 7-bit coded character set for information interchange
ISO 3166-1 Codes for the representation of names of countries and their subdivisions - Part 1: Country codes
ISO 4217 Codes for the representation of currency and funds
ISO/IEC 15418 Information technology – Automatic identification and data capture techniques – GS1 Application Identifiers and ASC MH10 Data Identifiers and maintenance
ISO/IEC 15424 Information technology – Automatic identification and data capture techniques – Data carrier identifiers (including Symbology Identifiers)
ISO/IEC 15459-1 Information technology - Automatic Identification and Data Capture Techniques — Unique identification -- Part 1: Individual transport units
ISO/IEC 15459-2 Information technology – Unique identifiers—— Part 2: Registration procedures
ISO/IEC 19762 Information technology - Automatic identification and data capture (AIDC) techniques -- Harmonized vocabulary
UN/EDIFACT Code List 8053 United Nations Directories for Electronic Data Interchange for Administration, Commerce and Transport – Equipment Type Code Qualifier
UN/EDIFACT Code List 3035 United Nations Directories for Electronic Data Interchange for Administration, Commerce and Transport – Party Function Code Qualifier
UPU Standard M82-3 Universal Postal Union – Attribute Definitions
ANS X12.3 Electronic Data Interchange Data Element Dictionary
ANSI HIBC 2.3 The Health Industry Bar Code (HIBC) Supplier Labeling Standard
IEEE 802.11 Wireless LANs