



CANADIAN FORCES SPECIFICATIONS

**MARKING FOR STORAGE AND SHIPMENT OF DEPARTMENT
OF NATIONAL DEFENCE MATERIEL**

(ENGLISH)

(Supersedes D-LM-008-002/SF-001 dated 1991-08-01)

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NOTES TO USERS

Laws/Regulations of Canada

1. Laws and regulations pertaining to packaging, safe handling and shipment of products, established by the various levels of government (federal, provincial and municipal), must be adhered to.

Deviation from Specification

2. If the contractor wishes to suggest other proposals or otherwise depart from the current issue of this specification, they must forward their proposals immediately to the Contracting Authority for approval.

Inquiries

3. Any questions relating to this specification will be referred to DSCO 5-4-3 via the Contracting Authority.

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PART 1

SCOPE

Purpose

1. This specification establishes the requirements of the Department of National Defence (DND) and the Canadian Armed Forces (CAF) for the uniform marking for storage and shipment of military supplies and equipment, thereby providing essential information to personnel handling the materiel. It supplements but does not supersede any markings contained in commodity specifications or required by regulations governing carriers.
2. These markings are critical to automate data capture for improvements in item management from delivery through ultimate delivery to the end user including initial receipt/acceptance, storage, transportation, distribution and end use. There are four major uses of these markings:
 - a. **Identification.** Data about an item of DND materiel used to distinguish it from all others (e.g. Unique Item Identifier [UII], serial number) and to describe its attributed characteristics (e.g. Lot/Batch, Part Number, NATO Stock Number).
 - b. **Shipping Instructions.** Provides carrier/transporters the information necessary to move the item/shipment from location to location typically provided in a Military Shipping Label.
 - c. **Handling and Storage.** Provides information for the safe manipulation of the packaged item based on the physical limitation, requirements or characteristics of an item thereby preventing damage to the item and harm to the handler (e.g. pictograms for forklift handling, center of gravity, temperature requirements).
 - d. **Special Purpose.** Often the use of an item is predicated on it being managed to ensure it does not spill, spoil and does not pose a hazard to the environment, e.g. Shelf-Life, Electrostatic Discharge Sensitive Device (ESDS), and Dangerous Goods (DG).

Intended Use

3. Package marking requirements of this specification, in conjunction with D-02-002-001/SG-001, Identification Marking of DND Materiel, ensure that items that are packed can be quickly and positively identified by one or more of the following: Unique Item Identifier (UII), Commercial Marking, Manufacturer NCAGE and Manufacturer Part Number (MPN), Manufacturer Serial Number, NATO Stock Number (NSN), Global Trade Identification Number (GTIN), Item Name, Lot/Batch or Type Designation. Also, the packages must contain all necessary additional markings to ensure they are properly transported, stored and issued to the user in viable condition. Markings must be in both official languages (i.e. English and French).
4. Markings as set out in this specification are required for materiel under the jurisdiction of the Department, including equipment on long-term loan to other Government agencies or to contractors (also known as Government Owned Contractor Controlled or GOCC materiel), in performance of production, repair or maintenance contracts.
5. Markings are also required for any Contractor-owned property for which custody is transferred to the Department (also known as Contractor Owned, Government Controlled, or COGC property).
6. **Unauthorized markings.** No markings, other than those specified or permitted in this specification, must be placed on any container unless authorization is obtained from the Contracting Authority (CA) designated on the contract.
7. **Equivalents.** Marking in accordance with the United States Department of Defense (DoD) Military Standard MIL-STD-129, for items marked in the United States, or in accordance with NATO Standardization Agreement (STANAG) 4281, are acceptable in lieu of the requirements of this specification provided that the DND Stock Number (identified on the contract) is used. Nevertheless, marking in accordance with this specification is acceptable, irrespective of country of origin.
8. **Wood packaging materials.** All wood packaging materials must comply with the International Standards for Phytosanitary Measures 15 (ISPM 15, <https://www.ippc.int/>), Regulation of Wood Packaging Material in International Trade. Any deviation requires the prior approval of the Contracting Authority (CA).

Exclusions

9. **Exceptions.** Petroleum products, explosives and items of subsistence. Guidance for the requisite content and application of package markings not covered by this specification is available from the Contracting Authority (CA) designated on the contract.
10. **Commercial packaging.** Marking in accordance with Department of National Defence Minimum Requirements for Commercial Packaging, D-LM-008-036/SF-000.
11. **Classified material.** Marking must be as specified on the contract or in accordance with it when classified material is being shipped. Only those commercial carriers who have the appropriate security screening must be offered classified material for transportation.
12. Marking of commercial products presenting no identification problems, e.g. small tools.
13. Marking of the following items for storage and shipment which are covered by separate documents:
 - a. Ammunition;
 - b. Raw materials;
 - c. Real property; and
 - d. Software.

PART 2

APPLICABLE DOCUMENTS

1. The issues of the following documents in effect on the date of Request for Proposal (RFP) form part of this specification to the extent specified herein. Unless otherwise NOTED herein or in the contract, in the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

Specifications

2. D-LM-008-001/SF-001, Methods of Packaging;
3. D-LM-008-036/SF-000, Department of National Defence Minimum Requirements for Commercial Packaging;
4. Data Item Description (DID) Req. Name-LS-XXX, Identification Shipping and Packaging Data;
5. Data Item Description (DID) Req. Name-LS-XXX, IUID Validation and Verification Report; and
6. Data Item Description (DID) Req. Name-LS-XXX, Advance Shipment Notification (ASN).

Standards

a	D-02-002-001/SG-001	Identification Marking of DND Materiel
	ISO 780	Packaging – Distribution Packaging – Graphical Symbols for Handling and Storage of Packages
	ISO 15394	Packaging – Bar Code and Two-Dimensional Symbols for Shipping, Transport and Receiving labels
	ISO/IEC 15415	Information Technology – Automatic Identification and Data Capture Techniques – Bar Code Symbol Print Quality Test Specification – Two-Dimensional Symbols
	ISO/IEC 15416	Information Technology – Automatic Identification and Data Capture Techniques – Bar Code Print Quality Test Specification – Linear symbols
	ISO/IEC 15418	Information Technology – Automatic Identification and Data Capture Techniques – GS1 Application Identifiers and ASC MH10 Data Identifiers and Maintenance
	ISO/IEC 15426	Information Technology – Automatic Identification and Data Capture Techniques – Bar Code Verifier Conformance Specification – Parts 1-2
	ISO/IEC 15434	Information Technology – Automatic Identification and Data Capture Techniques – Syntax for High-capacity ADC Media
	ISO/IEC 15438	Information Technology – Automatic Identification and Data Capture Techniques – PDF417 Bar Code Symbology Specification
	IOS/IEC 15459-4	Information Technology – Unique Identifiers – Part 4: Individual Items
	ISO/IEC 16388	Information Technology – Automatic Identification and Data Capture Techniques – Code 39 Bar Code Symbology Specification
	ISO/IEC 18000-6C	Information Technology – Radio Frequency Identification for Item Management – Implementation Guidelines – Part 1: RFID-Enabled Labels and Packaging Supporting
	ISO/IEC TR 24729-1	Information Technology – Radio Frequency Identification for Item Management – Implementation Guidelines – Part 1: RFID-Enabled Labels and Packaging Supporting ISO/IEC 18000-6C
	MIL-STD-129	Military Marking for Shipment and Storage
	STANAG 2233	NATO Consignment and Asset Tracking by Radio Frequency Identification (RFID)
	STANAG 2290 AAITP-08	NATO Unique Identification of Items

	STANAG 2494 AAITP-02	NATO Asset Tracking Shipping Label and Associated Symbolologies
	STANAG 4281 AAITP-05	NATO Standard Marking for Shipment and Storage
	STANREC 4782 AUIDP-1	NATO Guidance on Unique Identification (UID) of Items
	STANAG 4329 AAITP-09	NATO Standard Bar Code Handbook
	ASTM D5445	Standard Practice for Pictorial Markings for Handling of Goods
	ASTM D5486/D5486M	Standard Specification for Pressure Sensitive Tape for Packaging, Box Closure, and Sealing
	ANSI MH10.8.2	Data Identifier and Application Identifier Standard
	ANSI MH10.8.6	Bar Codes and Two-Dimensional Symbols for Packaging
	ANSI MH10.8.17	Item Unique Identification (IUID) Data Matrix Encoding Guideline
	GS1 General Specification	https://www.gs1.org/standards/bar-codes-epcrfid-id-keys/gs1-general-specifications

Publications

7. ACodP-0;
8. AAITP-07, NATO Consignment and Asset Tracking by Radio Frequency Identification (RFID);
9. AAP-6, NATO Glossary of Terms and Definitions;
10. AAP-23, NATO Glossary of Packaging Terms and Definitions;
11. AAP-35, NATO Glossary of Asset Tracking Terms and Definitions;
12. AAP-44, NATO Standard Bar Code Handbook;
13. AEPP-2, NATO Standard Packaging for Materiel Susceptible to Damage by Electrostatic Discharge;
14. APP-21, NATO Packaging and Preservation; and
15. Transportation of Dangerous Goods Act and Transport of Dangerous Goods Regulations, Part 1, Hazardous Products Act.
 - a. Copies of this specification and the above documents may be obtained from the Department of National Defence, Ottawa, Ontario, K1A 0K2, Attention: DSCO 4.

PART 3

REQUIREMENTS

General

1. The advent of modernized information management Machine Readable Information (MRI) in the form of 1- and 2-Dimensional bar codes is critical to improving the efficiency and effectiveness of Defense Supply Chain (DSC) management. Properly established MRI marking with back-up Human Readable Information (HRI) for packaged serially, non-serially and, in some cases, batch/lot managed items is critical to enable and improve the speed and accuracy of DND/CAF Supply Chain processes.
2. These improvements are not possible if product, supplier, shipping and transporter data is not accurately and reliably applied to packages and items in both MRI and HRI and the underlying information supplied electronically to the procurement authority in advance of delivery by the supplier as described in Data Item Description (DID) Req. Name-LS-XXX, Advance Shipment Notification (ASN). This section lays down the requirements that will ensure effective implementation of package marking in support of the item marking of D-02-002-001/SG-001, Identification Marking of DND Materiel, transportation requirements and other packaging requirements.

Marking Basics

3. Marking is defined as the application of numbers, letters, symbols, bar codes or colours directly or via labels and tags, for handling and identification during shipment or storage. The following principles apply to all markings (including labels) covered by this specification:
 - a. All surfaces to which markings are to be applied must be clean, undamaged, and free from contamination. This may require some surface preparation, e.g. smoothing, cleaning/degreasing and over-painting, etc.
 - b. The markings must be placed so as not to be obscured by tape, strapping, cleats, etc., or obstructions (corners, ledges, support rings, battens, handle brackets, etc.). The arrangement of markings must be as described herein and as near as possible as shown in Figure #.
 - c. Markings that are not relevant to a consignment must be removed or obliterated.
 - d. All markings must be in BLACK except for surfaces where black is not legible; the colour must be then one which provides a definite contrast, particularly for a bar code scanner's ability to read MRI bar codes (monochromatic reproduction in any contrasting colour). YELLOW or WHITE lettering must be applied over lustreless olive drab colour on metal drums. The colour RED must be avoided for non-hazard markings.
 - e. All markings must be legible and resistant to the environment in which it is to be used. The durability should be applicable to the most arduous conditions of storage and transportation.
 - f. Markings must be applied by a method that provides a legible, durable and non-fading result capable of withstanding normal exposure to the environment and envisaged handling. Application may include the use of labels, stamping, stencilling, printing, or tagging as appropriate. The marking process used may include lithography, silk-screening, photo-marking, embossing, decals, transfers, polymer fusion and laser marking. Other processes may be used when specified or if approved by the Technical Authority.
 - g. Application Methods (i.e. tagging, stenciling, stamping, machine printing, polymer fusion or labeling) vary depending upon a number of factors such as the material to which the mark is to be applied or the anticipated life of the package.

Application Method	Mark Characteristic	HRI	1D	2D	Recommended Use
Tags	Attachment	Y	Y	Y	
Paper, polyester, or polyacrylic label	Adhesive	Y	Y	T	Paper, polyester and polyacrylic labels, tags & plates applied directly to the surface of high surface-energy substrates for low to medium exposure environments.
Tag/Plate	Adhesive or mechanical	Y	Y	Y	Very durable photo-sensitized aluminum, laser markable or stamped metal directly applied to the surface of a high surface-energy substrates via adhesives or high or low surface-energy substrates with mechanical attachment.
Rubber stamp	Surface mark	Y	Y	Y	Applied directly to the surface of fabrics, wood, plastics, cardboard, paper.
Ink jet		Y	Y	Y	Applied directly to the surface of fabrics, wood, plastics, cardboard, paper.
Paints, Pigments		Y	Y	Y	Paints and paints containing pigments applied to the surface of a box, wood crate or other surface.
Polymer Fusion Labelling		Y	Y	Y	Permanent marking this is particularly good for low surface energy polyolefin plastics such as Polypropylene, Polyethylene, TPV, TPO, TPE, and polyvinyl chloride. Exceptionally good for reusable plastic cases or drums.

Figure 3-1 Typical Marking Application Methods

4. **Labels.** Pressure-sensitive labels may be used on containers other than wood. On wooden containers, the labelling area should be given a smooth coat of non-contrasting colour lacquer or paint before application. A waterproof, transparent, plastic, protective over-coating must be placed over the labels.
5. **Stencils.** Stencilling of porous or non-porous surfaces must be accomplished by brushing, rolling or spraying a sharply cut stencil with stencilling ink. Surfaces must be clean and smooth so that the markings will stand out clearly. Where surfaces are unsuitable for stencilling, weatherproof tags or labels are to be used.
6. Unless otherwise specified, black stencilling ink must be used for light-coloured surfaces and white stencilling ink for dark-coloured surfaces.
7. **Tag/Plate.** Tags/Plates applied to items of supply are attached with adhesive or through mechanical means. They are typically a more durable form of marking than a traditional label. Thin plates are often considered labels in that the material is relatively flexible and, when annealed, are very flexible. Item Tags or Plates may be marked directly with a laser or exposed through photographic processes or printed.
8. Tags applied to packaging/containers must be securely affixed to wooden surfaces by stapling, tacking or nailing. A minimum of four fasteners must be used. Staples, tacks or nails must not protrude through the container walls.
9. When the method of affixing tags to packaging/containers by stapling, tacking or nailing is impracticable, tags must be secured as follows:
 - a. Wire ties must be used when the wires will not cause damage to the item.
 - b. Strong twine ties must be used when possible damage to the items would result from the use of wire.
 - c. Twine may be used for small identification tags in interior packs.
 - d. Tags used in the marking of shipping containers must be waterproofed after markings have been applied, by spraying or brushing with water-resistant label adhesive or clear lacquer.
10. In order to satisfy the CAF's multiple storage, handling and redistribution activities, all markings must be durable, fade resistant and remain legible while withstanding normal exposure to the environment and envisaged handling. The marking must be as permanent as the normal life expectancy of the packaging and be capable of withstanding the environmental conditions and cleaning procedures specified for the packaging to which it is affixed.

11. Markings and labels must be legible even after the package/container has been opened. Any label or marking not relevant to a consignment must be removed or obliterated. The ability to read the marking must not be affected if the package is opened for inspection. The required markings must be placed so as not to be obscured by tape, strapping, labels, cleats, etc. The arrangement of markings must be as described herein and as near as possible as shown in Annex B.
12. All alphanumeric text markings (lettering) must use a bold, upper case sans serif font of equal height, proportional to the available space of the container and must not exceed 76 mm (3 in.) in height.
13. Machine printing is required. "Hand lettering" may not be used unless authorized by the Department TA.

NOTE

Hand printing is never acceptable for external markings on ammunition transport packages. While mechanical printing is preferred, hand printing/"hand lettering" in upper case letters, of all interior and exterior containers (e.g. serial numbers, piece number, total pieces, weight, and cube), may be permitted provided that the lettering is uniform, legible, and of a size proportionate to the available marking space.

14. Abbreviations authorized for use in this specification are listed in the List of Abbreviations.
15. Supplementary specifications. Any material or method used in connection with this specification must conform to the requirements of the relevant specification for the material or method as listed in applicable documents. Specifications or information about these materials may be obtained from the Department TA.
16. Packaging requirements other than marking are not contained in this document but are specified in D-LM-008-001/SF-001 for general use, and D-LM-008-036/SF-000 for commercial products and specific commodity specifications. However, this specification supersedes all these specifications when determining the minimum marking requirements.
17. Dangerous goods. Interior packages and shipping containers enclosing materials defined as dangerous goods in accordance with the Transportation of Dangerous Goods Act, the Transportation of Dangerous Goods Regulations, Part 1 and/or the Hazardous Products Act, must be marked as specified in these acts and regulations.
18. Non-specification materials. Any material may be used when permitted by the Technical Authority (TA) designated on the contract.
19. Standard symbology for bar coding is shown in Annex A (extracted from MIL-STD-129 with additions to meet DND requirements) which outlines the requirements for bar coding as referenced in STANAG 4329, AAITP-09 and NATO AAP-44(A).

Method of Marking

20. The DND/CAF has modernized its package marking through the addition of Machine Readable Information (MRI) in the form of 1- and 2-Dimensional bar codes to the Human Readable Information (HRI) that has been the dominant form of package marking. [Figure 3-2](#) fully defines the combinations of marking to be applied based on the data content and item management principles associated with the items contained within the package.
21. Package marking of Departmental materiel must be in MRI format, HRI format, or both, depending on:
 - a. the level of rigor of item-level life cycle management as required in A-LM-505-703/JS-001 and specified by the TA;
 - b. the available marking space on the packaging;
 - c. the specific data element(s) required to support [paragraph 21.a](#) above (e.g. UII, NSN, Part Number, manufacturer NCAGE, batch, expiry date); and/or
 - d. any authorized variance or special request made by the Department TA.

22. MRI and HRI must be formed in accordance with the requirements of this specification and comply with any additional package marking requirements of AAITP-05, AAITP-08, STANAG 2290, STANAG 4281 and STANAG 2494. For serially managed items as defined in A-LM-505-703/JS-001, package MRI and HRI requirements specified in STANAG 2290 and AAITP-08 take precedence over AAITP-05, STANAG 4281 and STANAG 2494 where conflicts may occur. Additional Guidance on Item Unique Identification (IUID) can be found in STANREC 4782 and AUIDP-1.

23. MRI and HRI applied must be in accordance with Annex B of this document and AAP-44(A), unless otherwise required.

- a. When space does not permit placing all required markings on one surface of the unit package, bar code labels/markings must be placed on an adjacent or reverse side of the package or on an attached identification tag.
- b. Bar code marking(s) placed inside a transparent bag/container must be machine readable from the outside of the bag/container. Similarly, bar code markings on containers which are shrink wrapped or stretch wrapped into a unit load must be machine readable from the outside of the load in at least one location.
- c. When cleats, strapping, package configurations, or other required markings interfere with placement of the bar code markings, as described, the bar code markings will be placed as near as practicable to the prescribed area. When it is necessary to locate the symbol below the identification data marking, a minimum separation of 3.2 mm must be maintained between the marking and the symbol.
- d. Bar code markings applicable to a Military Shipping Label (MSL) must be applied as illustrated in [Figures B-12 to B-14](#) and in accordance with STANAG 2494 and AAITP-02. DND primarily utilizes the minimum and optional formats which do not include a PDF417 on the MSL however, in some instances, suppliers may additionally provide the PDF417 on the MSL which is acceptable.
- e. **Def = j.** Military shipping label (MSL). An address label that is unique to defense shipments and applied to each shipment unit in a consolidated shipment unit (see [Figure B-13](#)).
- f. Bar code markings applicable to unpacked major equipment must be applied to the right of or beneath the identification data marking.
- g. Bar code markings must be applied to all Sets, Kits or Outfits (SKO). The NATO Stock Number (NSN) of the complete SKO must be bar coded. All containers in multiple container shipments must be bar coded with the applicable elements consistent with the application of [paragraph 3.a](#).
- h. Sensitive, controlled, and pilferable items requiring omission of identification marking from outside transport package must contain bar code markings omitting the HRI.
- i. Bar code markings may be applied either by label or directly printing on printable surfaces. On surfaces that absorb, smudge or otherwise distort the integrity of the printed bar code, e.g. a porous material, only labels must be applied.
- j. On wooden containers the labelling area should be given a smooth coat of non-contrasting colour lacquer or paint before application. A waterproof, transparent, plastic, protective over-coating must be placed over the labels.

24. The requirements for Package MRI and HRI must be applied per [Figure 3-2](#) below from D-02-002-001/SG-001 and [Figure 3-3](#). Additionally, examples of [Figures 3-2](#) and [3-3](#) requirements applied to common package marking are illustrated in [Figure 3-5](#).

Priority	Information Element	Serially Managed			Non-Serially Managed		
		Item	Unit Package	Intermediate and Exterior	Item	Unit Package	Intermediate and Exterior
1	UII (see NOTE 10)	MRI and optionally HRI where space is available MRI Format: IUID Compliant ECC 200 Data Matrix (see NOTE 9)	MRI and optionally HRI where space is available MRI Format: IUID compliant PDF417 on packaging (see NOTE 9)	MRI MRI Format: IUID compliant PDF417 on packaging (see NOTE 9)	N/A	N/A	N/A
2	COMMERCIAL IDENTIFIERS a. Global Trade Identification Number (GTIN) or unique product traceability number when not using GS1 GTIN	MRI and HRI MRI Format: Code 128 (GS1) or ECC 200 Data Matrix NOTE: By exception GS1 DataBar and GS1 DataMatrix may be used	MRI and HRI MRI Format: IUID compliant PDF417 on packaging For Unit Container, however it may alternatively appear in Code 39/128 NOTE: By exception GS1 DataBar and GS1 DataMatrix may be used	MRI and HRI MRI Format: IUID compliant PDF417 For Intermediate Container, however it may appear additionally in Code 39/128 NOTE: By exception GS1 DataBar and GS1 DataMatrix may be used	MRI and HRI MRI Format: Code 128 (GS1) NOTE: By exception GS1 DataBar and GS1 DataMatrix may be used	MRI and HRI MRI Format: Product Identification PDF417 on packaging (see NOTE 11)	MRI and HRI MRI Format: Product Identification PDF417 on packaging (see NOTE 11)
	b. Universal Product Code (UPC) (if applicable)	MRI Format: UPC-A or UPC-E	MRI Format: UPC-A or UPC-E	MRI Format: IUID compliant PDF417 on packaging	MRI Format: UPC-A or UPC-E	MRI Format: UPC-A or UPC-E	MRI Format: Product Identification PDF417 on packaging
3	LOT AND/OR BATCH	MRI and HRI on the item MRI Format: IUID compliant ECC 200 Data Matrix – If the Lot or Batch is used to form the UII or alternatively Code 39/128 if the Lot or Batch is not used to form the UII	MRI and HRI MRI Format: IUID compliant PDF417 –	MRI and HRI MRI Format: IUID compliant PDF417 –	MRI and HRI on the item Code 39/128 Optional for items where Lot/Batch are not used to manage items post-production	MRI and HRI MRI Format: Product Identification PDF417	MRI and HRI MRI Format: Product Identification PDF417 on packaging
4	QUANTITY	N/A	N/A	MRI and HRI MRI Format: IUID compliant PDF417	N/A	MRI and HRI MRI Format: Identification PDF417	MRI and HRI MRI Format: Identification PDF417
					The encoded "quantity" must match the GTIN or commercial product identifier quantity or the number of items associated with a part number in the pack		
5	MANUFACTURER ENTERPRISE IDENTIFIER (EID) (e.g. NCAGE, DUNS) or another acceptable EID	MRI and HRI on the item MRI Format: IUID compliant ECC 200 Data Matrix preferred or alternatively Code 39/128 if the Manufacturer Enterprise Identifier is not used to form the UII	MRI and HRI MRI Format: IUID compliant PDF417	MRI and HRI MRI Format: IUID compliant PDF417	MRI and HRI MRI Format: Code 39/128	MRI and HRI MRI Format: Product Identification PDF417 on packaging	MRI and HRI MRI Format: Product Identification PDF417 on packaging
					Optional for items managed only by their commercial marking Minimum HRI is the manufacturer's name		
6	MANUFACTURER ORIGINAL PART NUMBER (if applicable)	MRI and HRI on the item MRI Format: IUID compliant ECC 200 Data Matrix if individual data elements are used to create the UII versus a single data item UII (e.g. 25S or 18S)	N/A	N/A	N/A	N/A	N/A
7	CURRENT PART NUMBER	MRI and HRI on the item MRI Format: Code 39/128 or optionally a separate Data Matrix	MRI and HRI MRI Format: IUID compliant PDF417	MRI and HRI MRI Format: IUID compliant PDF417	MRI and HRI MRI Format: Code 39/128	MRI and HRI MRI Format: Product Identification PDF417	MRI and HRI MRI Format: Product Identification PDF417

Data Elements, Priority and Marking Formats (Sheet 1 of 2) Figure 3-2

Priority	Information Element	Serially Managed			Non-Serially Managed		
		Item	Unit Package	Intermediate and Exterior	Item	Unit Package	Intermediate and Exterior
	NOTE: The Current Part Number (i.e. DI=30P) will be used to designate the part number at the time the marking is applied which in some cases will be the same as the original part Number	NOTE: Since the UII stays the same through life and the Current Part Number may change it will not be encoded in the IUID compliant ECC 200 Data Matrix	May also be additionally Code 39/128	May also be additionally Code 39/128	Optional for items managed by GTIN/UPC or similar commercial identifiers	Optional Code 39/128 for items managed only by GTIN/UPC or similar commercial identifiers	
8	MANUFACTURER SERIAL NUMBER (if available)	MRI and HRI MRI Format: IUID compliant ECC 200 Data Matrix	MRI and HRI MRI Format: IUID compliant PDF417	MRI and HRI MRI Format: IUID compliant PDF417	MRI and HRI MRI Format: Code 39/128 Optional Code 39/128 for items DND managed only by GTIN/UPC or similar commercial identifiers	MRI and HRI MRI Format: Product Identification PDF417	MRI and HRI MRI Format: Product Identification PDF417
9	NSN	MRI and HRI MRI Format: Code 39/128	MRI and HRI MRI Format: IUID compliant PDF417 on exterior container	MRI and HRI For Unit and Intermediate Container, however it may appear alternatively or additionally in Code 39/128	MRI and HRI MRI Format: Non-IUID ECC 200 Data Matrix or Code 39/128	MRI and HRI MRI Format: Product Identification PDF417 on exterior container	MRI and HRI MRI Format: Product Identification PDF417 on exterior container
						For Unit Container however it may appear alternatively or additionally in Code 39/128	For Intermediate Container, however it may appear alternatively or additionally in Code 39/128
					N/A for commercial items DND managed only by their commercial marking		
10	ITEM NAME	HRI	HRI	HRI Optional	HRI	HRI	HRI Optional
IF APPLICABLE							
11	MILITARY TYPE DESIGNATION	HRI	HRI	HRI	HRI	HRI	HRI
12	GOVERNMENT OWNERSHIP DESIGNATION	HRI	HRI	HRI	HRI	HRI	HRI
13	SPECIAL CHARACTERS	HRI	HRI	HRI	HRI	HRI	HRI
14	CONTRACT NUMBER or other acquisition instrument identification	HRI	HRI	HRI	HRI	HRI	HRI
15	DESIGN ACTIVITY	HRI	HRI	HRI	HRI	HRI	HRI
16	DATE OF MANUFACTURE	HRI	HRI	HRI	HRI	HRI	HRI
17	CURE DATE	HRI	HRI	HRI	HRI	HRI	HRI
18	SHELF-LIFE	HRI	HRI	HRI	HRI	HRI	HRI

Data Elements, Priority and Marking Formats (Sheet 2 of 2) Figure 3-2

NOTES

1. In [Figure 3-2](#), information elements are presented in the order of descending priority.
2. Department prefers both MRI and HRI as described above. Where that is not feasible, contact the Department TA for guidance.
3. Order of descending priority should not be misconstrued as the order in which information must physically appear in the marking area.
4. [Figure 3-2](#) also indicates whether an information element needs to be included as HRI, MRI or both.
5. Technical aspects of acceptable MRI encoding are found in the relevant section of the NATO Standard Barcode Handbook AAP-44 (A) for Code 39, Code 128 and Data Matrix bar codes.
6. Detailed technical directions for creating the IUID mark in Data Matrix bar code format are found in ANSI MH10.8.17.
7. Examples of preferred, optional and alternate MRI/HRI layouts for both IUID and non-IUID compliant item marks can be found in Table 2 of D-02-002-001/SG-001.
8. The acceptable Issuing Agency Codes are found in Table 3 of D-02-002-001/SG-001.
9. Table 4 of D-02-002-001/SG-001 identifies the possible encoded Application, Data and Text Element Identifiers while Table 5 identifies the combination allowable for construct 1 and construct 2 UII's.
10. The item marking UII element MRI may include encoding of a single data element UII or its component parts that may include one or more of the items listed above. The Department does not require the individual data elements used to create the single data element UII to be additionally encoded as specified by NATO AAITP-08. Inclusion of the individual data elements particularly for legacy or remarking where the component elements such as serial number may have no inherent relationship to the item itself presents a data risk that is unnecessary. Detailed guidance on the proper encoding of UII Marks may be found in ANSI MH10.8.17, ANSI MH10.8.2, ANSI MH10.8.6, and for commercial applications GS1 General Specification.
11. For all non-serially managed items, compliant package marking must include the HRI "ID DATA" marking placed adjacent to the Product Identification PDF417 as defined in [Figure 3-3](#) of this specification and Data Item Description (DID) Req. Name-LS-XXX, Package Marking.
12. For all serially managed items, IUID compliant item marking must include the HRI "UII" must be placed adjacent to the UII Item Mark and for IUID compliant package marking the HRI "ID DATA INCLUDES UIIs" marking must be placed adjacent to the Product Identification PDF417 as defined in [Figure 3-3](#) of this specification and Data Item Description (DID) Req. Name-LS-XXX, Package Marking.
13. Where IUID compliance was not intended no such HRI must appear.
14. For commercial items managed by the Department only by their commercial marking all other data elements and data formats in [Figure 3-2](#) are optional unless specified by the Department TA and incorporated into the contract.

Marking	Unit Pack		Intermediate Pack		Transport Package		Reference Paragraph(s)/ Figure(s)
	HRI	MRI	HRI	MRI	HRI	MRI	
ITEM IDENTIFICATION MARKINGS							
NATO Stock Number (NSN)	M/R	M/R	M/R	M/R	M/R	M/R	
NCAGE/Mfr's Part Number ¹	C/R	C/R	O	C/R	O	C/R	
Global Trade Item Number (GTIN)	C	C	C	C	C	C	
Universal Product Code (UPC)	C	C	C	C	C	C	
Nomenclature	M		M		M		
Mfr's Serial Number ²	C/R	C/R	O	C/R	O	C/R	
Unique Item Identifier (UII)	C/O	C/R	C/R	C/R	C/R	C/R	
Lot/Batch	C	C	C	C	C	C	
Quantity/Unit of Issue	M/R	M/R	M/R	M/R	M/R	M/R	
Contract Data	O		O	O	O		
NATO Packaging Level/Date Packed	C		C		C		
SPECIAL MARKINGS							
Desiccated Packs (Method 50)	C				C		
ESD – Electrostatic Discharge Sensitive Devices/Sensitive Electronic Devices	C				C		
ISPM 15 (Wood Packaging Materials)	C				C		
Proper Shipping Name (Dangerous Goods)	M		M		M		
Shelf-life Markings	C		C		C		
Radio Frequency Identification (RFID)		O		O		O	
HANDLING AND STORAGE SYMBOLS/MARKINGS							
Cautionary/Warning Labels	C		C		C		
Cube/Outside Dimensions (LXWXH)	C		C		C		
Gross Weight	C		C		C		
Handling/Storage Symbols	C		C		C		
Centre of Gravity					C		
Lift Points					C		
Load Bearing Areas					C		
Sling Points					C		
Key: M – Mandatory; R – Required (for serialized items); O – Optional (mandatory if MRI “ Full Optional Format” MSL is used); C – Conditional (when specified in contract or commodity specification); HRI – Human Readable Interpretation; MRI – Machine Readable Interpretation (bar code)							

Figure 3-3 Summary of Package Marking Requirements

¹ Apply when specified contractually or when the NSN is not available.

² Apply Unique Identification.

	HRI	MRI	Reference Figure(s)
SHIPPING LABEL			
Carrier Tracking Number (commercial)	M/R	M/R	
Commodity Special Handling Codes		C	
Consignment Number	C	O	
Contract Data	M/R	O	
Cube/Outside Dimensions	M		
Length	M		
Width	M		
Height	M		
Data Packed for Shipment	M		
Global Trade Item Number (GTIN)	C	C	
Gross Weight	M	O	
Piece Numbers	M		
Port of Debarkation (POD)	C		For international consignments
Port of Embarkation (POE)	C		For international consignments
Priority Marks	M		
Proper Shipping Name (Dangerous Goods)	M		
Quantity		O	
Radio Frequency Identification (RFID)		O	
Ship From (Consignee)	M		
Ship To (Consignor)	M		
Shipping Nation	M		
Serial Shipping Container Code (SSCC)	M	M	
Unique Item Identification (UII)		O	
Universal Product Code (UPC)		O	
Key: M – Mandatory; R – Required (for serialized items); C – Conditional; O – Optional			

Figure 3-4 Summary of Marking Requirements – Shipping Label

25. Shipping Label “Address”:

- a. Serial Shipping Container Code (SSCC);
- b. Unique National Tracking Identifier (optional);
- c. Priority Mark from Consignor;
- d. Ship to/Consignee;
- e. Point of Embarkation (POE)/Point of Debarkation (POD) (optional);
- f. Weight, Cube and Outside Dimensions;
- g. Piece Numbers;
- h. Date Packed for Shipment; and
- i. Shipping Nation.

26. **Shipping instructions.** Shipping instructions must consist of the following:
- Consignee (see [paragraph 26.b](#));
 - Consigner; and
 - Case No. ___ of ___ (total number cases in shipment).

NOTE

If shipment is consigned to a consignee for trans-shipment to ultimate destination, the shipping container must indicate after consignee FOR (ultimate recipient).

- Gross Weight and Cube/Outside Dimensions (when applicable). Measurements are expressed in the International System of Units (SI). Rounding should be to the nearest 0.01 metre, i.e. centimetre (cm), to the nearest cubic decimetre (dm³) or cubic metre (m³), i.e. 1 dm³ or 0.001 m³, or to the nearest kilogram (kg), as applicable. The measurements must be preceded by WT or CU, as applicable.
 - Gross weight.** The weight shown on the shipping containers must be the gross weight, indicated to the nearest kilogram (2.2 lb). The abbreviation **WT** must be used.
 - Cube.** The cube must be the cubic displacement of the shipping container, bundle, pallet load or the item, whichever is the greater, calculated from the extreme overall length, width, and height dimensions. It must be shown in cubic metres/feet to the nearest 0.003 m³ (1/10 cu ft), expressed decimally. Irregular, cylindrical, and round items must be considered as rectangular. The abbreviation **CU** must be used.
 - Outside dimensions.** The outside dimensions must be shown on all shipping containers, bundles or palletized unit loads having any single dimension 183 cm (72 in.) or more. Outside dimensions must be shown in the order of length (L), width (W) and height (H), and must appear directly under weight and cube markings. Give an example L X W X H?
27. **Shipping Documents.** The contract supply voucher, release NOTE, packing list, etc., must be enclosed in a water-resistant envelope which must be securely affixed to one end of the last container in each shipment.
28. Other documents which may accompany the shipment must be placed on top of the packed stores in the last container in the shipment and the container must be marked to indicate the enclosure. The markings must be on the same face as the envelope referred to in [paragraph 27](#).

Machine Readable Information

29. Properly encoded data compliant with standard bar code symbology, as described in Annex B, AAITP-05, AAITP-08, STANAG 2290, STANAG 4281, AAITP-02 and STANAG 2494 and in accordance with guidelines defined in D-02-002-001/SG-001, must be applied to unit, intermediate and shipping containers, where required by container marking requirements of this specification.

Human Readable Information

30. Human Readable Information (HRI) must be formed in accordance with the requirements of this standard and comply with any additional item marking requirements of D-02-002-001/SG-001 in addition to the shipment and storage requirements of this document, STANAG 4281 and AAITP-05. For serially managed HRI requirements specified in D-02-002-001/SG-001, STANAG 2290 and AAITP-08 take precedence over MIL-STD-130 where conflicts may occur.

Legibility

31. All markings must be large enough to be easily readable by a handheld bar code scanner in the case of MRI and at a distance with the human eye consistent with common practices for that package and consistent with the space available. Lettering must not be over 76 mm (3 in.) in height. All markings must include HRI unless otherwise specified in this specification.

32. UID required package PDF417 bar codes must meet the requirements of D-02-002-001/SG-001. IUID required PDF417 package marks are constructed in accordance with STANAG 2290, AAITP-08, AAITP-05 and STANAG 4281.

33. Marking must be accomplished by the use of labels, stamping, polymer fusion, stenciling, mechanical printing, typing, or tagging, dependent upon the size of space available, the material being marked and its environmental constraints.

- a. Lettering must be dependent upon the size of space available.

34. When authorized, hand printing in capital letters may be permitted by the Department TA provided that the lettering is uniform and legible. However, system generated labels are to be applied immediately when connectivity to DRMIS is re-established.

35. Printing inks and dyes must be fade resistant. Markings applied by means of printing inks and dyes must be clearly legible after 48-hours exposure in a weatherometer, in accordance with Method 122.2 of Specification 1-G P-71.

36. All markings and specifications will comply with this document and as directed in D-02-002-001/SG-001.

37. Old markings which are not applicable may be obliterated using paint conforming to CAN/CGSB-1.47-M89.

Labels

38. Marking may be applied by tagging, stenciling, stamping, machine printing, or labeling (using preprinted labels). Although machine printing is preferred, hand printing may be used for marking packs and containers if demanded by operational requirements as well as when IT systems are unavailable. Hand printing is not authorized for ammunition containers.

39. Labels must be of a water-resistant grade of paper, film, or plastic, coated on one side with water-insoluble, permanent type adhesive. The adhesive must adhere to metal, plastic, aluminum or fiberboard surfaces under high and low temperatures. Labels must have a finish suitable for printing and writing on with ink without feathering or spreading, be capable of withstanding normal handling and storage conditions, and remain securely in position. Application specific performance criteria and durability requirements to ensure functionality in various climatic environments should be tailored, if required, using MIL-PRF-61002.

40. When labels are secured to scrim-backed materials by means of pressure-sensitive water-resistant transparent tape conforming to 43-GP-3, the tape must completely encircle the packed item.

Stencils

41. Any opaque, non-fading, fast-drying, weather-resistant stencil ink, lacquer, paint, or enamel must be used for stencil marking. MIL-DTL-64159 or MIL-DTL-53039 paint must be used for stenciling containers that have a chemical agent resistant coating (CARC) applied to them.

42. Unless otherwise specified, black stenciling ink must be used for light-coloured surfaces and white stenciling ink for dark-coloured surfaces. Ink must conform to A-A-208 for porous and nonporous surfaces. Stenciling with paint must conform to A-A-1588. Stencil lacquer must conform to TT-L-26.

Tags

43. Tags must conform to 6.15M and must be mechanically printed or typed.

44. Tags must be securely affixed to wooden surfaces by stapling, tacking, or nailing. A minimum of four fasteners must be used. Staples, tacks, or nails must not protrude through the container walls.

45. When the method of affixing tags by stapling, tacking, or nailing is impracticable, tags must be secured as follows:

- a. Wire ties must be used when the wires will not cause damage to the item.
- b. Strong twine ties may be used when possible damage to the items would result from the use of wire.
- c. Twine may be used for small identification tags in interior packs. Nothing about these.

- d. Tags used in the marking of shipping containers must be waterproofed after markings have been applied, by spraying or brushing with water-resistant label adhesive or clear lacquer conforming to TT-L-26.

Markings of Interior Containers

46. Unless specifically exempted in the contract or solicitation, the following identification text information must be marked on all unit packs and intermediate containers, in the order listed. Additional identification marking may be required by the contract and must be placed either below the identification text marking or in a conspicuous location on the identification-marked side of the container.

47. There are three types of interior container markings:

- a. Package content identification markings;
- b. Special markings; and
- c. Handling and storage markings.

NOTE

When specified or permitted, identification markings may be omitted from commercially identified items in dispensing containers, e.g. shoe polish, baking soda, cleaner.

48. Identification Markings:

a. **HRI Markings.** The following minimum HRI markings are to appear on packages or containers, as applicable:

- (1) NSN. As text, i.e. not coded, the NSN must include the appropriate spaces or dashes and be sited adjacent to any required prefix or suffix, e.g. in the contract;
- (2) Manufacturer's Name;
- (3) Manufacturers Part Number (MFR/PN). When no NSN is specified or available, MFR/PN must be applied as part of the identification marking;
- (4) Commodity (Item) Identification. This NSN must be the Approved Item Name (AIN), also known as nomenclature as per ACodP-0;
- (5) Specification number (type, grade, class) of item;
- (6) Quantity (QTY)/Unit of Issue (UI). The quantity/unit of issue packed must be applied as part of the identification marking, unless otherwise stated or if there is no current AIN;
- (7) Contract Data. The contract number or purchase order number, as applicable, may be applied as part of the identification marking;
- (8) Serial Number (Ser No). As defined in AAP-23 it may be required for individual item identification/control;
- (9) Batch/Lot Numbers. A number allocated to a batch or lot, a quantity or consignment of goods produced at one time, which uniquely identifies that batch or lot;
- (10) Qualification number;
- (11) Date of repair or overhaul;
- (12) Name of repair or overhaul contractor;
- (13) Modification status; and
- (14) Other data required by contract or commodity specification.

- b. **MRI markings.** The following data elements must be applied using the listed bar codes unless otherwise specified and may optionally include HRI:
- (1) Unique Item Identifier (Product Identification PDF417);
 - (2) Serial Number (Code 39/128 and/or incorporate into the Product Identification PDF417);
 - (3) Manufacturer code (MFR), MFR/PN, Ser No (Code 39/128 and/or incorporate into the Product Identification PDF417); and
 - (4) The NSN, which must consist of the basic 13 data numbers, omitting any prefixes, suffixes, spaces or dashes. The MFR/PN must be used when no NSN is specified or available (Code 39/128 and/or incorporate into the Product Identification PDF417).
- c. The Product Identification PDF417 also knowns as the ID Data PDF417 contains the UII information for serially managed items and non-UII information for non-serially managed items with the appropriate free text as shown to the left or at least adjacent to the PDF417 bar code containing that information. The HRI for all UII(s) may also be listed if space is available but is not required. Examples of the Product Identification PDF417's are shown in [Figure 3-5](#) below. For non-serially managed information the free text would be "ID DATA" and no UII information would be encoded in the Product Identification bar code:




ITEM	PDF417	STRUCTURE
1	 <p>This symbol represents a Unit Container a <u>single IUID serially managed item in a non-serialized container</u>. The mark also includes the additional data of the NCAGE, NSN, Serial Number, Quantity, and Current Part Number at the time of marking.</p>	<p>[>^{R_S}06^{G_S}17VSBNV7^{G_S}N123412 1231234^{G_S}25SDSBNV79876A1B2C324^{G_S} SA1B2C324^{G_S}30P9876-1^{G_S}Q1^{R_S}EOT</p>
2	 <p>This symbol represents a Unit Container a single non-serially managed, but lot/batch managed item. NOTE: If you remove the lot/batch “1T” data identifier and value from the encoded string you would have a non-serially managed item mark since there is no UII “25S” present. The mark also includes the NCAGE, NSN, Serial Number, Quantity and Current Part Number at the time of marking.</p>	<p>[>^{R_S}06^{G_S}17VSBNV7^{G_S}N123412 1231234^{G_S}1T279C^{G_S}SA1B2C324^{G_S}30 P9876-1^{G_S}Q1^{R_S}EOT</p>
3	 <p>This symbol represents an Intermediate or External Container with three GTINS that are <u>non-serially managed items from a single manufacturer</u>. A Unit Container would only list the manufacturer and a single GTIN and would not require quantity to be listed. These items are considered to be packaged consumables. Where there is a single GTIN in the package then the package itself could be marked with that GTIN (i.e. a case of consumable items). This symbol also includes NCAGE and the Quantity of each GTIN item included in the container. NOTE: For all levels of packaging where the supplier is not authorized to utilize a GTIN, a unique product traceability number may be substituted for GTIN using the Data Identifier “20T” in lieu of “8P”.</p>	<p>[>^{R_S}06^{G_S}17VSBNV7^{R_S}06^{G_S} 8P04012345123456^{G_S}Q5^{R_S}06^{G_S}8P10 012345678902^{G_S}Q2^{R_S}06GS8P00012345600 012^{G_S}Q12^{R_S}EOT</p>

Figure 3-5 (Sheet 1 of 3) Product Identification PDF417 Package Marking



ITEM	PDF417	STRUCTURE
4	 <p>This symbol represents an Intermediate or External Container with IUID serially managed items and a single supplier Current Part number applicable to all items listed.</p> <p>This symbol also includes NCAGE, NSN and Quantity for the container as well as the items actual manufacturer Serial Numbers for each of the UII's. There is not always a match between the value of the serial number used to make the UII and the manufacturer's serial number typically because a marking company or other non-OEM applied the UII after production was completed and used their own NCAGE and sequencing information.</p>	<pre>[>R_S06G_S17VSBNV7G_SN12341212 31234G_SQ5G_S30P12R_S06G_S25SD SBNV7A1B2C324G_SSZQ123456R_S06 G_S25SDSBNV7A1B2C32535G_SSZQ1 234575R_S06G_S25SDSBNV7A1B2C326 G_SSZQ123458R_S06G_S25SDSBN V7A1B2C327G_SSZQ123459R_S06G_S2 5SDSBNV7A1B2C328G_SSZQ123450R_SEOT</pre>
5	 <p>This symbol represents an Intermediate or an External Container with mixed IUID serially managed items and three GTINS that are non-serially managed items from a single manufacturer.</p> <p>This symbol may be used when a set of material makes an assembly where one or more of the individual items are IUID serially managed and the container itself is also IUID serially managed. The container in this case would, in addition to this product identification label, require an Item Unique Identification (IUID) label in accordance with Figure 3-2 for IUID serially managed item, priority 1.</p> <p>This symbol also includes the NCAGE and NSN for each of the two distinct items as well as Quantities of each.</p>	<pre>[>R_S06G_S17VSBNV7G_SN1234 121231234G_SQ5G_S30P12R_S06 G_S25SDSBNV7A1B2C324G_SSA1B2 C324R_S06G_S25SDSBNV7A1B2C325 35G_SSA1B2C325R_S06G_S25SD SBNV7A1B2C326G_SSA1B2C326R_S 06G_S25SDSBNV7A1B2C327G_SSA1 B2C327R_S06G_S25SDSBNV7A1B2C 328G_SSA1B2C328R_S06G_SN98 76989898769G_S8P04012345123456G_S Q5R_S06G_S8P10012345678902GSQ2 R_S06G_S8P00012345600012G_S Q12R_SEOT</pre>

Figure 3-5 (Sheet 2 of 3) Product Identification PDF417 Package Marking


ITEM	PDF417	STRUCTURE
6	<div data-bbox="412 170 764 302" style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> ID DATA INCLUDES UIIs  </div> <p>This symbol represents an Intermediate or an External Container with mixed IUID serially managed items and three GTINs that are non-serially managed items from multiple manufacturers.</p> <p>This symbol may be used where one or more of the individual items are IUID serially managed and the IUID serially managed items are from more than one manufacturer. This example would typically apply when shipments of supplies are done internally to the Department. While this could be used where no IUID serially managed items are included, that shipment would likely be considered merely a commodity shipment and either the NSN or the GTIN would be sufficient. This symbol also includes the NCAGE for each of the 2 suppliers as well as NSN and Quantities for the ones with an NSN.</p>	<p>[>R_S06G_S17VSBNV7G_SN 1234121231234G_SQ5G_S30P12 R_S06G_S25SDSBNV7A1B2C324 G_SSA1B2C324R_S06G_S25SD SBNV7A1B2C32535G_SSA1B2C325R_S 06G_S25SDSBNV7A1B2C326G_SSA1 B2C326R_S06G_S25SDSBNV7A1B2 C327G_SSA1B2C327R_S06G_S2 5SDSBNV7A1B2C328G_SSA1B2C328 R_S06G_SN98769898769G_S 8P04012345123456G_SQ5R_S06 G_S8P10012345678902G_SQ2R_S 06G_S8P00012345600012G_SQ12 R_S 06G_S17VGDQR7G_S25SDSBNV 7A1B_SSX562R_S06G_SN98 76989898769G_SQ3R_SEOT</p>

Figure 3-5 (Sheet 3 of 3) Product Identification PDF417 Package Marking

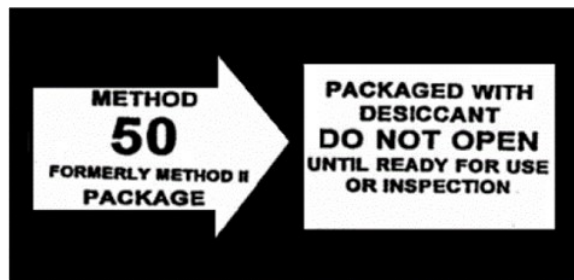
49. **Special Markings.** Characteristics of an item may necessitate additional storage and handling information in the form of cautionary labels or text e.g. item’s limited life (shelf-life, packed with desiccant), ESDS, Hazardous, etc.

- a. Combined NATO Packaging Level/Date Packed Marking. This has two parts. Firstly, the NATO (Military) packaging level which refers to the preservation and packaging requirements as applicable and as defined in APP-21. This marking must be shown below the item identification marking on unit packages and on intermediate containers. Secondly, in the case of multiple unit-packs in an intermediate pack, the earliest unit Date Packed must be marked on the intermediate pack, e.g. the mark.

"NATO 2 11/2020 indicates NATO Level 2 Packaging and a date packed of November 2020"

50. **Method 50 – Desiccated Packages.** Marking of interior packs must be in red letters to indicate the conditions under which the package may be opened. Similar marking on exterior packs must be in black letters to avoid confusion with Hazardous Materials markings.

- a. **Unit or intermediate packs.** An item preserved with desiccant must have the warning markings applied in red letters on the flexible water-vapour resistant barrier and on each subsequent wrap or container. When sufficient space is not available, or the barrier is a metal container, a label conforming to Figure # must be used.



- b. Alternatively, the following text in red letters, can be applied:

METHOD 50 PACKAGE - DO NOT OPEN EXCEPT FOR USE OR INSPECTION / EMBALLE SUIVANT LA METHODE 50 - NE PAS OUVRIR SAUF POUR USAGE OU INSPECTION

- c. **Shipping Container.** Each shipping container containing one or more Method 50 packages must have the following markings applied in bilingual English/French format, in black letters:

CONTAINS METHOD 50 PACK(S) / CONTIENT DES ARTICLES EMBALLÉS SUIVANT LA MÉTHODE 50

- d. However, if the shipping container is an integral part of the Method 50 package, the following markings must be applied in bilingual English/French format, in black letters:

METHOD 50 - DO NOT OPEN EXCEPT FOR USE OR INSPECTION / MÉTHODE 50 - NE PAS OUVRIR SAUF POUR USAGE OU INSPECTION

- e. **Shelf-life markings.** The type of shelf-life must be shown below the item identification marking on unit packages and on intermediate and exterior containers or unpacked items. Items that do not deteriorate do not require shelf-life markings. The shelf-life codes are shown below in [Figure 3-6](#).

- f. There are two types of shelf-life markings:

(1) **Type I shelf-life item.** An individual item of supply which is determined through an evaluation of technical test data and/or actual experience, to be an item with a definite non-extendible period of shelf-life referred to as the Shelf-life Expiry Date (SLED). One exception is Type I medical shelf-life items that may be extended if they have been accepted into and passed nationally recognized testing.

(2) **Type II shelf-life item.** An individual item of supply having an assigned shelf-life time period that may be extended after completion of visual inspection/certified laboratory test and/or restorative action.

- g. The minimum marking consists of: Shelf-life Code and Date, i.e. Date of Manufacture ([paragraph 50.g.\(1\)](#)), Cure Date ([paragraph 50.g.\(2\)](#)), Date of Assembly ([paragraph 50.g.\(3\)](#)), Packed Date ([paragraph 50.g.\(4\)](#)), Expiry Date ([paragraph 50.g.\(5\)](#)); apply one, as applicable) and an Inspection/Test Date ([paragraph 50.g.\(6\)](#)).

(1) **Date of Manufacture.** Date the item, material or commodity was fabricated, processed, produced, or formed for use. For all items where this is a requirement the date must be applied. For Type I medical items with an expiry date, the date of manufacture will not be shown.

(2) **Cure Date(d).** Date the item or material was altered industrially. For all items required to be marked with a cure date(d), e.g. vulcanized rubber (or synthetic elastomers), it must be applied using the calendar quarter and year (e.g. 2Q1999).

(3) **Date of Assembly.** Date the items were assembled into a larger unit (component, assembly, sets, kits, or outfits [SKO]). For all items where this is a requirement this date must be applied. When more than one shelf-life item is packed as part of or comprising an assembly, the earliest expiry/inspection/test/ cure date must be shown on the shipping container.

(4) **Date Packed** (or Packaging Date). Date on which the product was packed in the unit pack. For all items where this is a requirement this date must be applied.

(5) **Shelf-life Expiry Date** (SLED). Date beyond which shelf-life items are to be suspended from issue or use i.e. expiration or maximum durability date. This is only required for Type I shelf-life items. For drugs and biological items (potency dated materials), the expiry date must be marked as required by statutes or contract. Otherwise, when the month is included in the expiry date, the month will be deNOTEd by name and not by a number, e.g. 12 August 2000 or 12 Aug. 2000 but not 12 08 2000. Cure-dated items must have the expiry date, as text, shown by quarter and calendar year (e.g. 2Q1999). If the expiry date is required to be bar coded the format 'YYMMDD' must be used and this bar code must be in addition to the text HRI.

- (6) **Inspection or Test Date.** Def = This is required for Type II shelf-life items. This date must be shown by month and calendar year (e.g. 12/1999). This indicates the date on which shelf life must expire unless extended because of inspection/test. The manufacturer must provide space for additional inspection/test dates and shelf-life codes as shown in [Figure 3-6](#). This space must be used when the initial date is lined out and subsequent inspection/test dates are applied. This is required for Type II shelf-life items.

NOTE

Items that are nondeteriorative must not require shelf-life markings.

SHELF-LIFE CODES		
Shelf-Life Period	Type I	Type II
Non-deteriorative	0	0
1 month	A	
2 months	B	
3 months	C	1
4 months	D	
5 months	E	
6 months	F	2
9 months	G	3
12 months	H	4
15 months	J	
18 months	K	5
21 months	L	
24 months	M	6
27 months	N	
30 months	P	
36 months	Q	7
48 months	R	8
60 months	S	9
72 months	I	
84 months	T	
96 months	U	
Variable such as 90, 132, 216, etc., months or any other number of months not specifically assigned	V	
120 months	W	
180 months	Y	
240 months	Z	
Military essential and Medical items with shelf-life of greater than 60 months for Type II extendable items		X

Figure 3-6 Shelf-Life Codes

51. **Electrostatic Discharge Sensitive Devices (ESDS).** Electrostatic Discharge Sensitive Devices (ESDS) are defined as electrical and electronic items susceptible to damage from electrostatic discharge (static electricity) brought by physical or near physical contact with an electrostatically charged body. Packaging of ESDS shall be in accordance with AEPP-2, NATO Standard Packaging for Materiel Susceptible to Damage by Electrostatic Discharge. To ensure proper storage, shipping and handling, their packages must be marked with cautionary labels or text.

- a. Unit and intermediate packs containing ESDS electronic components and devices must be marked with a cautionary label as shown in Figure #. ESDS devices require special handling procedures during and after removal from unit packs. The symbol and lettering of each label must be printed in black on a yellow background.



- b. If the appropriate caution label is not available, the ESDS symbol and the following text must be applied.



**CAUTION – DO NOT OPEN EXCEPT AT APPROVED FIELD FORCE PROTECTION WORK STATION
OR
TO BE OPENED BY AUTHORIZED PERSONNEL ONLY. SENSITIVE MATERIAL – AVOID ELECTROSTATIC SOURCES**

52. **Sensitive Electronic Devices.** Sensitive Electronic Devices are defined as electronic items, either alone or as part of assemblies, which are susceptible to damage from one or more of the recognized environmental field force hazards, including electrostatic, electromagnetic, or magnetic forces. To ensure their proper storage, shipping and handling, their packages must be marked with cautionary labels or text. The symbol and lettering of each label must be printed in black on a yellow background.

- a. Unit and intermediate packs must have a caution label affixed to the content identification side.



- b. Exterior containers must have two (2) caution label/markings affixed – one on the content identification side and the other on the container's opposite side.
- c. If the appropriate caution label is not available, the symbol and the following text must be applied.



**CAUTION – DO NOT SHIP OR STORE NEAR STRONG ELECTROSTATIC, ELECTROMAGNETIC, MAGNETIC,
OR RADIOACTIVE FIELDS / ATTENTION – NE PAS TRANSPORTER NI ENTREPOSER PRES DE CHAMPS
ELECTROSTATIQUES, ELECTROMAGNETIQUES, MAGNETIQUES, OU RADIOACTIFS DE FORTE INTENSITE.**

53. **Sensitive Electronic Devices (Other than ESDS).** Packaging containing sensitive electronic devices must be marked with a caution label, as shown in Annex B. The symbol and lettering on each label must be printed in black on a yellow background. This figure also shows the marking to be applied when specific labels are not available.

- a. The intermediate pack/container must have a caution label marking affixed to the identification marked side only.
- b. The transport packages must have the caution label/markings affixed to the identification marked side and on the opposite side thereto.
- c. Where surfaces are unsuitable for stencilling, weatherproof tags or labels are to be used.

54. Subject to the nature of the material packaged, cautionary markings such as FRAGILE, GLASS, POISON, PERISHABLE, KEEP FROM FREEZING (maintain at temperatures above...degrees Celsius), or other special handling markings of a similar nature, must appear on the unit and intermediate containers, as applicable

55. Warning Labels/Marking for Dangerous Goods. The labels and markings specified in the international conventions/regulations and related Allied publications listed under related documents are to be used for dangerous goods items. The proper shipping names and other identification numbers such as UN Identification number must be distinct and separate from the item descriptions and applied accordingly. NOTE the requirements for repeating markings on exterior packs and visibility through any overpacks.

56. **Dangerous Goods.** The terms "Dangerous Goods" (DG) and "Hazardous Materials" (HazMat) are often used interchangeably. Each consignment's packaging and marking must comply with the applicable Law(s) and Regulation(s) and therefore DG is not covered by this specification.

- a. DG is defined as articles or substances which are capable of posing a significant risk to health, safety or property and which are subject to special regulations for their storage and transport. Def = Articles or substance which are capable of posing a risk to health, safety or property and which are subject to special regulations for their storage and transport. Including any substance or item listed in the international carriage of dangerous goods regulations (see related documents) or capable of meeting any of their classification criteria.
- b. HazMat is defined as a substance or material posing a risk to health, safety, and property, the packaging of which is subject to special regulation.
- c. If a Safety Data Sheet (SDS) is required by the Regulation for the substance or article, electronic copies of the English and French SDSes must be provided to the Contracting Authority (CA) prior to shipment, in addition to a hard copy of both accompanying the consignment.
 - (1) Pest Free Wood Products: As defined in ISPM 15, Phytosanitary Measures are the measures taken to reduce the risk of introduction and/or spread of quarantine pests associated with wood packaging material, including dunnage, made of coniferous and non-coniferous raw wood, in use in international trade. Specific markings must be applied on the pest free wood packaging material as shown in Annex B.

Handling and Storage Markings

57. Consignment handling and storage symbols must be in accordance with ISO 780 and below and as shown in Annex B.

- a. **Centre of Gravity.** When the weight of an item is not evenly distributed, the following markings must be applied:
 - (1) A line locating the centre of balance must be extended up from the bottom edge of both sides of all items, which must include vehicles over 3.0 m in length. This line must be 2.5 centimetres (cm) wide by at least 7.5 cm long. It must be identified, by stenciling or printing, in 2.5 cm high letters the words "CENTRE OF GRAVITY" immediately above or alongside the mark;
 - (2) Optionally use ISO 780 symbol "ISO 7000, No. 0627"; and
 - (3) Where manual handling of packaged items is probable, markings indicating the heaviest end must be applied.
- b. **Load Bearing Areas and Lift Points.** When transport packages and contents are subject to damage by bending and twisting from uneven container stresses or strains, load bearing areas and lift points must be marked on the exterior of the container. The words "LOAD BEARING AREA" must be marked on the opposite panels of the container directly over the load bearing areas. The words "FORKLIFT AREA" must be placed over the forklift truck entry points of the skid and rubbing strip construction.
- c. **Sling Points, Unboxed Equipment.** The location of designed sling or lift points must be marked in black. On vehicles, which are painted black or other dark colours, the markings must be white with the words "LIFT HERE" and an arrow pointing to the lifting eyes. For marking un-boxed equipment and vehicles, the paint must be petrol soluble. When space permits, the size of arrow and lettering will be 2.5 cm high.

- d. **Weight, Cube and Dimensions.** The following are to be marked on packages, as appropriate and/or necessary:
- (1) **Weight.** This must be numerically indicated and must be expressed in kilograms to the nearest kilogram. The symbol “kg” must follow the gross weight numerals.

NOTE

National regulations are to be applied.

- (2) **Cube.** The volume of the shipping container, bundle, or secured lift, as calculated (from the overall length, width, and height dimensions) in all cases as if it is a rectangular solid. It must be shown in cubic metres expressed to one decimal place; the numerals followed by the symbol “m³”. However, where the volume is below 0.05 m³ it may be displayed to three decimal places.
- (3) **Outside dimensions.** The length, width and height, are only to be shown on those packages having any single measurement of 1.2 m or more (to the nearest 0.01 m).

Documentation

58. The required documentation must be provided as specified below to ensure proper reconciliation of the expected and delivered shipment as well as facilitate storage, transportation and material management after receipt and acceptance by DND.

- a. **Advance Shipment Notification (ASN).** The supplier must supply all relevant packaging, shipping and transporter tracking information electronically to the procurement authority and must receive notification acceptance in advance of shipment. This submission must be compliant with Data Item Description (DID) Req. Name-LS-XXX, Advance Shipment Notification (ASN).
- b. **Packing Lists.** Each SKO having unlike stock-numbered items, but which are identified by a single stock number, must have a packing list sealed in a water-resistant envelope and securely attached to the exterior surface of each container. When specified in the contract or purchase order, an additional copy of the packing list will also be placed inside the container. When applicable or specified in the contract or purchase order, the packing list must be secured prominently to the top of contents inside the transport package.
 - (1) Non-stock numbered parts, accessories, or attaching hardware must be identified by part number or item nomenclature and must be listed on the appropriate packing list.
 - (2) Shipment of classified material must have the packing list inside the container rather than having it affixed to the outside of the container.
- c. **Shipping documents.** The documents must be applied and positioned as specified below. When space permits, shipping documents being placed on the container's exterior surface must be affixed to the Identification marked side of the container.
 - (1) For shipments of items, one legible copy of the shipping document applicable to each item must be inside the container. At least one legible copy of the shipping documents applicable to each item must be placed in a weather-resistant envelope and attached to the outside of the container.
 - (2) When the storage container is used as the shipping container, the one copy normally placed inside the container must be included with the copy attached to the exterior of the shipping container.
 - (3) At least one legible copy will be furnished to the DND/CAF designated recipient for shipment status.
 - (4) A shipping label, conforming to [Figure B-13](#) or alternatively [Figure B-14](#)/[Figure B-12](#) if approved by the TA, must be affixed to the container where that container is the outermost package for the shipment.

- d. **Documents accompanying shipments of un-boxed items including vehicles.** A minimum of two legible copies of the required documents must be provided as follows:
- (1) Place at least one legible copy of the shipping document and one legible copy of the preservation/de-preservation guide within a sealed bag or within a water-resistant envelope. Conspicuously secure the bag or envelope to the central most location within the vehicle or item.
 - (2) Place the remaining copy of the shipping document and the preservation/de-preservation guide within a sealed bag with a water-resistant envelope and securely attach it within the immediate area of the shipping address on the vehicle or item.

Marking of Shipping Containers

59. **Identification markings.** The following information must appear on all shipping containers, palletized unit loads, and unpacked items encoded with MRI and where applicable applied as HRI in accordance with [Figures 3-2, 3-3, 3-6](#) and Annex A:

- a. Unique Item Identifier (UII). Where one or more of the items in the shipping container are DND serially managed, the product identification PDF417 containing properly encoded UII(s), the free text "ID Data Includes UIIs" to the left of the that PDF417.
- b. Batch or Lot. Where one or more of the items in the shipping container are DND managed by Lot or Batch, the product identification PDF417 must contain the properly encode Lot or Batch number.
- c. NSN/NATO stock number. The MRI may be encoded in the product identification PDF417. The in-the-clear NSN represented in HRI, if applicable, must include spaces or dashes and any prefix or suffix specified in the contract or solicitation.
- d. NCAGE code. The NCAGE code of the company awarded the contract for the item(s) being shipped. The NCAGE code must be preceded by the abbreviation "NCAGE". Items entering the supply system after repair by DND maintenance facilities are exempt from this requirement; the blank line may be omitted.
- e. Part number. The PN is typically the actual manufacturer assigned part number, however if specified in the contract it may be a PN assigned by the Government procuring activity. For shipments sent directly from a subcontractor to a DND addressee, the PN of the company awarded the contract must be shown.
- f. Item description or nomenclature. The exact name and description of an item as it appears in the contract, purchase order or requisition must be shown. Item description may be marked on more than one line if required due to space limitations. Standard abbreviations, although not desired, may be used if marking length is excessive.
- g. Quantity and UI. A non-definitive UI must be accompanied by a quantitative expression such as "1 RO (100 FT)".
- h. Contract Number. For current DND contracts, cite the 13-character contract number. When applicable, use the 13-character contract number (identified by F or M in the 9th position) alone (since the call order PIID is treated as an independent contractual document). For legacy contracts, cite the contract number, including four-digit delivery order or call number if applicable. Additional information such as lot number (see [paragraph 48.a.\(9\)](#)) may be required by the contract or purchase order. Items entering the supply system after repair by DND maintenance facilities are exempt from this requirement, the blank line may be omitted.
- i. Military preservation method and date of unit preservation (e.g. "M41-4/02" – Method 41, from MIL-STD-2073-1, was provided in April 2002). Use of the letter M in the first position indicates the pack is a military preservation method; "41" is the method number; "4/02" indicates the date of preservation. For specialized preservation codes, use the code from MIL-STD-2073-1, Table J-Ia. (e.g. "MBC-4/02" – method BC was provided in April 2002). Method of preservation code "ZZ" must be shown as 'ZZ'. If a military preservation method does not apply, the method space must be left blank. If a preservation date does not apply, the pack date must be shown (e.g. "6/15").

CONTAINS METHODS (as applicable) PACK(S) / CONTIENT DES ARTICLES EMBALLES SUIVANT LA METHODE

- j. Method II packages. Each shipping container containing one or more Method II packages must have the following markings applied in bilingual English/French format:

CONTAINS METHOD II PACK(S) / CONTIENT DES ARTICLES EMBALLES SUIVANT LA MÉTHODE II

- k. If the shipping container is an integral part of the Method II package, the following markings must be applied in bilingual English/French format:

METHOD II PACKAGE DO NOT OPEN EXCEPT FOR USE OR INSPECTION / ARTICLES EMBALLES SUIVANT LA MÉTHODE II NE PAS OUVRIR SAUF POUR L'UTILISATION OU L'INSPECTION

- (1) Shelf-life. Shelf-life marking, if applicable, must be applied as specified in 3.10.2c. The shelf-life dates must be preceded with text or abbreviations to identify the nature of the dated event. See examples following in Table 4i.
- (2) Serial number(s). When an item is assigned a serial number, that number must be applied and preceded by the abbreviation "SER NO" (see 3.9.2c). Serial numbers assigned by the manufacturer solely for the purpose of indicating the quantity produced should not be shown.
- (3) Hazardous materials. Hazardous materials (HAZMAT), ammunition, and explosives marking (see 3.10.2).

NOTE

Identification bar code marking requirements, encoding of the UII(s), bar code configurations, and bar code formats for unit packs and intermediate containers are specified in [Figure 3-2](#) and illustrated in [Figure B-6](#).

- i. **Package marking for assorted-items pack.** When an assortment of related items (comprised of mixed stock numbers that support an end item but the assortment cannot be identified under one stock number) is packed in a shipping container or palletized unit load, the following must be applied in lieu of the standard identification text information: a brief description of the contents (e.g. spare parts to NSN XXXX), the PIID (contract number or purchase order number) or PIID call order (if applicable to all items), the date of pack (the date the shipment was packed), the gross weight, special marking (as required by 5.10), and additional marks as NOTEd in following sub-paragraphs. Kit or set components must be segregated and identified by PN or NSN.
- m. **Unrelated assorted-items pack.** When an assortment of unrelated items (comprised of mixed stock numbers that do not support a specific weapon system or end item) is packed into a shipping container or palletized unit load, it must be marked in lieu of the identification text marking required by [Figure 3-2](#) with the following information, in the order listed: the word "MULTIPACK" (line 1), the gross weight (line 2), and additional marks as NOTEd in the following sub-paragraphs. Hand printing on multipacks is permitted. For DND Troop Support item palletized unit load multipacks, see [paragraphs 35](#) and [38](#).

EXAMPLE

MULTIPACK WT 100.

- n. Additional marks for an assorted-items pack (related or unrelated items).
 - (1) In addition to shelf-life marking on interior packages or unpacked items, the words "CONTAINS SHELF-LIFE ITEMS" must be placed below the identification text marking on the exterior container or palletized unit load of an assorted-items pack containing shelf-life materiel.
 - (2) The words "WARRANTED ITEMS INSIDE" must be placed immediately below the identification text marking on the exterior container or palletized unit load of an assorted-items pack that contains items covered by a warranty.

- (3) The words “MULTIPLE DODAACs” must be applied to the outside of the exterior container or palletized unit load of an assorted-items pack of individual shipments/containers shipped to a single destination for multiple consignees.
- (4) For an assorted-items pack of hazardous materials, see 3.2.i and 3.13.9 for the required container and palletized unit load identification marking and for additional marking of “OVERPACK”, as applicable. The cautionary markings must be applied in bilingual English/French format (see [Figure B-5](#)).
- (5) Caution marking must be applied to the outside of the exterior container or palletized unit load of an assorted-items pack as required by this standard (e.g. FRAGILE, arrows, hazardous warning labels, etc.). The handling markings must be applied in bilingual English/French format (see [Figure B-5](#)). Subject to the nature of the material packed, cautionary markings such as FRAGILE, GLASS, POISON, PERISHABLE, KEEP FROM FREEZING or other cautionary or handling markings of a similar nature, must appear on the shipping container. Such markings must not interfere with or obscure other container markings.
- (6) For Foreign Military Sales (FMS) shipments, all containers or palletized unit loads containing assorted items (whether related or unrelated) must be marked as a “MULTIPACK” in accordance with the figures in Annex B.

60. **Shipping Instructions.** Shipping instructions must consist of the following (see note below): consignor and case no. of total number of cases in shipment.

NOTE

If shipment is consigned to a consignee for trans-shipment to ultimate destination, the shipping container must indicate after consignee FOR (ultimate recipient).

61. **Contract Identification.** Contract identification must include the NCAGE, Ull’s, TCN, Bill of Lading (BOL).

62. **Set or Assembly Markings.** The data elements for use with the labels in this publication are described in STANAG 2495 and as shown in [Figure B-4](#). The mandatory data qualifier standards (STANAG 2495) and associated symbologies (AAP-44) are as follows:

- a. GS1-128 symbology – GS1 Application Identifiers (AI);
- b. PDF417 – ANSI/FACT Data Identifiers (DI), ATA Spec 2000 Text Element Identifiers (TEI);
- c. ECC 200 Data Matrix – ANSI/FACT Data Identifiers (DI), ATA Spec 2000 Text Element Identifiers (TEI) and GS1 Application Identifiers (AI); and
- d. Other bar codes used must meet the requirements of AAP-44.

63. Where information is bar coded using GS1-128 bar codes, the information title is to be printed in clear in the human readable portion of the label. The recommended sizes for these labels are ISO standard paper size A5, (148 x 210 mm) or US 4 x 6 in. The figures depicting these labels are not to scale; depicted measurements are to the nearest millimetre. Markings must be applied by a method that provides a legible, durable and non-fading result capable of withstanding normal exposure to the environment and envisaged handling. The print quality must be a minimum of a B grade at printing according to ISO/IEC 15415 and ISO/IEC 15416 as described in AAP-44.

64. When a set or assembly is placed in two or more containers, each container must be marked with its own number within the set and the total number of containers making up the set (i.e. 1 of 2, 2 of 2), and the number of the set within each shipment (i.e. Set 1). Set or assembly marking must be placed in the lower right-hand corner of the identification-marked side of the container as shown. A 2 in (50.8 mm) disc of a high contrast color must be placed above the numbers on each container.

NOTE

[Figure A-10](#), Mapping GS1 AIs to ANSI MH10.8.2 DIs, does not appear in MIL-STD 129, however it was extracted from ANSI MH10.8.2 to provide a direct crosswalk between Data Identifiers (DIs) and Application Identifiers (AIs).

65. If a reusable package requires its own identification, then both markings, item and package, will be displayed (see [Figure B-10](#)). Each reusable exterior container must have the following markings prominently displayed in bilingual English/French format:

REUSABLE CONTAINER DO NOT DESTROY / CONTENANT RÉUTILISABLE, NE PAS DÉTRUIRE

66. Reusable containers of 18 L (4 gal) capacity or greater with face exceeding 0.28 m³ (10 cu ft) must be clearly marked in bilingual English/French format with the additional marking:

CANADIAN FORCES PROPERTY / PROPRIÉTÉ DES FORCES CANADIENNES

- a. The data shown on identification markings (all terms, item names, technical designations and abbreviations) must be in both English and French (exception: the Military Type Designation, which must conform to the most recent version of Canadian Forces Standard D-02-002-001/SG-001).

NOTE

In some cases, reusable containers are themselves serially managed and must be subject to those requirements. The marking of reusable containers has substantially changed with the advent of new container material and new marking technologies, [Figure 3-1](#) in this specification should be reviewed prior to determine the appropriate marking method to be applied to ensure permanent and reliable marking.

- b. Technical abbreviations common to both languages must be used. Where such common abbreviations are not possible, the English version, followed by a solidus (/) and the French version, must be used.
- c. Where information is entered in both languages, the English version must be on the top or the left. The item name in English must be on top of the Type Designation and the item name in French below. Where the English and French names are identical, e.g. "RADOME", there will be one entry only.
- d. French terms must show their phonetic symbols (accents, diaeresis, and cedilla).

67. If specified, the following additional markings must be applied on the face of the container bearing the description of contents markings:



- a. Specification number (type, grade, class) of item;
- b. Manufacturer's name;
- c. Manufacturer's part number or drawing number;
- d. Manufacture's batch number;
- e. Qualification number;
- f. Cure date of rubber components;
- g. Other data required by contract commodity specification;
- h. Date of repair or overhaul;
- i. Name of repair or overhaul contractor;
- j. Modification status; and
- k. Year of manufacture.

68. **Cautionary markings** appear directly under weight and cube markings in addition to the cube.

METHOD II PACKAGE DO NOT OPEN EXCEPT FOR USE OR INSPECTION / MÉTHODE II — NE PAS OUVRIIR SAUF POUR USAGE OU INSPECTION

Foreign Language Markings

69. When specified, material packaged for export or air shipment to Service establishments in Europe must bear (for information of carriers) such markings as weight, handling and storage instructions in whichever of the following languages is deemed appropriate. Suitable precautionary words and phrases are as follows:

	ENGLISH	FRENCH	GERMAN
	Weight	Poids	Gewicht
	Top	Dessus	Oberseite
	Glass	Verre	Glas
	Fragile	Fragile	Zerbrechlich
	Open Here	Ouvrir ici	Hier Offnen
	Keep Dry	Garder au sec	Vor Nasse Schutzen
	Handle with Care	Manipuler avec soin	Vorsicht
	This Side Up	Cette face en haut	Diesse Seite Nach Oben
	Use No Hooks	Manier sans crampons	Ohne Haken Aufheben

70. Other handling markings must be applied as required by container or commodity specifications.

Position and Application

71. Positioning and application of markings must be as follows:

- a. The exact location of the identification text marking may vary slightly. The marking must be applied to the upper left two-thirds of the side of the container or palletized unit load having the greatest overall, usable marking surface. See [Figures B-2](#) and [B-3](#) for examples. Specific requirements for the placement of the identification text marking on various containers, palletized unit loads, and unpacked items are discussed in the following paragraphs. The required marking must not be obscured by cleats, strapping, or closure tape. Unless otherwise specified in the contract or solicitation or when required by the carrier, such as parcel post, one end and the top and bottom of every exterior container or palletized unit load must be free of identification marking. Marking materials used must meet the requirements specified in section 3. Unless otherwise specified by the cognizant activity, the size of the identification text marking lettering must be as specified in [paragraph 27](#).

- b. Military Shipping Labels (aka address labels) should be affixed at a suitable location where there is minimum risk of damage and in accordance with the provisions of 3.13.6. The Military Shipping Label (MSL) format includes a Transportation Control Number (TCN) as a conditional data element that is only included if the system can generate and encode it. If a label location is not specifically identified in this standard, shippers are referred to ANSI MH10.8.1 for additional guidance. Radio Frequency Identification (RFID) tagging must be in accordance with STANAG 2233, AAITP-07 and ISO 18000-6C. Guidance for the placement of RFID passive tags can be found at ISO/IEC TR 24729-1.
- (1) Required address marking must be placed on the identification-marked side of exterior shipping containers. If a container is too small to accommodate the address marking on the identification-marked side, the address marking/ MSL must be applied on the opposite side or attached to a shipping tag (see 3.5.7 and [Figure B-7](#)) or marking board/panel (3.5.3). When the surface of the shipping container or material such as pipe, steel, or wood does not lend itself to direct application of the Military Shipping Label (MSL), or the MSL obscures other required marking on a shipping container, the label must be attached to a shipping tag, marking board or marking panel. The tag must be large enough to accommodate the label without folding. Separate tags must be used for identification and address marking.
 - (2) Stencil marking alone is not an appropriate alternative for address marking of shipments because stenciling cannot accommodate the bar code requirements.
 - (3) The MSL (see [Figures B-13](#) and [B-14](#)) must be completed in accordance with the requirements in Annex A of this document, AAITP-02 and ISO/IEC TR 24729-1. DND and its Suppliers must utilize the optional format (see [Figure B-13](#)). DND typically does not utilize [Figure B-12](#) or include a PDF417 on the MSL. However, there are instances where outside entities such as NATO allies will utilize the minimum or full optional format MSL including a PDF417 (see [Figure B-14](#)). In such cases and using [Figure B-14](#) the PDF417 encoded data string is as illustrated in [Figure 3-7](#):

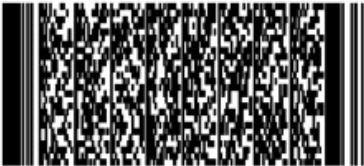
	<p>This symbol represents the encoded data for a PDF417 using the "National Level Logistics Data" example of Figure B-14 below.</p> <p>The mark includes:</p> <ul style="list-style-type: none"> · Commercial Carrier Code; · Contract Number; · Number of this package amongst the shipment; · Shipper NCAGE; · Shipper address; · Receiver address; · Quantity in the package; · Weight of the package; and · Cubic volume. 	<pre>[>R_S06^{G_S}3K1Z123X560312345679 ^{G_S}8KW5555-19XA11/001/BK^{G_S}13 Q1/2^{G_S}17VSBNV7GS5LACME,6527 OAK, CAMERON, MO, USA 64429 ^{G_S}2LDNDHQ, 101 COLONEL BY DR, OTTAWA, ON K1A 0K2, CANADA ^{G_S}Q500GS2Q1759/KG^{G_S}18Q5CRR_SEOT</pre>
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Figure 3-7 Encoding Format Military Shipping Label Where National Level Logistics Data is included in PDF417 (see [Figure B-14](#))

- (4) For contractor or vendor shipments, the MSL information must be coordinated between the contractor or vendor and the contracting office or administrative contracting office.

- c. **Boxes and crates** (see [Figure B-6](#)). Boxes and crates 10 cubic feet and over must have additional identification marking placed on the end of the container to the left of the identification-marked side. Placement of identification marking on the end of boxes and crates under 10 cubic feet is optional. Regardless of size, identification text marking may be stenciled or printed directly on the container or applied by use of a stenciled or preprinted label. If no other adequate marking surface is available, cleats may be used as part of the marking surface. If the exterior surface is not suitable for direct marking application, a marking board/panel may be used.
- d. **Container**. The MSL must be placed on the identification-marked side and right of center on a vertical face, allowing a minimum of 2 in. (5 cm) from all edges of the box or crate. An additional MSL may be placed on the identification-marked end for styles which, because of their configuration, allow access by materials handling equipment only to the end of the container.
- e. **Bales and cloth-covered bundles** (see [Figure B-4](#)). The identification text marking on bales must be stenciled on the upper two-thirds of the side of the bale having the largest marking surface area. Bales with a pre-sewn end and a wire-tied ear on the opposite end must have the NSN, quantity, and UI applied on the pre-sewn end. When both ends have wire-tied ears, no identification marking must be applied on the ends. On cloth-covered bundles, identification text marking must be stenciled on the upper two-thirds of the side of the bundle as close to the left side as possible. When direct stenciling is used, there is no need to coat the cloth, provided the marking does not become smeared or illegible because of any absorption into the cloth. To ensure that the marking is both permanent and readable, the cloth bundle may be given a smooth coat of sand-colored lacquer, enamel, or paint over the area to be marked before the marking is applied. When stenciling is not appropriate for bales or cloth-covered bundles, preprinted labels or tags may be used. MSLs for bales and bundles must be applied to the lower two-thirds of the identification-marked side or to the wire-tied ear with a tag.
- f. **Paper shipping sacks, bags, and textile/laminated textile bags** (see [Figure B-5](#)). Identification text marking must be printed or stenciled on the side of the sack or bag that does not bear the certificate of compliance of the sack manufacturer. Commercially packed commodities must have the required marking stenciled and centered on one face of the sack or bag. When the printing area is too small, spacing of the printing may be altered proportionately and lines may be consolidated. If the stenciled marking is not legible, it must be machine printed on a tag or label. If a bag is closed by stitching, an identification tag (not an MSL) may be fastened to the bag by stitching at the time of closure. If the top of a bag has ears, the appropriate tag must be affixed to one of the ears. The MSL must be placed on a label or tag. When a label is used, it must be applied below the identification marking. If the bag is closed by stitching, a tag may be fastened to the bag by stitching when closure is made. If the top of the bag has ears, the tag must be affixed to one of the ears.
- g. **Barrels, drums, and other cylindrical containers** (including empty containers) (see [Figure B-3](#)). Identification text marking must be stenciled or preprinted on the upper one-third of filled barrels, pails, kegs, drums, and reusable metal containers. In addition to the required marking on 50- and 55-gallon drums or barrels with non-removable heads, identification data (less weight) and shelf-life marking must also be shown on the head. Forest-green containers must be marked with yellow or white lettering. Although the preferred methods of application are stenciling and preprinting, labels or tags may be used when a container is too small for either method. Labels must be affixed with pressure-sensitive adhesive in most cases, however if the container is made of a polyolefin or polyvinyl chloride (PVC) consideration should be given to Polymer Fusion labelling for permanent marking as described in D-02-002-001/SG-001. However, unless otherwise approved by the cognizant activity, labels or tags must not be used for identification text marking on metal containers, unless the containers are too small to accommodate the stenciled or preprinted marking. Also, if labels are used for marking, only pressure-sensitive labels must be used on cylindrical containers and metal drums. Marking must be avoided in the space 6 in. (15.2 cm) above or below the centerline of the body sidewall for barrels not swaged with rolling hoops. On empty barrels, drums, and cylindrical containers, identification marking must be applied on the top and on the upper one-third of the side by attaching labels or tags. The preferred location for the MSL is on the middle one-third of the identification marked side of the container, except for barrels not swaged with rolling hoops. However, if space is not available in this location, the MSL must be placed in a conspicuous location in close proximity to the identification marking. A flat surface of the container is preferred to accommodate scanning of the linear (Code 128) bar codes and/or when present the PDF417 on the MSL. If space is not available on the surface of the container for the MSL, the label must be placed on a shipping tag.

- h. **Miscellaneous articles and unpacked items** such as spools, reels, rods, coils of wire and cable, and paper- and cloth-wrapped rolls (see [Figure B-7](#)). Identification marking must be applied on two tags securely attached to items such as rods and bars. One of the tags must be bound to the item with burlap or other suitable covering, with each end of the cover securely fastened. The other tag must be securely attached to the item with a wire or twine (see 3.8). On reels or spools of cable and wire, identification text marking must be stenciled on the side of the reel or spool. When this area does not permit stenciling, marking may be applied by using a label. On coils of wire, identification marking must be applied on two tags securely attached to the coil. On paper- and cloth-wrapped rolls, identification text marking must be applied by stenciling, printing, or labeling. Prior to stenciling cloth-wrapped rolls, the marking area must be given a smooth coating of sand-colored lacquer, enamel, or paint. One end of wrapped rolls must contain NSN, quantity, and UI marking. The MSL must be applied to these types of miscellaneous articles and unpacked items by using labels on flat areas or on tags as shown. Label protection for exterior shipping containers, palletized unit loads, or unpacked items. A waterproof, untinted/transparent, plastic, protective laminate such as ASTM D5486/D5486M, type I, class 2 tape, or equivalent protection, must be applied to or must be inherent to the label.
- i. **Reusable containers.** Identification marking by means of labelling must have labels affixed with pressure-sensitive adhesive in most cases, however if the container is made of a polyolefin or polyvinyl chloride (PVC) consideration should be given to Polymer Fusion labelling for permanent marking as described in D-02-002-001/SG-001. For details see [Figure B-10](#).
- j. Neat and legible hand printing is only acceptable as a means of marking, subject to the Department TA and inspection by the Quality Assurance/Inspection Authority.

Size of Markings

72. Size of lettering. As specified herein, lettering for all markings must be capital letters of equal height, proportional to the available space of the container, and must not exceed 76 mm (3.0 in.) in height.

73. Markings, other than the address on shipping containers. Lettering for markings other than the address should be not less than 12 mm (0.50 in.) nor more than 25 mm (1.0 in.) in height on interrupted stencil letters and not less than 13 mm (0.52 in.) nor more than 25 mm (1.0 in.) on solid letters. The lettering may be reduced to 6 mm (0.24 in.) in height when the total area, or the available space of the panel to be marked, is not sufficient for the larger size lettering.

74. Address. Lettering for the overseas address must be not less than 12 mm (0.50 in.) nor more than 76 mm (3.0 in.) except when tags or labels are utilized. When address marking is applied by stencilling, it will be the most conspicuous marking on the container and as large as available space permits.

Handling and Cautionary Markings

75. Handling and Cautionary markings shall be applied in a conspicuous position. Special handling, including arrows and FRAGILE or DELICATE marking (see [Figure B-5](#)). All containers must have appropriate caution marking applied. Special handling marking such as "TOP", "UP", "THIS SIDE UP", "GLASS", "KEEP DRY", "PERISHABLE", "KEEP FROZEN", "FRAGILE" or "DELICATE" must be placed on shipping containers, as applicable. The marking must not interfere with or obscure other marking. Containers of fragile or delicate items must be marked with a fragile label or by stenciling or stamping the word "FRAGILE" or "DELICATE" on the container. When space permits, "FRAGILE" or "DELICATE" marking must be placed on the identification-marked side and one end of a rectangular container, and on two equally spaced areas on the circumference of a cylindrical container. Special handling illustrations are contained in ASTM D5445.

Contract Supply Voucher

76. The contract supply voucher, release NOTE, packing list, etc., must be enclosed in a water-resistant envelope which must be securely affixed to one end of the last container in each shipment.

77. Other documents which may accompany the shipment must be placed on top of the packed stores in the last container in the shipment and the container must be marked to indicate the enclosure. The markings must be on the same face as the envelope referred to [paragraph 27](#).

78. Unboxed and uncrated items. Identification and contractual information must be stencilled directly on the base of the item when the design of the item is such as to permit this. Otherwise, markings must be applied by means of tags which must be securely attached to a suitable part of the item.

79. Identification marking on exterior containers, palletized unit loads, and unpacked items (see multiple figures in Annex B). Unless specifically exempted in the contract or solicitation or this standard, the following minimum identification text information must be marked on all exterior containers, palletized unit loads, and unpacked (loose) items in the order listed. This marking must be encoded with MRI and where applicable applied as HRI in accordance with [Figures 3-2, 3-3, 3-5](#) and Annex A.

- a. Text. When a palletized unit load of containers or items is formed, the individual containers or unpacked items must be marked with exterior container identification text marks or unpacked item identification text marks, subject to exceptions NOTEd herein. A DND originated shipment packaged in an overpack enclosure (protective outer packaging or palletized unit load) for convenience of handling during transportation is exempt from identification marking under the following conditions: the overpack enclosure is not an assorted-items pack (see 3.11.1), the cargo is non-hazardous, the unpacked items or containers within the overpack enclosure are marked/tagged with identification information in accordance with this standard, and the overpack enclosure is not intended for storage at destination.
- b. MRI. The Product Identification PDF417, also known as the ID Data PDF417, contains the UII information for serially managed items and must include the free text "ID DATA INCLUDES UIIs" to the left or at least adjacent to the PDF417 bar code containing that information. The HRI for all UII(s) may also be listed if space is available but is not required. Examples of the UII Package PDF417 are shown in [Figure 3-1](#) of this document. Non-serially managed and Batch/Lot managed item Product Identification PDF417's must have the free text "ID DATA" and no UII information would be encoded in the Product Identification bar code.

PART 4

QUALITY ASSURANCE PROVISIONS

Quality Management System

1. The Department requires that the Contractor utilize a Quality Management System, such as one conforming to ISO 9001, to ensure delivery to the Government for acceptance only items that meet contract requirements including marking for storage and shipment of DND materiel specified in this specification, referenced standards and any additional contract requirements. Sampling plans may be utilized as part of the Contractor's Quality Management System, however, use of such a plan does not relieve the Contractor from responsibility to replace or repair all defective items offered for acceptance at their expense.

- a. As part of their Quality system, the Contractor must prepare records evidencing all inspections to the MRI and HRI made under the system and must also provide to the Department reports specified in Data Item Descriptions:
 - (1) Data Item Description (DID) Req. Name-LS-XXX, Identification Shipping and Packaging Data; and
 - (2) Data Item Description (DID) Req. Name-LS-XXX, IUID Validation and Verification Report.
- b. Quality Conformance records must be kept complete and made available to the Government during contract performance and for as long afterwards as the contract requires. The Government may perform reviews and evaluations as reasonably necessary to ascertain compliance with this paragraph.
- c. The Government has the right to inspect and test all items delivered for acceptance under this contract before acceptance. The Government must perform inspections and tests on the delivered items and review Validation and Verification Reports in a manner that will not unduly delay acceptance.
- d. The Department has the right either to reject or to require correction of nonconforming supplies. Supplies are non-conforming when they are defective in material or workmanship or are otherwise not in conformity with contract requirements. The Government will reject nonconforming supplies for failure to comply with this standard and process corrective action in the same manner as any other product quality deficiency. In no case will these requirements be considered non-technical or administrative deficiencies.
- e. Inspections and tests by the Government do not relieve the Contractor of responsibility for defects or other failures to meet contract requirements discovered before acceptance. Acceptance must be conclusive, except for latent defects, fraud, gross mistakes amounting to fraud, or as otherwise provided in the contract. For new contracts with this standard applied, The Department requires a First Article Inspection as specified below.
- f. Where a storage and shipment HRI or MRI mark is rejected, it must be removed. If it must remain on the item, it must be rendered unreadable.
- g. HRI must be confirmed by visual inspection of the markings to confirm compliance with this standard.

First Article Inspection

2. The Department requires inspection and approval of package content/shipping label sample which must happen before production marking can begin. Contractor must provide the Department TA or Project Manager responsible for the acquisition with a Validation and Verification report for all machine-readable marks on the content/shipping label. Obtaining third party Validation and Verification service compliant with Data Item Description (DID) Req. Name-LS-XXX, IUID Validation and Verification Report will be at contractor's expense. The Department reserves the right to request the physical article with content/shipping label to this standard even when the contractor chooses to submit a Validation and Verification report.

- a. First article inspection pass criteria: Linear bar codes must be readable by commercial bar code readers and must achieve a minimum print quality of 3.0/05/660 as specified in ISO/IEC 15416.

Quality Conformance Inspection

3. Quality conformance inspection for storage and shipment to ensure adherence to the requirements of this specification and that required markings are not omitted, incorrect or illegible MRI must be confirmed in accordance with the following standards and must demonstrate its use by a successful scan and decoding of all MRI including both bar codes and RFID using Automatic Identification Technology (AIT):

- a. ISO 15394;
- b. ISO/IEC 15415;
- c. ISO/IEC 15416;
- d. ISO/IEC 15418;
- e. ISO/IEC 15426;
- f. ISO/IEC 15434;
- g. ISO/IEC 15438;
- h. ISO/IEC 16388;
- i. ISO/IEC 18000-6C; and
- j. ISO/IEC TR 24729-1.

Validation and Verification

4. Validation and verification of the item shipping label must be performed to ensure that the package MRI is properly formed and that encoded data is properly formed.

- a. Validation results in a Validation and Verification Report generated when an MRI mark is evaluated by a “verifier” and confirms the encoded data is properly formed using [part 3, Figure 3-2](#) to identify the marking format, [Figure 3-3](#) for the required data elements and [Figure 3-5](#) as well as the figures in Annex B for the format of the mark. [Figure 3-4](#) provides the required data elements in the shipping label and the format is provided in [Figures B-12 to B-14](#).
- b. Verification confirms that the bar code symbology is properly formed and of sufficient quality to ensure accurate reads through the life of the item. In this case the verification standard is ISO 15415.
- c. The contractor is responsible for 100% accuracy in marking and must perform validation and verification as a part of their normal production process like any other technical requirement. Validation and Verification Reports are required as part of the first article inspection specified herein. Verifier conformance reports conforming to ISO/IEC 15426 and Validation and Verification Reports may be requested by the government at any time following first article inspection.

ANNEX A

TECHNICAL DETAILS FOR PDF417 BAR CODE

SCOPE

1. Annex A provides detailed printing instructions for the 2D (PDF417) bar code and it provides explanations for the tables that follow. This Annex is a mandatory part of the standard. The information contained herein is intended for compliance. Excerpted from US MIL-STD-129R w/CHANGE 2, 27 September 2019 and modified to DND/CAF Requirements.

PROCEDURE

Printing Instructions

2. The 2D (PDF417) bar code used for shipping and receiving must be printed with no more than 12 data columns in width. The use of 13 to 18 data columns is allowed for inventory or supporting documentation applications (identification marking, ammunition/explosives marking, packing list, etc.) if a smaller 2D (PDF417) bar code cannot accommodate the increased data requirements. A 2D (PDF417) bar code includes a start pattern, a left row indicator column, one or more data columns, a right row indicator column, and a stop pattern. See [Figure A-1](#).

3. The 2D (PDF417) bar code must not exceed 2.4 in. (61 mm) in height to include the surrounding minimum quiet zone.

4. The 2D (PDF417) bar code must have a minimum quiet zone of 0.04 in. (1 mm) above, below, to the left, and to the right.

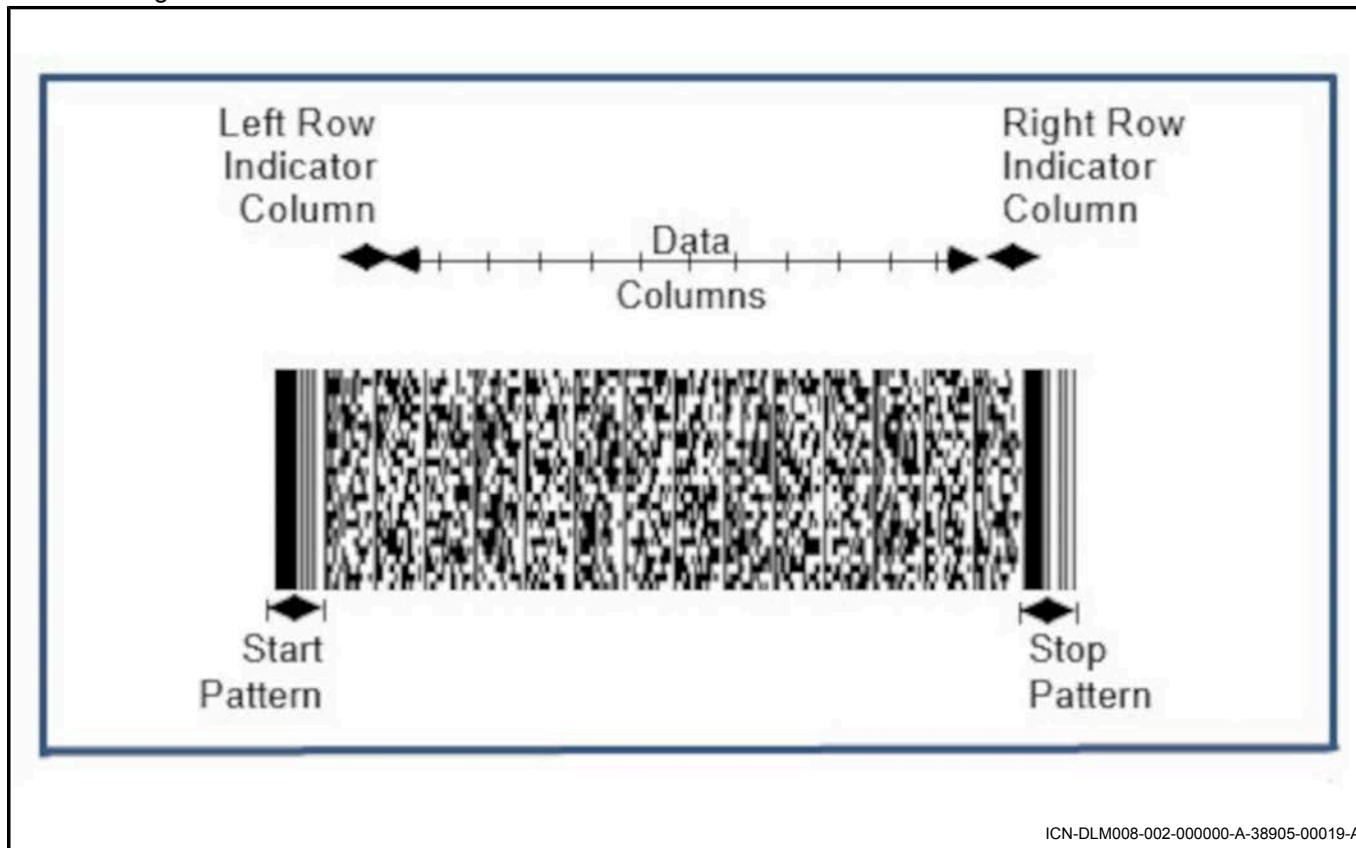


Figure A-1 2D (PDF417) Data Columns

5. The minimum narrow element dimension (X-dimension) must not be less than 0.010 in. (10 mils or 0.254 mm). For 2D (PDF417) bar codes up to 12 data columns, the X-dimension must not exceed 0.017 in. (17 mils or 0.432 mm). For 13 to 18 data columns, the X-dimension must not exceed 0.010 in. (10 mils or 0.254 mm).

6. The 2D (PDF417) bar code must have a minimum row height of three times the width of the narrow element (X-dimension).
7. The 2D (PDF417) bar code must use security (error correction) level 5.
8. The start and stop pattern bars of the 2D (PDF417) bar code must be perpendicular to the natural bottom of the label.
9. Data fields that contain no information should not be encoded in the bar code.
10. The quality of the printed bar code must meet a minimum grade requirement of 2.5 (B) at the point of production when measured in accordance with ISO/IEC 15415 with a measurement aperture of 0.010 in. (10 mils or 0.25 mm) and an inspection wavelength of 660 ± 10 nm.
11. Macro PDF417 bar codes must be used when the encoded data message file exceeds the capacity of a single PDF417 bar code on a label. A full size (18 data columns) PDF417 or Macro PDF417 bar code can encode approximately 1100 characters at security level 5. The character capacity of the bar code is based on a limit of 925 codewords, the compaction algorithm used to encode the data in a codeword, and the bar code's security level.

NOTE

Ammunition and Explosives Palletization/Packaging label(s) must not use Macro PDF417 bar codes.

- a. Macro PDF417 bar codes must be encoded and printed in accordance with ISO/IEC 15438, which also provides a technical explanation for the bar code control block information that facilitates reassembly of an encoded message after all the applicable bar codes have been scanned at least once in any sequence.
- b. Each Macro PDF417 bar code represents a segment of the whole data file that is identified within the bar code control block with a file ID assigned by the user or system. To reconstruct the whole file, the file segment encoded in each bar code is placed in the correct order based on an encoded segment number (n of x). There is no requirement for the file ID to be globally unique. However, if multiple bar code sets could be present for a scanning event, the file ID must be unique within the context of the event.
- c. Each receiving system used to scan Macro PDF417 bar codes will need to determine if the system scanner will operate in a buffered or unbuffered mode. As the Macro PDF417 bar codes are scanned, the de-packetizing function reconstructs the original message from segments with the same file ID. If operating in buffered mode, the bar code codeword de-packetizing function is in the scanner's decoder; if operating in unbuffered mode, the de-packetizing function is in the receiving system decoder.
- d. To accommodate potentially unbuffered operations by some receiving systems, a segment count field in the control block must be encoded in each Macro PDF417 bar code to facilitate checking that all segments in a set of Macro PDF417 bar codes are received. The segment count field identifies the total number of Macro PDF417 bar codes in the distributed file.
- e. Decoders should provide a decoder-specific means whereby the processing of a file ID segment set may be aborted, thus allowing the decoder to begin processing a different set of Macro PDF417 bar codes. This is necessary to prevent a deadlock condition should one or more bar codes of a given file ID be missing or undecodable.
- f. The following is provided to describe the Macro PDF417 control block used for the bar code in Figure 20. The codewords are encoded by software suites using different schemes; thus, the example only shows the numeric value of each codeword and not the actual syntax of how it is encoded by the software.
 - (1) Figure 20 control block codewords within the first (top) bar code's segment data structure are: (928) (111)(100) (129) (923)(001) (111)(002)
 - (2) Figure 20 second (bottom) bar code control block codewords are: (928) (111)(101) (129) (923)(001) (111)(002) (922)

(3) The codewords represent the following controls:

(928) = tag identifier for the start of a macro control block (111)(100) = modular math base 900 for the 1st segment (00000) (111)(101) = modular base 900 for the 2nd segment (00001)(129) = file ID assigned by the user for the set of macro bar codes (923)(001) = tag and field designator for the segment count field (111)(002) = modular base 900 for the segment count (00002) (922) = the tag identifier for the end of the last macro control block

Table A-1 Information

12. [Figure A-5](#) provides data descriptions, format, and data sources for the data identifiers (DIs) and for the data element identifiers (DEIs) that identify DND unique data elements for use in the 2D (PDF417 or Data Matrix) bar code.

- a. Format 06 DIs (Column 1), as defined in [Figure A-5](#), contain specified characters that define the general category and intended use of the data that follows.
- b. Column 2 displays the titles and usage adopted by DoD for the respective DIs/DEIs.
- c. Data sources (Column 3) shows the most common source for the 2D (PDF417) bar code data. If a DI or DEI is used to encode data for multiple applications, multiple data sources may be described.

Tables A-2 through A-5 Information

13. [Figures A-6 through A-9](#) provide the content of the data streams for generic military shipping labels (MSL), unit move MSLs, unit pack ID and container bar codes, and ammunition and/or explosives identification marking bar codes, respectively.

- a. **Compliance indicator** (column 1) shows the special formatting characters associated with the ISO/IEC 15434 data format. The compliance indicator must be the first three characters in the message header. The compliance indicator must be []> (left bracket, right parenthesis, and greater than).
- b. **Element separators** (column 2) show the separator or terminal code that is for that particular part of the data stream. The format trailer character (RS) must be used at the end of the message header (before a format series) and at the end of each format series of data (before the next series of data). The data element separator (GS) separates data elements within each format series of the data table. The message trailer (EOT) identifies the end of the message within the data stream. See ISO/IEC 15434. These are non-printable, single, ASCII control characters that cannot be typed as simple text into the bar code – the control characters must be entered as per the encoding software's specifications.

ASCII/ISO 646	HEX	DEC
RS	1E	30
GS	1D	29
EOT	04	04

Figure A-2 Hexadecimal and Decimal Values

- c. **Format header** (column 3) is a two-digit numeric identifier “06” or “07” which identifies the rules governing the message format. It is followed by Format 06/07 data qualifiers (DIs or DEIs in Columns 4 and 5, respectively), which define data content within the message.
- d. **Data field** (column 6) contains an abbreviated description of the data field. See [Figure A-5](#) for a full description.

- e. **Data format type/length** (column 7) contains indicators of whether the data is alpha and/or numeric and the length of the actual data represented by this field (e.g. an5). A convention of “an..25” means a variable length data string of up to 25 alphanumeric characters, whereas “an25” means a fixed length of precisely 25 alphanumeric characters. A convention of “an13..15” means a minimum of 13 alphanumeric characters and a maximum of 15 characters. The plus symbol (“+”) is used to annotate how data formats are constructed in the data field; the plus sign is not part of the encoded data string. However, when referenced to a NOTE in the data format column, the plus symbol (“+”) becomes part of the data sub-string to separate different types of data that are encoded within a single field (i.e. DIs 2L, 3L, and 5L). Variable length fields are not zero-filled unless the information is extracted from an external data source that requires leading zeros. If a DI or DEI is used to encode data for multiple applications, multiple data formats may be described.
- f. **Sample data** (column 8) contains sample encode value for the ASCII element indicated.
- g. The generic MSL 2D (PDF417) bar code and the Ammunition and Explosives Palletization/Packaging Label 2D (PDF417) bar code store a repeating set of selected data at the end of the bar code format.
 - (1) The repeating data set for the MSL reflects what is normally marked in the linear (Code 39) bar codes or the 2D (PDF417) bar code. The data capacity restrictions of the MSL 2D (PDF417) bar code will normally limit its content to ten line items depending on the amount of MSL and transportation control data recorded. Each supply document series begins with a DI “12S” and terminates with a DI “12Q” code – if either of these two fields is blank, the blank field must be encoded with the applicable DI.
 - (2) The repeating data set for the Ammunition and Explosives Palletization/Packaging Label 2D (PDF417) bar code reflects the quantities of stock numbered assets or part numbered assets within each package or unit load. Each repeating data set series begins with a DI “N” or DI “1P” code.

Data Syntax Graphic

14. [Figure A-3](#) is an example of how DIs (Format 06) are used in a 2D (PDF417) bar code to depict a single shipment unit with multiple supply line items within the shipment unit.
- a. The transportation control number (TCN) is contained in the first Format 06 block that terminates with an RS code.
 - b. The supply line-item data for specific document numbers are contained in a Format 06 block. Data looping is required to document a multipack shipment when multiple line items exist within a single shipment unit. In this data looping structure, the order in which the line items are encoded in the 2D bar code is critical to the meaning of the data. Additional Format 06 envelopes may also be used to deNOTE the data looping relationship. The number of supply line item documents is limited by the storage capacity of the AIT device.

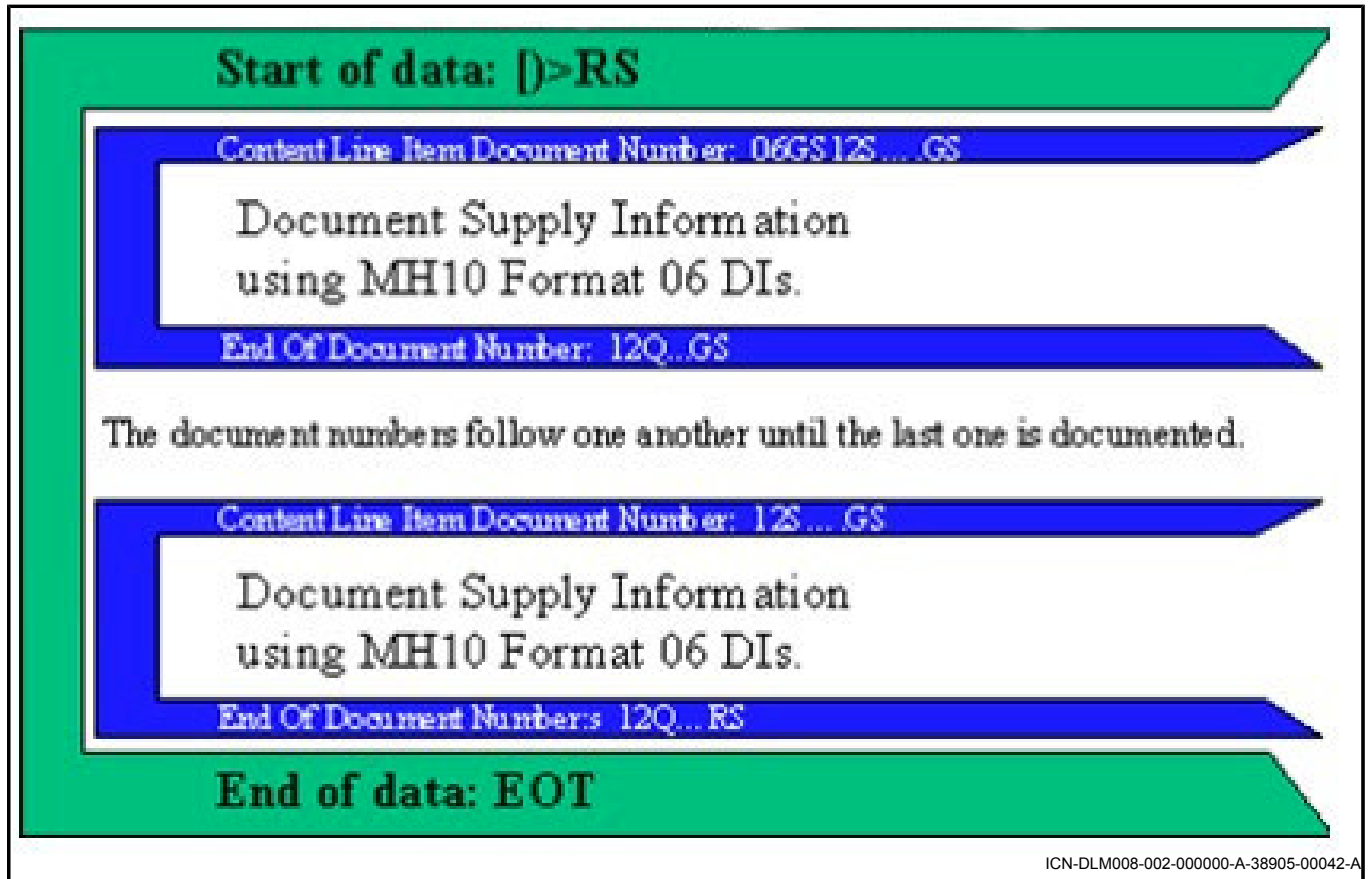


Figure A-3 2D Bar Code Data Syntax

Encoding serial numbers

15. The following procedures accommodate two different encoding schemes:
 - a. A legacy requirement to encode serial numbers separate from the item's UII, and
 - b. A revised requirement that links an item's UII to its serial number. The linked serial number and UII allow the transfer of associated data for serialized items within the supply chain when multiple like items (e.g. same NSN) are packaged and shipped together.

Syntax business rules for encoding linked serial numbers and UIIs

16. ISO/IEC 15434 Format 06/07 envelopes must be used to link serial numbers with corresponding UIIs.
 - a. For a single item (quantity equals 1), common data for the item must be encoded in the ISO/IEC 15434 Format 06 envelope, as applicable. The Format 06 envelope may also be used to associate item-specific data (e.g. serial number, UII, etc.) for the uniquely identified item. A single data qualifier or paired data qualifiers ("S", or "25S", or "S" and "25S") may be used within the Format 06 envelope to identify and associate the serialized data for an item. This procedure can link one or more serial numbers and a UII to the same single item.
 - b. For multiple items (quantity greater than 1), common data for the items must be encoded in the ISO/IEC 15434 Format 06 envelope, as applicable. An additional Format 06 envelope (one per item) must be used for each item to encode item-specific data (e.g. serial number [DI "S"], UII [DI "25S"], lot/batch [DI "1T"], etc.) for the uniquely identified item. Additional information may be associated to each serialized item such as condition code, manufacturer CAGE, etc. A serial number and/or UII may or may not be encoded for each item dependent upon whether or not the item is IUID serially managed.

NOTE

For multiple item entries (quantity greater than 1), if the 2D bar code reader decodes multiple serial numbers and/or Ulls (DI "S" and/or DI "25S") in the first Format 06 envelope, the system must assume there is no associated relationship between the serialization numbers. Previous versions of MIL-STD-129 used the first Format 06 envelope to encode separate lists of serial numbers (DI "S") and Ulls (DI "25S") – the serialized numbers (serial or Ull) were not linked together for any one item. A serial number and/or Ull may or may not be encoded for each item. Updated distribution systems must be able to decode the data in the legacy 2D symbol but should not generate any 2D symbols using the legacy business rule.

Data Syntax Example

17. The below example shows an extract of the data string syntax for encoding individual serial numbers, encoding Ulls, and linking an item's serial number with a Ull. The first Format 06 envelope (06GS) contains the common data for the item. The data string example is marked to show the data content within each Format 06 serial number and/or Ull envelope.

```
[ ]>RS06GS17VSBVN7GSN1234121231234GSQ5GS30P12RS06GS25SDSBNV7A1B2C3
24GSSA1B2C324RS06GS25SDSBNV7A1B2C32535GSSA1B2C325RS06GS25SDSBNV
7A1B2C326GSSA1B2C326RS06GS25SDSBNV7A1B2C327GSSA1B2C327RS06GS25S
DSBNV7A1B2C328GSSA1B2C328RS06GSN9876989898769GS8P04012345123456GSQ
5RS06GS8P10012345678902GSQ2RS06GS8P00012345600012GSQ12RSEOT
```

Table A-5 Ammunition and Explosives Palletization/Packaging Label Specifications

18. The following business rules apply to the data elements of the Ammunition and Explosives Palletization/Packaging Label 2D (PDF417) bar code. Mandatory data elements must be encoded in the 2D (PDF417) bar code and printed on the label as a human translation of information in the 2D (PDF417) bar code if the element is applicable to the item or package mark. The DoD 4100.39, Volume 10, Table 81, Unit of Measure Designation code or ANSI ASC X12.3 Data Element 355 (Unit or Basis for Measurement) code must be printed as human-readable information on the labels. Each Service's AIS must provide quantity conversions, if required, for unit of issue codes, unit of measure codes, and X12.3 Data Element 355 codes.

- a. **Label traceability code.** The label traceability code is a mandatory data element identified by the DI "20S".
 - (1) The label traceability code must always be 20 characters long.
 - (2) Each label in a label series must contain a traceability code, which must be identical to all the other label serial numbers in the series, except for the last two characters (label "N" or "X") if multiple labels are required. The label or label series represents the materiel contained in an ammo package. As many as nine labels may be contained in a label series.
 - (3) Format is UMYMMDDhhmmssRRNX.
 - (4) UM = ANSI ASC X12.3 Data Element 355 (Unit or Basis for Measurement) code for the package type. The package type is not generally the same as the materiel unit of issue and must be chosen from the permissible package types agreed to by the Services.

Valid X12.3 Code	Definition
BX	Box
CH	Container
CN	Can
DR	Drum
KT	Kit
PC	Piece
PL	Pallet/Unit Load
RL	Roll
ST	Set
EA	Each

Figure A-4 Label Traceability Code Package Types (UM)

- (5) Construction of the traceability code must consist of the following sub elements: YY=year, MM=month, DD=date, hh=hour, mm=minute, ssss=seconds and hundredths of a second, RR=random number, NX=label N of X labels. No more than one label should be generated during each hundredth of a second for this traceability code format.
- (6) An alternate for “ssss” in the traceability code is: ssss=a second (00 to 59) and the label number generated during that second (00 to 99; i.e. “ssss” could equal 0000 to 5999). No more than 100 labels may be generated per second using this format.
- (7) When multiple labels are required to mark a single entity, the first 18 characters of the traceability code must be common to each label series and the final two characters identify each label, e.g. 1 of 3, 2 of 3, 3 of 3. If only a single label, use 1 of 1 (see Figure 49).

Type use	Example
Single label for a pallet	PL090310142235587211
Series of labels for a pallet where data requires two labels First (1 of 2) label Second (2 of 2) label	PL090310142235587212 PL090310142235587222
Single label for a box	BX090310142235587211

- b. **Package weight (WT).** Optional data element identified by the DI "2Q".
 - (1) Must be a positive, non-zero quantity.
 - (2) Must in the range of ".00000001" to "999999999".
 - (3) May be a decimal quantity.
 - (4) If a decimal quantity is used, the decimal character must be a period (".").
 - (5) When encoded as ASCII characters, the total maximum length of the package weight is nine characters.
 - (6) Insignificant leading and trailing zeros must be suppressed, except for a single leading zero for decimal quantities which have only a fractional part. For example, ".01" and "0.01" are permitted, but "00.01", "123.00", and "0123" are not.
 - (7) Thousand separators or other digit group separators are not allowed.
 - (8) Only one DI "2Q" may appear on a label or label series.

Type use	Examples
Minimum weight	.00000001
Maximum weight	999999999
Weight with a single leading zero for its whole number	0.025

c. **Package weight unit.** Optional data element if the package weight is in pounds; mandatory if other than pounds. Identified by the DI "3Q".

- (1) Only one DI "3Q" must be used on the lead label.
- (2) Valid entries are "LB" or "KG" only.

Type use	Examples
Weight is measured in pounds	LB
Weight is measured in kilograms	KG

d. **Package cube (CU).** Optional data element used to document the total cube (volume) of the package and is identified by the DI "18Q".

- (1) Must be a positive, non-zero quantity.
- (2) Must in the range of ".00000001" to "999999999".
- (3) May be a decimal quantity.
- (4) If a decimal quantity is used, the decimal character must be a period (".").
- (5) When encoded as ASCII characters, the total maximum length of the package weight is nine characters.
- (6) Insignificant leading and trailing zeros must be suppressed, except for a single leading zero for decimal quantities, which have only a fractional part. For example, ".01" and "0.01" are permitted, but "00.01", "123.00", and "0123" are not.
- (7) Thousand separators or other digit group separators are not allowed.
- (8) Only one DI "18Q" may appear on a label or label series.
- (9) Only valid entries are "CF" cubic feet or "CR" cubic meters.

Type use	Examples
Minimum cube	.00000001CF .00000001CR
Maximum cube	999999999CF 999999999CR
Cube with a single leading zero for its whole number	0.025CF 0.025CR

e. **National stock number(s) (NSN).** Mandatory data element if assigned that is used for identification in all logistic processes and is identified by the DI "N".

- (1) If the materiel has an NSN assigned, it must be used. If no NSN has been assigned, then the part number must be used to identify the materiel.
- (2) One or more NSNs may occur on the same label or label series.
- (3) The NSN must be either 13 characters long or 15 characters long if it includes the material management code (MMC).

- (4) Dash characters which are sometimes used to visually identify logical constituents of the NSN (as in "1315-01-245-4950") must not be contained in the NSN encoded in the bar code.

Type use	Example
Nominal case	1315012450124
NSN with material management code (MMC)	1315012450124CM

- f. **Part number(s) (PN).** Mandatory data element if the materiel does not have an NSN assigned and is identified by the DI "1P".
- (1) Used only if the materiel does not have an NSN assigned.
 - (2) One or more part numbers may occur on the same label or label series.
 - (3) The part number is 1 to 32 characters long.

Type use	Example
Nominal case	C995

- g. **Department of Defense Identification Code (DODIC).** Mandatory data element for materiel that has been assigned one. It provides a means for materiel handlers to easily identify the type of ammunition and is identified by the DI "4R".
- (1) If a DODIC has not been assigned, it must not be used or encoded.
 - (2) A DODIC always applies to the NSN or PN which preceded the DODIC in the bar code.
 - (3) The DODIC is exactly four characters long.

Type use	Example
Nominal case	C995

- h. **Hazardous material code.** Optional data element for materiel that has been assigned a United Nations (UN) or North American (NA) HAZMAT identification number and is identified by the DI "10P".
- (1) If a hazardous material code has not been assigned, it must not be used or encoded.
 - (2) A hazardous material code always applies to the NSN or PN which preceded the hazardous material code in the bar code.
 - (3) At most, one hazardous material code may be encoded in the bar code for each NSN or PN.
 - (4) Systems must ensure that they maintain the ability to read the legacy MIL-STD-129 Ammunition and Explosives Palletization/Packaging Label UN HAZMAT identification number format of an1+an..4; for example, U1234.

Type use	Example Data	Human Readable
UN Number	DUN1234	UN1234
NA Number	DNA3456	NA3456

- i. **Nomenclature.** Optional data element that provides a description of the materiel contained in the package and is identified by the DI "6W".
- (1) Authoritative source for the nomenclature is the Federal Logistic Information System.
 - (2) If the materiel does not have an assigned nomenclature, the nomenclature field must contain a user defined accurate description of the asset.
 - (3) If the nomenclature length is more than 44 characters (includes spaces), the nomenclature must be truncated so that the left-most 44 characters are retained.

- (4) The nomenclature always applies to the NSN or PN which preceded the nomenclature in the bar code.
- (5) At most, one nomenclature must be encoded for each NSN or PN.
- (6) Leading or trailing spaces in the nomenclature must not be encoded.
- (7) Embedded spaces separating words in the nomenclature must be encoded.

Type use	Examples
Nominal case	BOMB GP 2000 LB MK84-2 TRITONAL LDD
Truncated representation	PROJ5/38VTNF MK31,35,49NSD ADF GRAY BRST STA NOTE: This is a (hypothetical) 44-character truncated representation. The non-truncated representation is "PROJ5/38VTNF MK31,35,49NSD ADF GRAY BRST STANDARD ISSUE"

- j. **Lot number(s) (Lot).** Mandatory data element if assigned that identifies a manufacture's batch of production and is identified by the DI "1T".
 - (1) Lot number is in the range 1 to 17 characters in length.
 - (2) The dash ("-") is the only special character allowed.
 - (3) Not all ammunition and explosives are assigned a lot number for management.
 - (4) More than one lot number may be encoded under a given NSN or PN.
 - (5) Lot number may also have serialized items within the lot.
 - (6) The lot number always applies to the NSN or PN which preceded the lot number in the bar code.

Type use	Example
Nominal case	LC-05A603L362A

- k. **Serial number(s).** Mandatory data element if assigned and is identified by the DI "S".
 - (1) Serial number is in the range "1" to "30" characters in length: "0" through "9" and "A" through "Z".
 - (2) The dash ("-") is the only special character allowed.
 - (3) If materiel does not have an assigned serial number, the serial number field must not be encoded.
 - (4) More than one serial number may be encoded in the bar code for each NSN or PN if no lot number is assigned.
 - (5) When materiel has a lot number assigned, the serial number(s) are repeated under the lot number level.
 - (6) Where materiel has a lot number and serial numbers assigned, the number of serial numbers listed for each lot should equal the lot number quantity. For example, Lot 09TL001-001 has serialized assets and four items are in the package (LOT: 09TL001-001, QTY/UI 4 EA, SN: THL1111, THL2222, THL3333, and THL4444).
 - (7) A serial number with the same lot number and stock number must not appear more than once on the same label.

Type use	Examples
Nominal case	517883 L1234-123

- i. **Quantity (unit of measure).** Mandatory data element which consists of two sub data elements. The first nine digits identify the item count. Unit of measure information for the last two characters is sourced from the system of record and encoded using an ANSI ASC X12.3 Data Element 355 (Unit or Basis for Measurement) code for the respective unit of measure. Identified by the DI "7Q".
- (1) Digits must be a positive, non-zero quantity.
 - (2) Digits must be in the range of ".00000001" to "999999999".
 - (3) Count may be a decimal quantity.
 - (4) If a decimal quantity is used, the decimal character must be a period (".").
 - (5) When encoded as ASCII characters to accommodate decimal values, the total maximum length of the quantity is nine characters.
 - (6) For the item count, insignificant leading and trailing zeros must be suppressed, except for a single leading zero for decimal quantities which have only a fractional part. For example, ".01" and "0.01" are permitted, but "00.01", "123.00", and "0123" are not.
 - (7) Thousand separators or other digit group separators are not allowed.
 - (8) The quantity field is included in the stock level detail and if there is more than one lot number, it is repeated for each lot number as well. Thus, the label shows the total count of the NSN and count for each lot number.
 - (9) Valid codes to encode the information are extracted from the ANSI ASC X12.3 Data Element 355 (Unit or Basis for Measurement) codes and they are shown in [Figure A-9](#) of this standard.
 - (10) Printed human-readable information. The Unit of Measure Designation code or ANSI ASC X12.3 Data Element 355 (Unit or Basis for Measurement) code must be printed as human-readable information on the labels. Each Service's AIS must provide for quantity conversions, if required, for unit of issue codes, unit of measure codes, and X12.3 Data Element 355 codes.

Type use	Example
Nominal case	2EA

- m. **Condition code.** Optional data element that is used to identify the condition of materiel in the package and is identified by the DI "2R".
- (1) Always a single alphabetic character.
 - (2) Valid characters are "A" through "H", "J" through "N", "P" through "S", or "V".
 - (3) Empty condition code DI must not be encoded.
 - (4) Condition code always consists of a single alphabetic character.
 - (5) A condition code always applies to the level of the data hierarchy (lot number or serial number) which preceded it in the bar code. If the condition code follows a lot number, it must apply to all the items that follow for that lot number. If the condition code follows a serial number, it applies to only that serial number.

Type use	Example
Nominal case	B

- n. **Container ID.** Optional data element that is used to identify a package. Identified by the DI "1B".
- (1) Container ID is a 2 to 11-character alphanumeric identifier.
 - (2) The dash ("-") is the only special character allowed.

- (3) If materiel does not have an assigned container ID, the container ID field must not be encoded in the bar code.
- (4) Only one DI "1B" may appear on a label or label series.

Type use	Examples
Nominal case	TGHU2962459 85AF032

- o. **Document number.** Optional data element that indicates the materiel release order document number (requisition number) for the package contents. Identified by the DI "12S".
 - (1) Document number is 14 to 15 alphanumeric characters: "0" through "9" and "A" through "Z".
 - (2) No special characters are allowed.
 - (3) An empty document number DI must not be encoded.
 - (4) A document number always applies to the level of the data hierarchy (lot number or serial number) which preceded it in the bar code. If the document number follows a lot number, it must apply to all the items that follow for that lot number. If the document number follows a serial number, it applies to only that serial number.

Type use	Examples
Nominal case	W81YWB63250111 FV336572345000

- p. **Expiration date.** Optional data element that indicates maintenance, expiration, next inspection (M.E.N.) in which the materiel must be recertified before utilization. Identified by the DI "7D".
 - (1) Expiration date always consists of a 4-character numeric date (MMYY) identifier.
 - (2) An empty expiration date DI must not be encoded.
 - (3) Month and day parts must be left-padded with zeros, if needed, to ensure that both the month and day parts are each two characters long.
 - (4) The month part must be in the range "01" through "12".
 - (5) Deleted.
 - (6) An expiration date always applies to the level of the data hierarchy (lot number or serial number) which preceded it in the bar code. If the expiration date follows a lot number, it must apply to all the items that follow for that lot number. If the expiration date follows a serial number, it applies to only that serial number.
 - (7) A line item (lot quantity or serialized item) may have only one expiration date.

Type use	Example
Nominal case (Jan 2018)	0118

- q. **Facility/building.** Optional data element used to record the intended or actual building, facility, vessel, or other storage location in which a package is stored. Identified by the DI "L".
 - (1) Facility/building is a 2 to 14-character alphanumeric identifier.
 - (2) If the materiel does not have a facility or building assigned, then it must not be encoded.
 - (3) Only one DI may appear on a unit load label or label series.
 - (4) Empty facility/building DIs with no element data must not be encoded.

Type use	Example
Nominal case	4047A 0101C0

- r. **Location/grid.** Optional data element used to record the intended or actual storage location within a facility/building in which a package is stored. Identified by the DI "20L".
- (1) Location/grid is a 2 to 14-character alphanumeric identifier.
 - (2) If the materiel does not have location assigned, then it must not be encoded.
 - (3) Only one DI "20L" may appear on a unit load label or label series.
 - (4) Empty location/grids must not be encoded.

Type use	Example
Nominal case	4047A002C001A ABAB

- s. **Owner code.** Optional data element used to indicate the owner of the materiel. The owner code is used as a key field for identifying an ammunition line item and is used in all logistics processes of some Services. Identified by the DI "11V".
- (1) Owner code is a single alphanumeric character.
 - (2) No special characters are allowed.
 - (3) Empty owner code DI must not be encoded.
 - (4) An owner code always applies to the level of the data hierarchy (NSN/PN, lot number or serial number) which preceded it in the bar code. If the owner code appears after an NSN/PN, it must apply to all the items that follow for that NSN/PN. If the owner code follows a lot number, it must apply to all the items that follow for that lot number. If the owner code follows a serial number, it applies to only that serial number.

Type use	Example
Nominal case	5

- t. **Purpose code/activity classification code (ACC).** Optional data element used to indicate the reason for which the materiel is being held in inventory. Identified by the DI "86Y".
- (1) Purpose code and ACC share the same DI but are programmatically identified by the first alphabetic character "P" for "purpose" or "A" for "activity".
 - (2) The purpose code valid characters are: "A" through "H", "J" through "N", "P", "Q", "S", "T", "V", "W", "Y", and "Z".
 - (3) The activity classification code valid characters are: "A" through "H", "J" through "N", "Q", "R", "T", "V", "W", and "Z".
 - (4) Empty purpose code/ACC DI must not be encoded.
 - (5) A purpose code always applies to the level of the data hierarchy (NSN/PN, lot number, or serial number) which preceded it in the bar code. If the purpose code appears after an NSN/PN, it must apply to all the items that follow for that NSN/PN. If the purpose code follows a lot number, it must apply to all the items that follow for that lot number. If the purpose code follows a serial number, it applies to only that serial number.

Type use	Example
Nominal case (purpose code "A")	PA
Nominal case (ACC "B")	AB

- u. **QA certification date.** Optional data element used to document the date that a quality assurance inspector certified the package integrity and item condition located within the package. Identified by the DI "20D".
 - (1) QA certification date consists of nine characters (DDMMYYYY).
 - (2) Empty QA certification dates must not be encoded.
 - (3) The DD (day of month) part of the QA certification date must be consistent with the month selected. For example, 31 MAR would be acceptable, whereas 31 APR would not.
 - (4) The DD (day of month) part must be left-padded with a zero, if needed to ensure that it is two characters long. For example, 02MAR2009 would be correct; 2MAR2009 would not be correct.
 - (5) The MMM (month) part must be one of the following: "JAN", "FEB", "MAR", "APR", "MAY", "JUN", "JUL", "AUG", "SEP", "OCT", "NOV", "DEC".
 - (6) A QA certification date always applies to the level of the data hierarchy (lot number, or serial number) which preceded it in the bar code. If the QA certification date follows a lot number, it must apply to all the items that follow for that lot number. If the QA certification date follows a serial number, it applies to only that serial number.

Type use	Example
Nominal case	04JUL2018

- v. **QA defect code.** Optional data element used to identify defects known to exist for the materiel in or on the package. Identified by the DI "37Y".
 - (1) The QA defect code must always consist of six alphanumeric characters "0" through "9" and "A" through "Z".
 - (2) No special characters are allowed.
 - (3) Empty QA defect code DI must not be encoded.
 - (4) A line item (lot quantity or serialized item) may contain up to two QA defect codes.
 - (5) A QA defect code always applies to the level of the data hierarchy (lot number, or serial number) which preceded it in the bar code. If the QA defect code follows a lot number, it must apply to all the items that follow for that lot number. If the QA defect code follows a serial number, it applies to only that serial number.

Type use	Examples
Nominal case	1551AW HAN25D

- w. **QA stamp.** Optional data element used to identify the individual and activity performing the most recent inspection on the asset. Identified by the DI "1H".
 - (1) QA stamp consists of 9 to 10 alphanumeric characters "0" through "9" and "A" through "Z".
 - (2) Empty QA stamp DI must not be encoded.
 - (3) QA stamp is always accompanied with a QA certification date.
 - (4) A QA stamp always applies to the level of the data hierarchy (lot number or serial number) which preceded it in the bar code. If the QA stamp follows a lot number, it must apply to all the items that follow for that lot number. If the QA stamp follows a serial number, it applies to only that serial number.

Type use	Examples
Nominal case	FV5872001 1234567890

- x. **Weapon stock number (WSN).** Optional data element used to associate a set of individual components that make up a single round. Identified by the DI "30T".
- (1) WSN is a 1 to 14-character alphanumeric identifier.
 - (2) If the materiel does not have a WSN assigned, then it must not be encoded.
 - (3) Only one DI "30T" may appear on a unit load label or label series.

Type use	Example
Nominal case	BC27A462500564 BJ97B522800238

Format 06 Data Identifier	Format 06 Usage (See NOTE 1)	Data Sources
J (JKUSM)	Transportation Control Number (TCN) Data identifier "KUSM" follows DI "J" to provide global uniqueness IAW ISO/IEC 15459-1 formats.	DTR Pt II Table 208-2 DTR Pt II App L DTR Pt II App M
6J (6JKUSM)	Transportation Tracking Number (TTN) Data identifier "KUSM" follows the DI "6J" to provide global uniqueness IAW ISO/IEC 15459-1 formats.	DTR Pt II Chapter 208
1B	Container ID – Used for non-ISO containers.	System of Record
3D	Ship Date – Format YDDD.	DTR Pt II Table 208-2
7D	Expiration Date – Format (MMYY).	As marked
14D	Expiration Date – Format YYYYMMDD.	System of Record
20D	QA Cert Date – Format DDMMYYYY.	System of Record
1H	QA Stamp	System of Record
I	Vehicle Identification Number (VIN)	DTR Pt II Chapter 208
4K	Contract Line-Item Number (CLIN)	Contract
5K	Contractor Shipment Number	DD Form 250
8K	Contract Number	Contract
9K	Transportation Account Code (TAC)	DTR Pt II Table 208-2 DTR Pt II App M DTR Pt II App L DTR Pt II App V
L	Facility/Building – Storage location	System of Record
2L	Ship To Address – Up to 5 lines of 35 characters. See NOTE 2.	DTR Pt II Table 208-2
3L	From Address – Up to 3 lines of 35 characters. See NOTE 2.	DTR Pt II Table 208-2
5L	Consignee Address – Up to 5 lines of 35 characters. See NOTE 2.	DTR Pt II Table 208-2
20L	Location/Grid	System of Record
51L	Origin Zip Code – For SEAVAN point of origin.	DTR Pt II App M (TCMD T_9, Table M-14, rp 9-14)

Figure A-5 (Sheet 1 of 3) 2D (PDF417 or Data Matrix) Bar Code Data Element Identifier Descriptions (Format 06)

Format 06 Data Identifier	Format 06 Usage (See NOTE 1)	Data Sources
N	National/NATO Stock Number (NSN) – Or stock identification elements thereof.	DTR Pt II App M (TCMD T_6) DD 1348-1A
1P	Part Number – Assigned by manufacturer.	As marked
6P	Item Identifier – Concatenated CAGE/NCAGE (Manufacturer) + Part Number + Serial Number.	As generated or marked
8P	GTIN 14-digit GS1 format for GTIN-14 code structure	GS1 General Specification and ANSI MH10.8.2
10P	Hazardous Material Code Hazard Code “D” (ANSI ASC X12.3 Data Element 208) follows DI “10P” to further qualify the data as a Title 49 CFR, Part 172.101 hazardous materials identification number in the form of UNnnnn or NAnnnn.	As marked
Q	Quantity, Number of Pieces, or Amount (numeric only) (unit of measure and significance mutually defined).	
2Q	Weight – With optional metric unit of value for cargo. Default = pounds. See NOTE 3.	DTR Pt II Table 208-2
3Q	Weight Units	DTR Pt II Table 208-2
7Q	Quantity (Unit of Issue [UI]) See NOTE 5.	DD 1348-1A (rp 25-29) = Qty DD 1348-1A (rp 23/24) = UI
	Quantity (Unit of Measure [UM]) See NOTE 5.	FLIS System of record
	Weight See Figure A-9, NOTES 1 and 2 for legacy ammo label use.	As marked
	Cube See Figure A-9, NOTES 1 and 2 for legacy ammo label use.	As marked
12Q	Unit Price – With unit of value = USD.	DD 1348-1A (rp 74-80)
13Q	Piece Number/Total Pieces – Piece n of x of pieces.	DTR Pt II Table 208-2
18Q	Cube (Gross)	As marked
2R	Condition Code	DD 1348-1A (rp 71)
4R	US DoD Identification Code (DODIC)	DTR Pt II App M (TCMD T_6)
S	Serial Number or Code	As marked
8S	Supplier ID/Unique Container ID – Presented in the data format specified by the GS1 SSCC-18.	GS1 General Specification
12S	Supply Documentation Number – And suffix code when applicable.	DD 1348-1A (rp 30-44)
13S	Security Seal Number	DTR Pt II App M (TCMD T_9, Table M-14)
20S	Traceability Code/Serial Number	As generated or marked
25S	Unique Item Identifier (UII) – Documents as a single value the UII elements of an item unique identification (IUID) mark or the IUID equivalent mark as specified in DND Specification D-02-002-001/SG-001.	Derived from the item IUID mark
1T	Lot/Batch Number or Traceability Number – For a group of entities.	DTR Pt II App M (TCMD T_7) DD 1348-1A
30T	Weapons Stock Number (WSN)	System of Record

Figure A-5 (Sheet 2 of 3) 2D (PDF417 or Data Matrix) Bar Code Data Element Identifier Descriptions (Format 06)

Format 06 Data Identifier	Format 06 Usage (See NOTE 1)	Data Sources
V	Routing Identifier Code (RIC) – Shipping Activity – The “From” RIC for shipper.	DD 1348-1A (rp 4-6)
4V	Ocean Carrier Code – For SEAVANs.	DTR Pt II App M (TCMD T_9, Table M-14) DTR Pt II App SS
7V	Ownership Code	DLM 4000.25-2, App 2.3
11V	Ownership Code	DLM 4000.25-2, App 2.3
8V	Distribution Cognizance Code – Last 2 positions of DND distribution code used for DD Form 1348-1A linear bar code.	DD 1348-1A (rp 55-56)
17V	Commercial and Government Entity (CAGE) Code – The consignor CAGE code for an MSL or the CAGE code for a container ID mark of the company awarded the contract for the item being shipped.	As marked
6W	Nomenclature	System of Record
37Y	QA Defect Code	System of Record
86Y	Purpose Code or Activity Classification Code	System of Record

Figure A-5 (Sheet 3 of 3) 2D (PDF417 or Data Matrix) Bar Code Data Element Identifier Descriptions (Format 06)

Compliance Indicator	Element Separator	Format Header	Format 06 DI	Data Field	Data Format Type/Length	Sample Data without DI/DEI
[]>				Message Header Compliance Indicator		[]>
	RS	06		Data Identifier Format Header		06
	GS		JKUSM	TCN	an17	SW81238350D001XXX
	GS		8S	SSCC	an2+n18	007189085627231896
	GS		6JKUSM	TTN NOTE: The TTN should only be used for unit move cargo documented with a unit move TCN.	n17	12345678901000007
	GS		3D	Ship Date	an4	1090
	GS		9K	TAC	an4	SZZZ
	GS		2L	Ship To Address See NOTE 1	an..35+ an..35+ an..35+ an..35+ an..35 See NOTE 3.	1st address line+ 2nd address line+ 3rd address line+ 4th address line+ 5th address line
	GS		3L	From Address See NOTE 1	an..35+ an..35+ an..35 See NOTE 3.	1st address line+ 2nd address line+ 3rd address line
	GS		5L	Consignee Address See NOTE 1	an..35+ an..35+ an..35+ an..35 See NOTE 3.	1st address line+ 2nd address line+ 3rd address line
	GS		51L	Origin Zip Code for SEAVAN point of origin	an5	45324
	GS		N	NSN See NOTE 2	an..13	1234567890123
	GS		Q	Quantity, Number of Pieces, or Amount (numeric only) (unit of measure and significance mutually defined)		
	GS		2Q	Weight (shipment piece) default = pounds	an..5+../an2 See NOTE 4.	7760 Or metric: 1759/KG

Figure A-6 (Sheet 1 of 4) MSL (Generic) 2D (PDF417) Bar Code Format

Compliance Indicator	Element Separator	Format Header	Format 06 DI	Data Field	Data Format Type/Length	Sample Data without DI/DEI
	GS		13Q	Piece Number/ Total Pieces	an..4/an..4	1/1
	GS		4R	DODIC See NOTE 2	an4	PL23
	GS		13S	Security Seal Number	an8	90876787
	GS		1T	Lot Number See NOTE 2		MCG77G002-060
	GS		4V	Ocean Carrier Code	an4	SEAU
	GS		17V	CAGE/NCAGE Code – Consignor	an5	6R517
	RS	07		Free Form Text Format Header		07
	GS			Project Code	an3	9BU
	GS			Model Identifier	an..10	KZ456754
	GS			Cube (shipment piece)	an..4+../an2 See NOTE 4.	35
	GS			Water Commodity/ Special Handling Codes	an5	390Z9
	GS			Length Default = inches	n..6+../an2 See NOTE 4.	1239
	GS			Width Default = inches	n..4+../an2 See NOTE 4.	123
	GS			Height Default = inches	n..4+../an2 See NOTE 4.	135
	GS			Pallet Identifier	an..6	DOVARC
	GS			Air Dimension Code	an1	A
	GS			Container Number Code	an5	13579
	GS			POE Code	an3	DOV
	GS			POD Code	an3	RMS
	GS			Consignee DODAAC	an6	W55XGJ
	GS			Transportation Priority	n1	1
	GS			Consignor DODAAC	an6	SW8123
	GS			Method Code	an1	B
	GS			RDD	an..3	999
	GS			Manifest Doc ID Code (header DIC only)	an3	TX1

Figure A-6 (Sheet 2 of 4) MSL (Generic) 2D (PDF417) Bar Code Format

Compliance Indicator	Element Separator	Format Header	Format 06 DI	Data Field	Data Format Type/Length	Sample Data without DI/DEI
	GS			Text Comment	an..60	NO LINE ITEM DATA
	GS			Serial Number	an..13	234567890123
	GS			Nomenclature	an..14	Boots
	GS			Number of Rounds	n..6	112000
	GS			UN Class/ Division Code	an2	11
	GS			UN/NA Indicator	an2	UN
	GS			UN/NATO ID Number	an4	2766
	GS			Compatibility Group Code	an1	Z
	GS			Net Explosive Weight	n..6	449800
	GS			Type Service	an..10	Frt LTL
	GS			Air Commodity/ Special Handling Codes	an2	AZ
	GS			Type Pack Code	an2	BX
	GS			SEAVAN Ownership Code	an4	SEAU
	GS			CDIST Code for number of Consignees	an1	M
	GS			SUs in Van	n2	12
	GS			Pieces in Van	n4	1234
	GS			Van Inside Cube	an..4	1234
	GS			Van Length	an..2	40
	GS			Van Number (complete)	an8	12345678
	GS			Check Digit	n1	9
	GS			Temperature Range	an..5	F632
	GS			Stopoff Number and Consignee DODAAC	n..2+an6	1AF5612
	GS			FMS Case Number	an3	CKM
	GS			Stopoff Consolidation Code	an1	X
The following sets of data (DI "12S" through "12Q") repeat for each supply line item in the shipment. ISO/IEC 15434 Format 06 envelopes may be used to associate line item specific data (e.g. document number, NSN, quantity, etc.). Each supply document series must begin with a DI "12S" and terminate with a DI "12Q" code – if either of these two fields are blank, they must be encoded.						
	RS	06		Data Identifier Format Header		06

Figure A-6 (Sheet 3 of 4) MSL (Generic) 2D (PDF417) Bar Code Format

Compliance Indicator	Element Separator	Format Header	Format 06 DI	Data Field	Data Format Type/Length	Sample Data without DI/DEI
	GS		12S	Supply Document Number	an14..15	WK4GEY80110231
	GS		N	NSN	an..15	5310011987585
	GS		4R	DODIC (ammo only)	an4	PL23
	GS		1T	Lot Number (ammo only)	an..25	MCG77G002-060
	GS		7Q	Quantity (Unit of Issue)	an1..5+an2 See NOTE 5.	5EA
	GS		V	Routing Identifier Code	an3	S9I
	GS		2R	Condition Code	an1	A
	GS		8V	Distribution Code	an2	7V
	GS		12Q	Unit Price	n..9+.n2+an3	12345.90USD
	RS	06		Data Identifier Format Header		06
	GS		12S	Supply Document Number	an14..15	WK4GEY80110232
	GS		N	NSN	an..15	5310011987585
	GS		4R	DODIC (ammo only)	an4	PL23
	GS		1T	Lot Number (ammo only)	an..25	MCG77G002-060
	GS		7Q	Quantity (Unit of Issue)	an1..5+an2 See	5EA
	GS		V	Routing Identifier Code	an3	S9I
	GS		2R	Condition Code	an1	A
	GS		8V	Distribution Code	an2	7V
	GS		12Q	Unit Price	n..9+.n2+an3	12345.90USD
	RS EOT			Format Trailer Message Trailer		

Figure A-6 (Sheet 4 of 4) MSL (Generic) 2D (PDF417) Bar Code Format

NOTES

1. In order to provide space in the 2D (PDF417) bar code for multiple supply line item data, the in-the-clear address data is not printed in the 2D (PDF417) bar code for shipment units containing multiple supply line items (multipack or consolidated shipment).
2. The plus symbol ("+") is used as a delimiter between the data elements and is part of the data sub-string.

3. To accommodate current automated information systems, US default values are assumed as shown. Metric data values may be used in the 2D (PDF417) bar code for generic MSL shipment descriptions, but the data values must be marked with metric units using an ANSI ASC X12.3 Data Element 355 (Unit or Basis for Measurement) code. The ANSI ASC X12.3 data elements selected for use are: KG = kilograms, CM = centimeter, CC = cubic centimeter, MR = meter, CR = cubic meter. Decimal values are allowed in the 2D (PDF417) bar code. Human translations printed on the US DoD MSL must be in US standard formats and must be rounded to the next higher whole number with leading zeros suppressed.
4. The encoded data element consists of two sub data elements. The digits identify the item count. The last two characters are a machine-readable ANSI ASC X12.3 Data Element 355 (Unit or Basis for Measurement) code for the respective unit of issue. When printed as human-readable information, the ANSI ASC X12.3 Data Element 355 code is translated to a unit of issue code/abbreviation (see [Figure A-5](#)).

Compliance Indicator	Element Separator	Format Header	Format 06 DI	Data Field	Data Format Type/Length	Sample Data without DI/DEI
[]>				Message Header Compliance Indicator		[]>
	RS	06		Data Identifier Format Header		06
	GS		JKUSM	TCN	an17	AWS1EAA\$0D00340XX
	GS		6JKUSM	TTN	n17	12345678901000007
	GS		I	VIN	an17	V739GXL1794AB12PZ
	GS		9K	TAC	an4	YZZZ
	GS		2L	Ship To Address	an..35+ an..35+ an..35+ an..35+ an..35 See NOTE 1	1st address line+ 2nd address line+ 3rd address line+ 4th address line+ 5th address line
	GS		3L	From Address	an..35+an..35+ an..35 See NOTE 1	1st address line+ 2nd address line+ 3rd address line
	GS		5L	Consignee Address	an..35+ an..35+ an..35+ an..35+ an..35 See NOTE 1	1st address line+ 2nd address line+ 3rd address line+ 4th address line+ 5th address line
	GS		51L	Origin Zip Code for SEAVAN point of origin	an5	45324
	GS		N	NSN	an..15	8115001682275
	GS		Q	Quantity, Number of Pieces, or Amount (numeric only) (unit of measure and significance mutually defined)		
	GS		2Q	Weight (shipment piece) default = pounds	an..5+../an2 See NOTE 2	14000
	GS		13Q	Piece Number/ Total Pieces	an..4/an..4	1/1
	GS		4R	DODIC	an4	PL23
	GS		13S	Security Seal Number	an8	90876787
	GS		25S	Unique Item Identifier	an..78	UN077991289123456789 0123
	GS		1T	Lot Number	an..25	MCG77G002-060
	GS		4V	Ocean Carrier Code	an4	SEAU

Figure A-7 (Sheet 1 of 3) MSL (Generic) 2D (PDF417) Bar Code Format

Compliance Indicator	Element Separator	Format Header	Format 06 DI		Data Field	Data Format Type/Length	Sample Data without DI/DEI
	RS	07			Free Form Text Format Header		07
	GS				Project Code	an3	9BU
	GS				ULN	an..7	1234567
	GS				UIC	an6	WS1EAA
	GS				Bumper Number	an..8	HQ-123
	GS				Unit Equipment Description	an..20	HELICPR CARGO MH- 60K
	GS				Model Identifier	an..10	12345ASDFG
	GS				Cube (shipment piece)	an..4+../an2 See NOTE 2	1200
	GS				Water Commodity/ Special Handling Codes	an5	900Z9
	GS				Length Default = inches	n..6+../an2 See NOTE 2	1239
	GS				Width Default = inches	n..4+../an2 See NOTE 2	123
	GS				Height Default = inches	n..4+../an2 See NOTE 2	135
	GS				Pallet Identifier	an..6	DOVARC
	GS				Air Dimension Code	an1	A
	GS				Container Number Code	an5	13579
	GS				POE Code	an3	DOV
	GS				POD Code	an3	RMS
	GS				Consignee DODAAC	an6	W44TYH
	GS				Consignor DODAAC	an6	AWA2UC
	GS				Method Code	an1	A
	GS				RDD	an..3	123
	GS				Manifest Doc ID Code (header DIC only)	an3	TX1
	GS				Text Comment	an..60	60 text characters
	GS				Serial Number/ Package ID	an..13	1234567890123
	GS				Nomenclature	an..14	Parts
	GS				Number of Rounds	n..6	112000
	GS				UN Class/ Division Code	an2	1A
	GS				UN/NA Indicator	an2	UN

Figure A-7 (Sheet 2 of 3) MSL (Generic) 2D (PDF417) Bar Code Format

Compliance Indicator	Element Separator	Format Header	Format 06 DI	Data Field	Data Format Type/Length	Sample Data without DI/DEI
	GS			UN/NATO ID Number	an4	2766
	GS			Compatibility Group Code	an1	Z
	GS			Net Explosive Weight	n..6	449800
	GS			Air Commodity/ Special Handling Codes	an2	VD
	GS			Type Pack Code	an2	BX
	GS			SEAVAN Ownership Code	an4	SEAU
	GS			CDIST Code	an1	M
	GS			SUs in Van	n2	12
	GS			Pieces in Van	n4	1234
	GS			Van Inside Cube	n..4	1234
	GS			Van Length	n..2	40
	GS			Van Number (complete)	an8	12345678
	GS			Check Digit	n1	9
	GS			Temperature Range	an..5	F632
	GS			Stopoff Number and Consignee DODAAC	n..2+an6	1AF5612
	GS			Stopoff Consolidation Code	an1	X
	RS EOT			Format Trailer Message Trailer		

Figure A-7 (Sheet 3 of 3) MSL (Generic) 2D (PDF417) Bar Code Format

NOTES

1. The plus symbol ("+") is used as a delimiter between the data elements and is part of the data sub-string.
2. To accommodate current automated information systems, US default values are assumed as shown. Metric data values may be used in the 2D (PDF417) bar code for generic MSL shipment descriptions, but the data values must be marked with metric units using an ANSI ASC X12.3 Data Element 355 (Unit or Basis for Measurement) code. The ANSI ASC X12.3 data elements selected for use are: KG=kilograms, CM=centimeter, CC=cubic centimeter, MR=meter, CR=cubic meter. Decimal values are allowed in the 2D (PDF417) bar code. Human Readable values printed on the US DoD MSL must be in US standard formats and must be rounded to the next higher whole number with leading zeros suppressed.

Compliance Indicator	Element Separator	Format Header	Format 06 DI	Data Field (see NOTE 1)	Data Format Type/Length	Sample Data without DI/DEI
[]>				Message Header Compliance Indicator		[]>
	RS	06		Data Identifier Format Header		06
	GS		4K	Contract Line Item Number (CLIN)	an6	0013AB
	GS		5K	Contractor Shipment Number	an7	PBPA001
	GS		8K	Contract Number	an..21	N0002390D0009
	GS		N	NSN	an13	5950001234567
	GS		17V	CAGE Code	an5	1AAA9
	GS		1P	Part Number	an..32	99887712-12SP
	GS		7Q	Quantity (Unit of Issue [UI])	an1..5+an2	4EA
Item Unique Identification (IUID)						
See A.2.5 and the following four examples which use DI "S" to encode serial numbers and DI "25S" to encode UIIs in the package. The 2D (PDF417) bar code may contain a mix of DIs S and 25S. The encoded serialized data structure follows the common data for each package – the common data is not repeated within the bar code for each NSN. NOTE: The serial number component of a UII may or may not be the same as the item's serial number.						
Example: 1 NSN, quantity of 1 item, serialization is based on one or more numbers.						
Use DI "S" and DI "25S" in the Format 06 envelope to encode the serial number and/or UII for the item. The serial number and UII are thus associated to the same single item in the format envelope. The below example is for 1 item.						
	GS		S	Serial Number or Code	an..30	674A36-01
	GS		25S	Unique Item Identifier (UII)	an..50	D1AAA674A36/01
Example (legacy only) – 1 NSN, multiple items, serialization is based on one or more numbers per item.						
The following is a legacy business rule from a previous version of MIL-STD-129 – new systems must be able to read the 2D symbols but should not generate any in this format. In the first ISO/IEC 15434 Format 06 envelope (for multiple items), DI "S" encodes a serial number and DI "25S" encodes a UII – the serialized numbers (serial or UII) are <u>not</u> linked together. A serial number and/or UII may or may not be encoded for each item. The below example is for four different items with the same NSN: one item (in italics) has a serial number (DI "S") not used to derive its UII (DI "25S"), one item (underlined) has a serial number used to derive its UII (DI "S" and "25S"), one item (double underline) has just a serial number (DI "S"), one item has no serial number or UII and is therefore not listed. The data may be encoded in any order.						
	GS		S	Serial Number or Code	an..30	674A3602
	GS		25S	Unique Item Identifier (UII)	an..50	D1AAA999124VA
	GS		S	Serial Number or Code	an..30	9B25643M
	GS		25S	Unique Item Identifier (UII)	an..50	D1AAA99B25643M

Figure A-8 (Sheet 1 of 3) Unit Pack and Container Identification 2D (PDF417) Bar Code Format

Compliance Indicator	Element Separator	Format Header	Format 06 DI		Data Field (see NOTE 1)	Data Format Type/Length	Sample Data without DI/DEI
	GS		S		Serial Number or Code	an..30	674A3603
Example (new format) – 1 NSN, multiple items, serialization is based on one or more numbers per item.							
An additional Format 06 envelope (one per item) must be used for each item to encode item-specific data (e.g. serial number (DI "S"), UII (DI "25S"), etc.) for the uniquely identified item. Additional information may be associated to each serialized item such as condition code, manufacturer CAGE, etc. A serial number and/or UII may or may not be encoded for each item. The below example is for nine items with the same NSN – however, one item has no UII or serial number and is therefore not listed.							
	RS	06			Data Identifier Format Header		06
	GS		S		Serial Number or Code	an..30	674A3604
	RS	06			Data Identifier Format Header		06
	GS		S		Serial Number or Code	an..30	674A3605
	RS	06			Data Identifier Format Header		06
	GS		6P		Item Identifier	an5+an1..32+ an1..30	6R517+998877121SP-002+ 674A3601
	RS	06			Data Identifier Format Header		06
	GS		25S		Unique Item Identifier (UII)	an..50	06141411A0B9C3D5
	RS	06			Data Identifier Format Header		06
	GS		25S		Unique Item Identifier (UII)	an..50	06141411A0B9C3D6
	RS	06			Data Identifier Format Header		06
	GS		25S		Unique Item Identifier (UII)	an..50	D1AAA99B25972M
	GS		S		Serial Number or Code	an..30	9B25972M
	RS	06			Data Identifier Format Header		06
	GS		S		Serial Number or Code	an..30	674A3606
	GS		25S		Unique Item Identifier (UII)	an..50	D1AAA99B25974M
	RS	06			Data Identifier Format Header		06
	GS		S		Serial Number or Code	an..30	674A3607

Figure A-8 (Sheet 2 of 3) Unit Pack and Container Identification 2D (PDF417) Bar Code Format

Compliance Indicator	Element Separator	Format Header	Format 06 DI		Data Field (see NOTE 1)	Data Format Type/Length	Sample Data without DI/DEI
	GS		25S		Unique Item Identifier (UII)	an..50	D1AAA99B25975M
Example – Multiple NSNs							
Prepare a packing list for each NSN following the applicable examples above for 1 NSN.							
	RS EOT				Format Trailer Message Trailer		

Figure A-8 (Sheet 3 of 3) Unit Pack and Container Identification 2D (PDF417) Bar Code Format

NOTES

- For PDF417 marks on unit packs and intermediate containers only encode the following Data Elements: (1) NSN DI “N” (if item has an NSN and it is not encoded in a linear bar code); (2) Serial Number DI “S” (if the item has a serial number); (3) UII DI “25S” (if the item has a UII). When an item is assigned a UII and a serial number, both must be encoded (see 5.4.1.1.2).

Mandatory (M) Optional	Compliance Indicator	Element Separator	Format Header	Format 06 DI	Data Field	Data Format Type/ Length	Sample Data without DI/DEI
M	[>				Message Header Compliance Indicator		[>
M		RS	06		Data Identifier Format Header		06
Mandatory Package Level Data							
M		GS		20S	Label Traceability Code Format is UMYMMDDhhmmssssRRNX UM=unit for measurement YY=year MM=month DD=date hh=hour mm=minute, ssss=seconds and hundredths of a second RR=random number NX=label N of X labels See NOTE 3.	an20 See NOTE 3.	KT020218160123400612
Mandatory Stock Item Level Data							
The stock item level data identifies the NSN or PN set of data (beginning with DI "N" or DI "1P") and may repeat for the package level set. Entries within each stock item data set may be in any order following DI "N" or "1P".							
M		GS		N 1P	NSN or Part Number	an13..15 an..32	1234567890123 1234567890123JB 3456999223456
M		GS		4R	DODIC	an4	P123
M		GS		7Q	Quantity	n..9+an2	25EA
Mandatory Lot Number/Serial Number Level Data							
Within each NSN or PN data set, multiple serial numbers (beginning with DI "S") or multiple lot number data sets (beginning with DI "1T") may exist and be repeated. Within the lot number sets, multiple serial numbers may exist and be repeated. Entries within each data set may be in any order. See NOTE 6 for IUID marking as applicable.							
M		GS		1T	Lot Number	an..17	MCG77G002-161
M		GS		7Q	Quantity (Unit of Measure) See NOTE 5.	n..9+an2 See NOTE 3.	20EA
M		GS		S	Serial Number or Code	an..30	1234567891
		RS EOT			Format Trailer Message Trailer		
Optional Data Elements							
The following data elements are optional and may be encoded within the Ammunition and Explosives Palletization/Packaging Label data structure shown above at the Services discretion to support Service unique requirements and criteria. Upon transfer to another Service, all labels must contain only the mandatory elements of this table, unless the gaining Service agrees to accept the Service unique labels.							
O		GS		2R	Condition Code	a1	B
O		GS		1B	Container ID	an2..11	TGHU296245 9 WM2040001

Figure A-9 (Sheet 1 of 2) Ammunition and Explosives Palletization/Packaging Label

Mandatory (M) Optional	Compliance Indicator	Element Separator	Format Header	Format 06 DI	Data Field	Data Format Type/ Length	Sample Data without DI/DEI
O		GS		12S	Document Number	an14	W81YWB63250111
O		GS		7D	Expiration Date (MMYY)	n4	0118
O		GS		Q	Quantity, Number of Pieces, or Amount (numeric only) (unit of measure and significance mutually defined)		
O		GS		2Q	Weight	n..9 See NOTE 1.	1700
O/M		GS		3Q	Weight Units Use of "LB" is optional. Use of "KG" is mandatory as applicable.	an2 See NOTE 3.	LB KG
O		GS		18Q	Cube (Gross)	an..9+an2 See NOTES 2/3.	225CF
O		GS		8P	GTIN	an2+n14	
O		GS		10P	Hazardous Material Code (UN or NA ID Number) See NOTE 4.	an1+ an2+ an..4	DUN1234 DNA3456
O		GS		6W	Nomenclature	an..44	KIT COMPONENT 1
O		GS		L	Facility/Building – Storage location	an2..14	9097A 0101C0
O		GS		20L	Location/Grid	an2..14	9097A001A002B ABAB
O		GS		11V	Ownership Code	an1	5
O		GS		86Y	Purpose Code or Activity Classification Code	an2	PA A2
O		GS		20D	QA Cert Date (DDMMYYYY)	an9	04JUL2018
O		GS		37Y	QA Defect Code	an6	2151AW HAN52D
O		GS		1H	QA Stamp	an9..10	FV5872001 1234567890
O		GS		25S	Unique Item Identifier (UII) See NOTE 6.	an..50	
O		GS		30T	Weapons Stock Number (WSN)	an..14	BJ97B462500513

Figure A-9 (Sheet 2 of 2) Ammunition and Explosives Palletization/Packaging Label

NOTES

1. The default unit for measurement of DI "2Q" is assumed to be US pounds; if otherwise, a DI "3Q" value must also be encoded. Decimal values are allowed in the 2D (PDF417/Data Matrix) bar code's quantity fields and, if encoded, the total weight field in the 2D (PDF417/Data Matrix) bar code should be rounded to the next whole number. Human-readable information for the total weight must be rounded to the next whole number.
2. The legacy ammo/explosives label used DI "7Q" for the cube element using meta data of n..9+an2 where an2 is an ANSI ASC X12.3 Data Element 355 (Unit or Basis for Measurement) code referenced in NOTE 3 below.

3. Ammunition/explosives quantities must be encoded with a two-character ANSI ASC X12.3 Data Element 355 (Unit or Basis for Measurement) code following the numeric value, as applicable. Metric data values may also be used. The ANSI ASC X12.3 data elements selected for use are: PC=piece, ST=set, BX=box, CN=can, DR=drum, KT=kit, PL=pallet/unit load, CH=container, RL=roll, EA=each, LB=pound, FT=foot, CF=cubic feet, KG=kilograms, CM=centimeter, CC=cubic centimeter, MR=meter, CR=cubic meter. Decimal values are allowed in the 2D (PDF417/Data Matrix) bar code's quantity fields and, if encoded, the total cube field in the 2D (PDF417/Data Matrix) bar code should be rounded to the next whole number. Human readable information for the total cube must be rounded to the next whole number.
4. The legacy Ammunition and Explosives Palletization/Packaging Label used a different meta data format for DI "10P". The legacy label used DI "10PU+an..4" to encode the Title 49 CFR, Part 172.101 United Nations (UN) HAZMAT identification numbers.
5. The Quantity (unit of measure) element was designated for use by the Army Joint Munitions Command, Joint Ordnance Commanders Group, AIT Steering Group published Joint Ammo Package Label Specification (JAPLS) as amended by this standard. The Quantity (unit of measure) is a derived value of the MILSTRIP Quantity (unit of issue) using the defined quantitative expression for conversion (see UM and UI definitions).
6. DI "25S" is provided for use as an optional element to accommodate IUID marking when the requirement is called out in a contract or policy documents for the respective ammunition or explosive. The 2D (PDF417/Data Matrix) bar code may contain a mix of DIs "S" and "25S" in the serial number level data. See A.2.5 and the examples in [Figure A-8](#) for the Format 06 data structure used to associate a serial number with a UII, as applicable.
7. Mandatory and optional data fields and data identifiers listed in [Figure A-9](#) are applicable to both 2D (PDF417 and Data Matrix) bar codes.

AI	Data Content	DI
00	Serial Shipping Container Code (SSCC)	J, 1J, 2J, 3J, 4J, 8S
01	Global Trade Item Number (GTIN) (f.k.a. SCC-14)	8P
02	GTIN of trade items contained in a logistic unit (Must be used with AI 37)	n/e
10	Batch or Lot Number	1T
11 (*)	Production Date (YYMMDD)	5D...405
12 (*)	Due Date (YYMMDD)	5D...013
13 (*)	Packaging Date (YYMMDD)	n/e
15 (*)	Best Before Date (YYMMDD) (f.k.a. Best Before/Quality)	n/e
16 (**)	Sell By Date (YYMMDD)	
17 (*)	Expiration Date (YYMMDD) (f.k.a. Use By/Safety)	5D...036
20	Variant Number	n/e
21	Serial Number	S
240	Additional Item Identification	30P
241	Customer Part Number	P
242	Made-to-Order Variation Number	n/e
243	Packaging Component Number	n/e
250	Secondary Serial Number	30S
251	Reference to Source Entity	n/e
253	Global Document Type Identifier	n/e
254	GLN Extension component	n/e
255	Global Coupon Number	n/e
30	Count of Items (Variable Measure Trade Item)	Q
310 (**)	Net Weight, Kilograms	7Q...58
311 (**)	Length or 1 st Dimension Trade, Meters	7Q...MR
312 (**)	Width, Diameter, or 2 nd Dimension, Trade, Meters	7Q...MR
313 (**)	Depth, Thickness, Height or 3 rd Dimension, Trade, Meters	7Q...MR
314 (**)	Area, Trade, Square Meters	7Q...SM
315 (**)	Net Volume, Liters	7Q...LT
316 (**)	Net Volume, Cubic Meters	7Q...CR
320 (**)	Net Weight, Pounds	7Q...PN
321 (**)	Length or 1 st Dimension, Trade, Inches	7Q...ED
322 (**)	Length or 1 st Dimension, Trade, Feet	7Q...EZ
323 (**)	Length or 1 st Dimension, Trade, Yards	7Q...YD
324 (**)	Width, Diameter, or 2 nd Dimension, Trade, Inches	7Q...ED
325 (**)	Width, Diameter, or 2 nd Dimension, Trade, Feet	7Q...EZ
326 (**)	Width, Diameter, or 2 nd Dimension, Trade, Yards	7Q...YD
327 (**)	Depth, Thickness, Height or 3 rd Dimension, Trade, Inches	7Q...ED
328 (**)	Depth, Thickness, Height or 3 rd Dimension, Trade, Feet	7Q...EZ
329 (**)	Depth, Thickness, Height or 3 rd Dimension, Trade, Yards	7Q...YD
330 (**)	Logistic Weight, Kilograms	7Q...GT

Figure A-10 (Sheet 1 of 4) Mapping GS1 AIs to ANSI MH10.8.2 DIs (Extracted from ANSI MH10.8.2)

AI	Data Content	DI
331 (**)	Length or 1 st Dimension, Meters Logistics	7Q...MR
332 (**)	Width, Diameter, or 2 nd Dimension, Meters Logistics	7Q...MR
333 (**)	Depth, Thickness, Height or 3 rd Dimension, Meters, Logistics	7Q...MR
334 (**)	Area, Square Meters Logistics	7Q...SM
335 (**)	Logistic Volume, Liters	7Q...LT
336 (**)	Logistic Volume, Cubic Meters	7Q...CO
337 (**)	Kilograms per Square Meter	7Q...KM
340 (**)	Logistic Weight, Pounds	7Q...PG
341 (**)	Length or 1 st Dimension, Inches Logistics	7Q...ED
342 (**)	Length or 1 st Dimension, Feet Logistics	7Q...EZ
343 (**)	Length or 1 st Dimension, Yards Logistics	7Q...GY
344 (**)	Width, Diameter, or 2 nd Dimension, Inches Logistics	7Q...ED
345 (**)	Width, Diameter, or 2 nd Dimension, Feet Logistics	7Q...EZ
346 (**)	Width, Diameter, or 2 nd Dimension, Yards Logistics	7Q...GY
347 (**)	Depth, Thickness, Height or 3 rd Dimension, Inches, Logistics	7Q...ED
348 (**)	Depth, Thickness, Height or 3 rd Dimension, Feet, Logistics	7Q...EZ
349 (**)	Depth, Thickness, Height or 3 rd Dimension, Yards, Logistics	7Q...GY
350 (**)	Area, Trade, Square Inches	7Q...SI
351 (**)	Area, Trade, Square Feet	7Q...SF
352 (**)	Area, Trade, Square Yards	7Q...SY
353 (**)	Area, Square Inches, Logistics	7Q...SI
354 (**)	Area, Square Feet, Logistics	7Q...SF
355 (**)	Area, Square Yards, Logistics	7Q...SY
356 (**)	Net Weight, Trade, Troy Ounces	7Q...TO
357 (**)	Net Volume, Trade, Ounces (U.S.)	7Q...OZ
360 (**)	Net Volume, Trade, Quarts	7Q...QT
361 (**)	Net Volume, Trade, Gallons (U.S.)	7Q...GA
362 (**)	Logistic Volume, Quarts	7Q...QT
363 (**)	Logistic Volume, Gallons (U.S.)	7Q...GN
364 (**)	Net Volume, Trade, Cubic Inches	7Q...CI
365 (**)	Net Volume, Trade, Cubic Feet	7Q...CF
366 (**)	Net Volume, Trade, Cubic Yards	7Q...CY
367 (**)	Logistic Volume, Cubic Inches	7Q...CI
368 (**)	Logistic Volume, Cubic Feet	7Q...CF
369 (**)	Logistic Volume, Cubic Yards	7Q...CY
37	Count of Trade Items Contained in a Logistics Unit (For Use with AI 02 Only)	n/e
390 (**)	Applicable Amount Payable – local currency	n/e
391 (**)	Applicable Amount Payable – with ISO currency code	n/e
392 (**)	Applicable Amount Payable Variable Measure Trade Item – local currency	n/e

Figure A-10 (Sheet 2 of 4) Mapping GS1 AIs to ANSI MH10.8.2 DIs (Extracted from ANSI MH10.8.2)

AI	Data Content	DI
393 (**)	Applicable Amount Payable for a Variable Measure Trade Item – with ISO currency code	n/e
400	Customer's Purchase Order Number	K
401	Global Identification Number of Consignment	n/e
402	Global Shipment Identification Number	2K
403	Routing Code	n/e
410	"Ship To" (Deliver To) - GS1 Global Location Number	2L/12L
411	"Bill To" (Invoice To) - GS1 Global Location Number	n/e
412	"Purchased From" - GS1 Global Location Number	n/e
413	"Ship For - Deliver For - Forward To" GS1 Global Location Number	5L/15L
414	Identification of a Physical Location, GS1 Global Location Number	n/e
415	GS1 Global Location Number of the Invoicing Party	n/e
420	Ship To (Deliver To) Postal Code Within a Single Postal Authority	52L
421	Ship To (Deliver To) Postal Code With 3-digit ISO Country Code Prefix	55L
422	Country of Origin of a Trade Item	4L
423	Country of Initial Processing	n/e
424	Country of Processing	n/e
425	Country of Disassembly	n/e
426	Country covering full process chain	n/e
427	Country subdivision of origin	n/e
7001	NATO Stock Number (NSN)	N
7002	UN/ECE Meat Carcasses and Cuts Classification	n/e
7003	Expiration Date and Time (YYMMDDHHMM)	n/e
7004	Active Potency	n/e
7005	Catch Area	n/e
7006	First Freeze Date	n/e
7007	Harvest Date	n/e
7008	Species for Fishery Purposes	n/e
7009	Fishing Gear Type	n/e
7010	Production Method	n/e
703(s)	Approval number of processor with ISO country code	n/e
710	National Healthcare Reimbursement Number (NHRN) – Germany PZN	n/e
711	National Healthcare Reimbursement Number (NHRN) – France CIP	n/e
712	National Healthcare Reimbursement Number (NHRN) – Spain CN	n/e
713	National Healthcare Reimbursement Number (NHRN) – Brasil DRN	n/e
nnn	National Healthcare Reimbursement Number (NHRN) – Country "A" NHRN	n/e
8001	Roll products – Width, Length, Core Diameter, Direction, & Splices	n/e
8002	Cellular Mobile Telephone Identifier	22S
8003	Global Returnable Asset Identifier	25B
8004	Global Individual Asset Identifier	1B, 5B
8005	Price Per Unit of Measure	n/e

Figure A-10 (Sheet 3 of 4) Mapping GS1 AIs to ANSI MH10.8.2 DIs (Extracted from ANSI MH10.8.2)

AI	Data Content	DI
8006	Identification of the Component of a Trade Item	19P
8007	International Bank Account Number	n/e
8008	Date and Time of Production	n/e
8010	Component/Part Identifier Serial Number (CPID SERIAL)	n/e
8011	Global Service Relation Number to identify the relationship between an organisation offering services and the provider of services	n/e
8017	Global Service Relation Number to identify the relationship between an organization offering services and the provider of services	n/e
8018	Global Service Relation Number to identify the relationship between an organization offering services and the recipient of services	n/e
8019	Service Relation Instance Number (SRIN)	n/e
8020	Payment Slip Reference Number	n/e
8110	Coupon Code Identification for Use in North America	n/e
8200	Extended Packaging URL	33L
90	Information Mutually Agreed Between Trading Partners	Y, 3K, 6K, 12K, 1Z, 2Z, 4Z
91 to 99	Company Internal Information	
(*): To indicate only year and month, DD can be filled with "00" (**): Plus one digit for decimal point indication (+): The definition of 400 has been modified to allow order, release, and line numbers, at the discretion of the issuer		
Data Value Representation:		
a: alphabetic characters (chars) n: numeric chars an: alphanumeric char n3: 3 numeric chars, fixed length an3: alpha-numeric chars, fixed length		

Figure A-10 (Sheet 4 of 4) Mapping GS1 AIs to ANSI MH10.8.2 DIs (Extracted from ANSI MH10.8.2)

ANNEX B

FIGURES

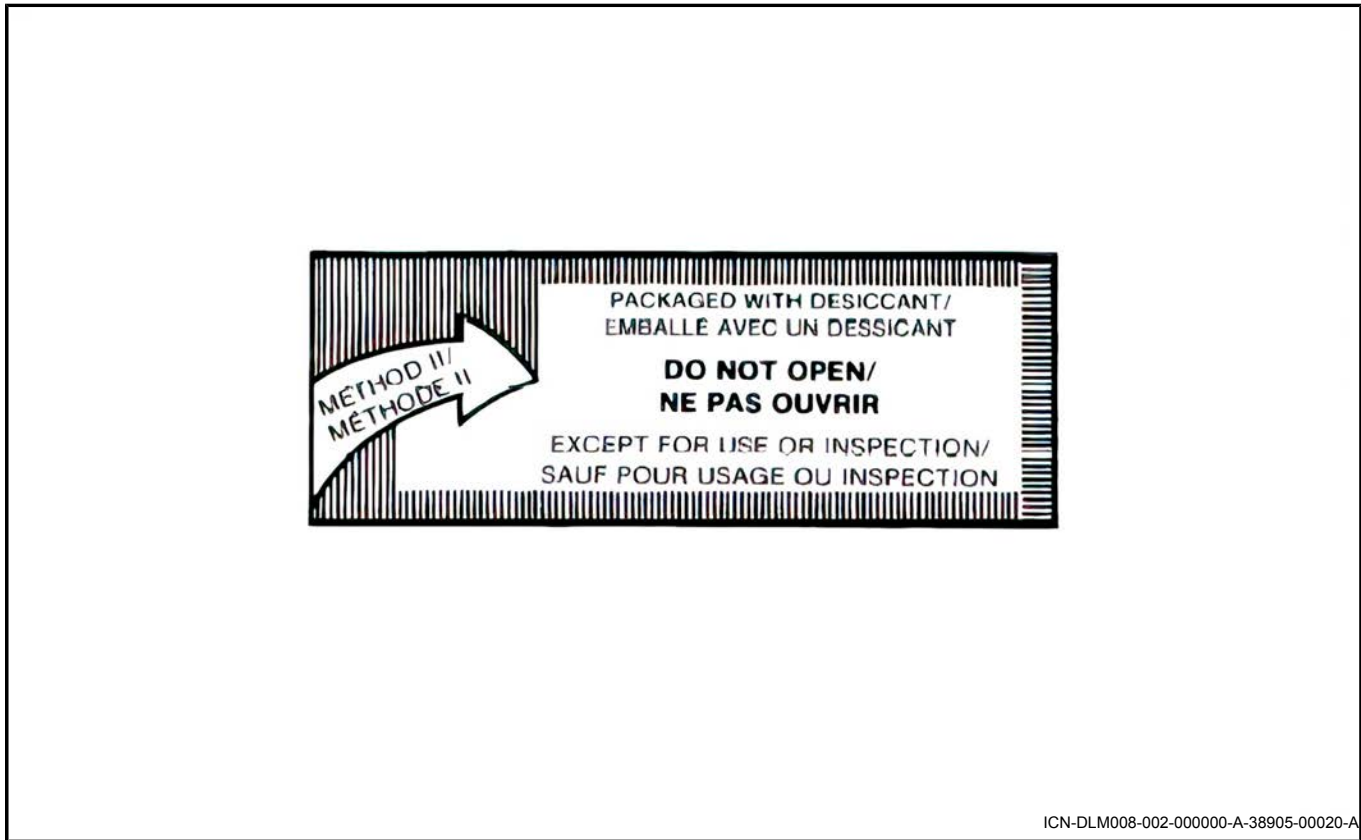
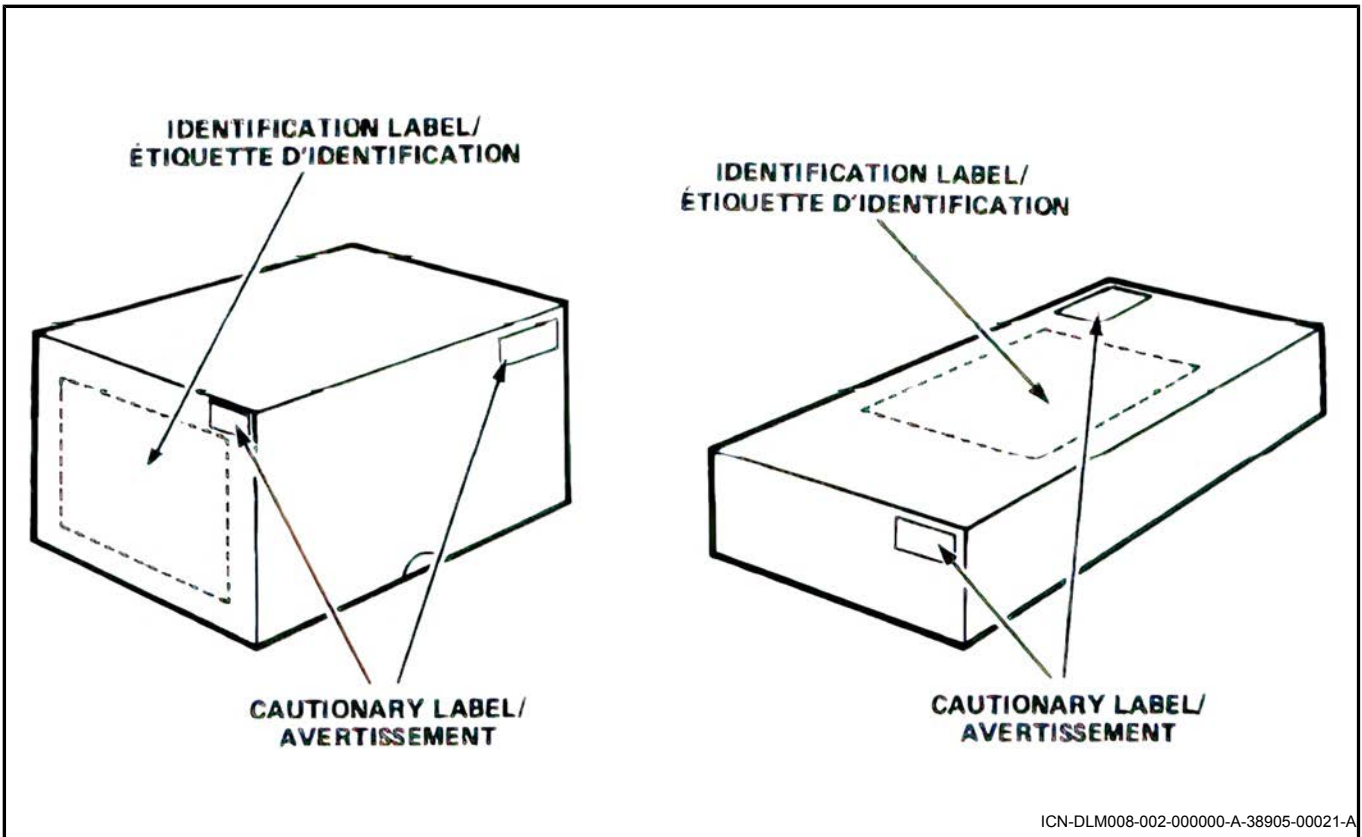
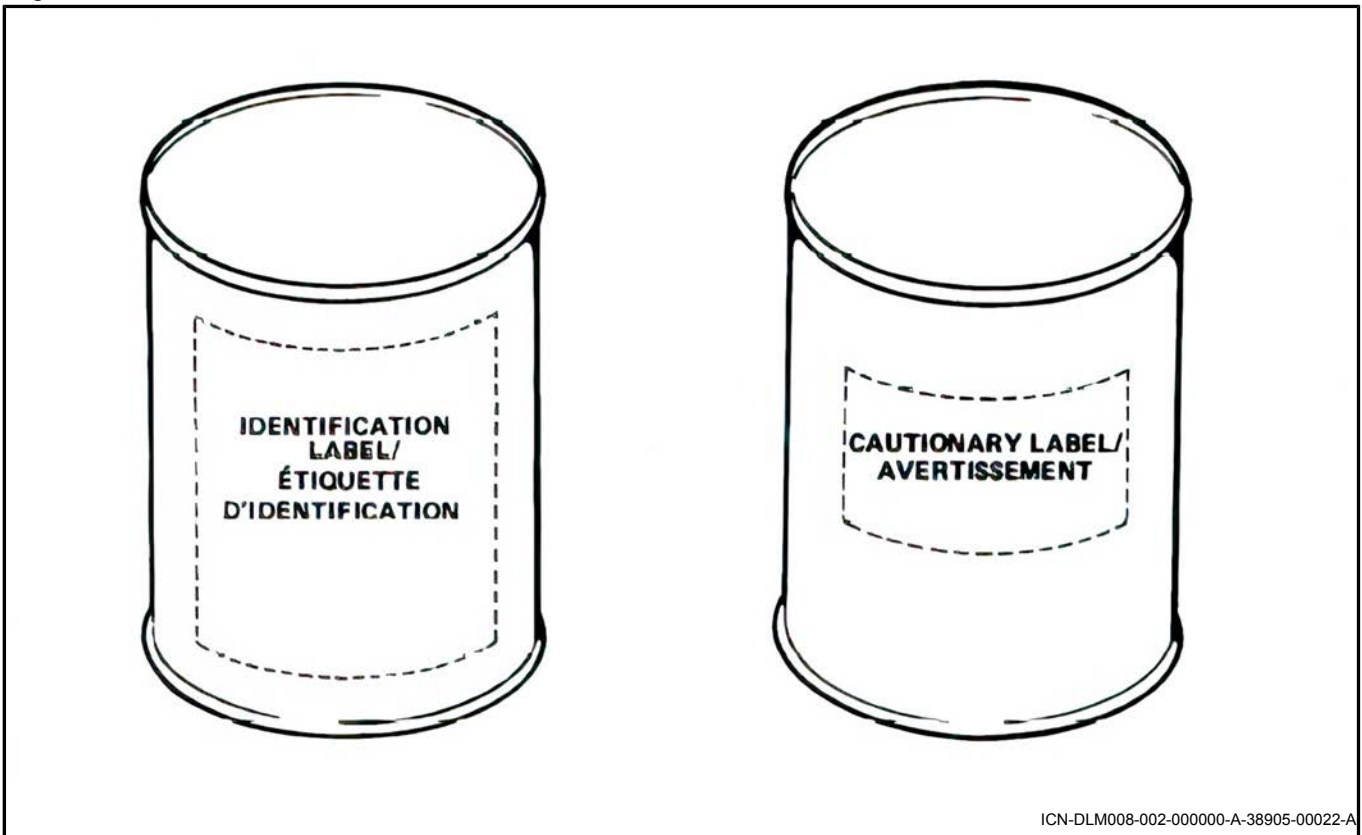


Figure B-1 Desiccant Label



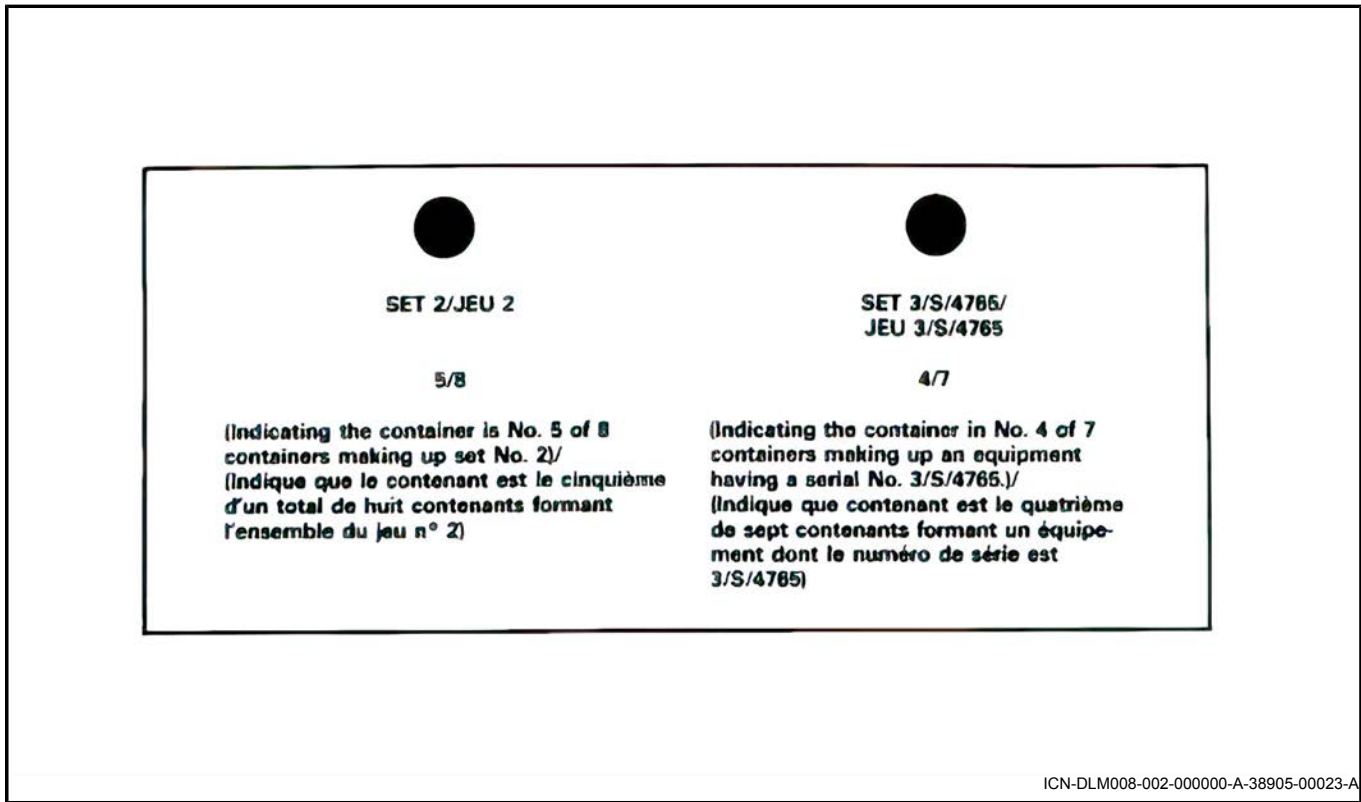
ICN-DLM008-002-000000-A-38905-00021-A

Figure B-2 Interior Cartons



ICN-DLM008-002-000000-A-38905-00022-A

Figure B-3 Cans (Interior Packs)



ICN-DLM008-002-000000-A-38905-00023-A

Figure B-4 Set or Assembly Markings

**FRAGILE
HANDLE WITH CARE
FRAGILE
MANIPULEZ AVEC SOIN**



TO INDICATE THAT THE CONTENTS OF THE SHIPPING CONTAINER ARE FRAGILE AND THAT IT HAS TO BE HANDLED WITH CARE. SYMBOL TO BE LOCATED NEAR THE UPPER LEFT HAND CORNER OF THE SHIPPING CONTAINER.

SERT À INDIQUER QUE LE CONTENANT RENFERME DES MARCHANDISES FRAGILES ET QU'IL FAUT, PAR CONSÉQUENT, LE MANIPULER AVEC SOIN. LE SYMBOLE DOIT ÊTRE PLACÉ DANS LE COIN SUPÉRIEUR GAUCHE DU CONTENANT.

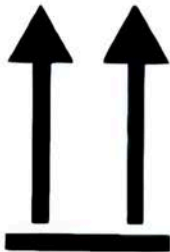
**USE NO HOOKS
MANIEZ
SANS CRAMpons**



TO INDICATE THAT HOOKS ARE PROHIBITED FOR LIFTING THE SHIPPING CONTAINER.

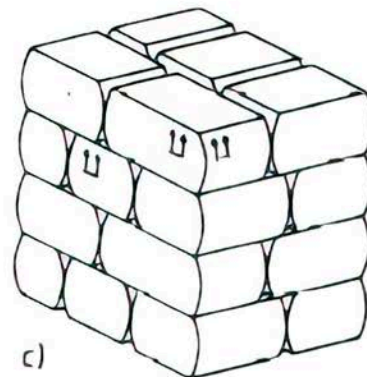
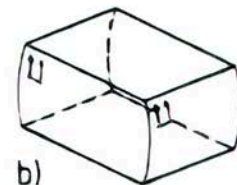
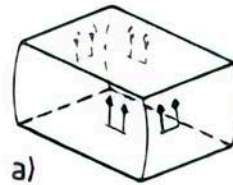
SERT À INDIQUER QU'IL NE FAUT PAS SOULEVER LE CONTENANT À L'AIDE DE CRAMpons.

**THIS WAY UP
CETTE FACE
EN HAUT**



TO INDICATE THE CORRECT UPRIGHT POSITION OF THE SHIPPING CONTAINER.

SERT À INDIQUER QUE, DANS LA POSITION INDICUÉE PAR LES FLÈCHES, LE CONTENANT EST À L'ENDROIT.

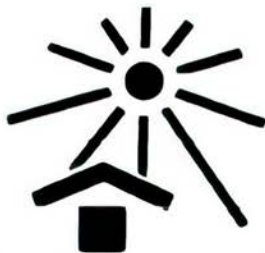


HEAVY END



Figure B-5 (Sheet 1 of 4) Handling and Cautionary Markings

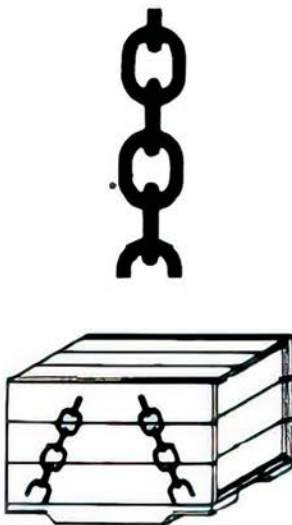
**KEEP AWAY
FROM HEAT
ÉVITER SOURCE
DE CHALEUR**



TO INDICATE THAT THE SHIPPING CONTAINER SHALL BE KEPT AWAY FROM HEAT.

SERT À INDIQUER QU'IL FAUT SE GARDER DE DÉPOSER LE CONTENANT PRÈS D'UNE SOURCE DE CHALEUR.

**SLING HERE
ATTACHER ICI**



TO INDICATE WHERE THE SLINGS ARE TO BE PLACED FOR LIFTING THE SHIPPING CONTAINER. SYMBOL TO BE SHOWN ON AT LEAST TWO OPPOSITE FACES.

SERT À INDIQUER OÙ PLACER LES ATTACHES POUR SOULEVER LE CONTENANT. LE SYMBOLE DOIT FIGURER SUR AU MOINS DEUX FACES OPPOSÉES DU CONTENANT.

**KEEP DRY
GARDER AU SEC**

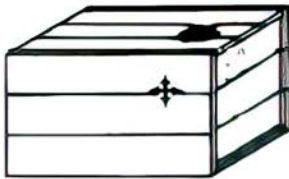


TO INDICATE THAT THE SHIPPING CONTAINER SHALL BE KEPT IN A DRY ENVIRONMENT.

SERT À INDIQUER QUE LE CONTENANT D'EXPÉDITION DOIT ÊTRE GARDÉ DANS UN ENDROIT SEC.

Figure B-5 (Sheet 2 of 4) Handling and Cautionary Markings

**CENTRE OF GRAVITY
CENTRE DE GRAVITÉ**



TO INDICATE THE CENTRE OF GRAVITY OF THE SHIPPING CONTAINER. THE SYMBOL TO BE PLACED ON ALL NORMALLY UPRIGHT SIDES, AND SHALL BE APPLIED IN THE CORRECT POSITION IN ORDER TO ENSURE THE MEANING IS UNDERSTOOD. REQUIRED ON ALL SHIPPING CONTAINERS OVER 3.0M OR ANY CONTAINER WHICH IS UNBALANCED.

SERT À INDIQUER LE CENTRE DE GRAVITÉ DU CONTENANT D'EXPÉDITION. LE SYMBOLE DOIT ÊTRE APPOSÉ SUR TOUS LES CÔTÉS DU CONTENANT, EN POSITION DEBOUT NORMALE, ET AU BON ENDROIT SUR CHAQUE FACE AFIN QUE LE SYMBOLE SOIT BIEN COMPRIS. INDIQUER CE SYMBOLE SUR TOUS LES CONTENANTS DE PLUS DE 3.0 M OU SUR TOUS LES CONTENANTS QUI NE SONT PAS ÉQUILIBRÉS.

**DO NOT ROLL
NE PAS ROULER**



TO INDICATE THAT THE SHIPPING CONTAINER SHALL NOT BE ROLLED.

SERT À INDIQUER QUE LE CONTENANT NE DOIT PAS ÊTRE ROULÉ.

**NO HAND TRUCK HERE
PAS DE CHARIOT
DE CE CÔTÉ**



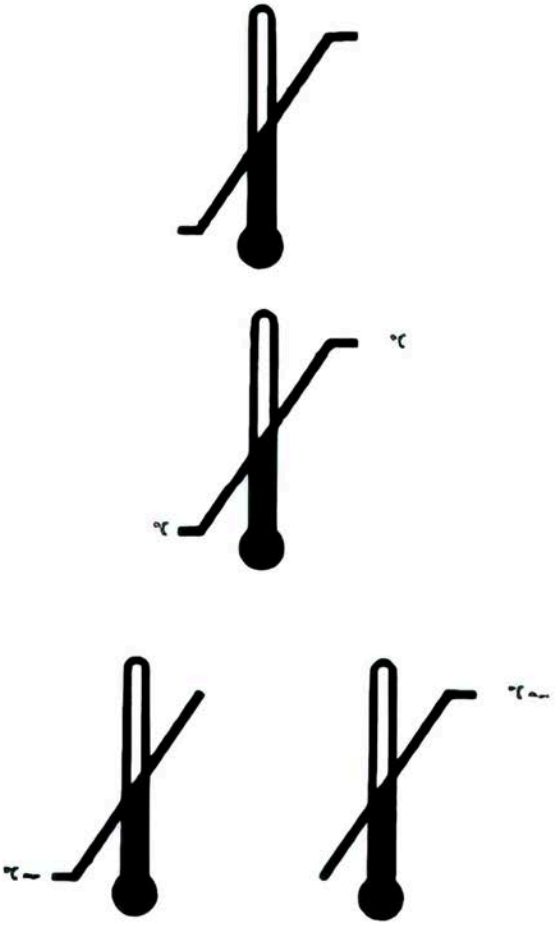


TO INDICATE WHERE HAND TRUCKS OR DOLLIES SHALL NOT BE PLACED WHEN HANDLING THE SHIPPING CONTAINER.

SERT À INDIQUER À QUEL ENDROIT NE PAS PLACER LE DIABLE OU LE CHARIOT POUR DÉPLACER LE CONTENANT.

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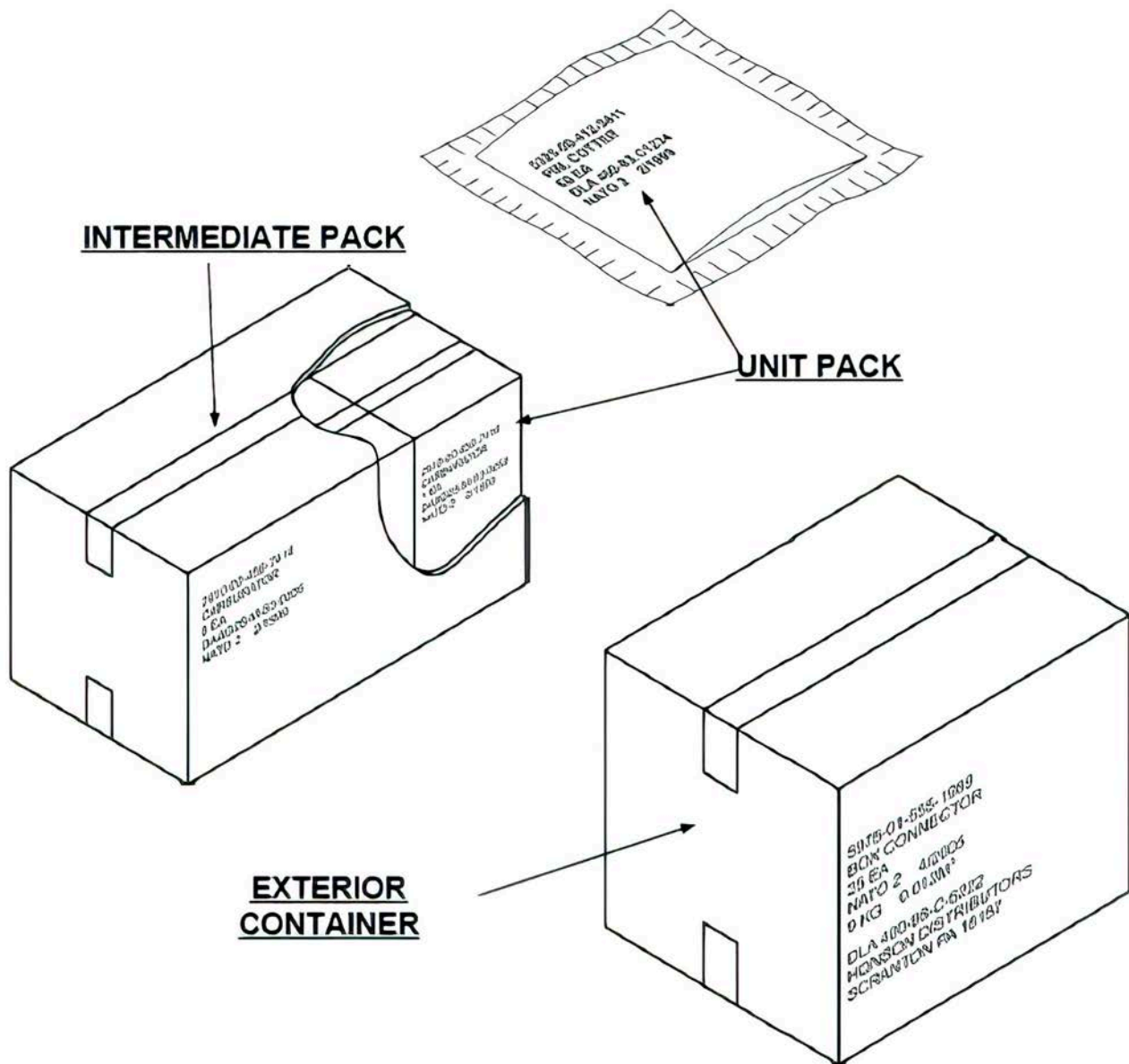
Figure B-5 (Sheet 3 of 4) Handling and Cautionary Markings

<p>STACKING LIMITATION LIMITE D'EMPILAGE</p> 	<p>TO INDICATE THE LIMITED STACKING POSSIBILITIES OF THE SHIPPING CONTAINERS.</p> <p>SERT À INDIQUER LA LIMITE D'EMPILAGE QUE LES CONTENANTS PEUVENT SUPPORTER.</p>
<p>CLAMP HERE METTRE SERRES ICI</p> 	<p>TO INDICATE WHERE CLAMPS SHALL BE PLACED FOR HANDLING THE SHIPPING CONTAINER.</p> <p>SERT À INDIQUER OÙ METTRE LES SERRES POUR MANIPULER LE CONTENANT.</p>
<p>TEMPERATURE LIMITATIONS LIMITES DE TEMPÉRATURE</p> 	<p>TO INDICATE THE TEMPERATURE LIMITATIONS WITHIN WHICH THE SHIPPING CONTAINER SHALL BE KEPT AND HANDLED.</p> <p>SERT À INDIQUER LES LIMITES DE TEMPÉRATURE À OBSERVER POUR L'ENTREPOSAGE ET LE TRANSPORT DU CONTENANT.</p>

ICN-DLM008-002-000000-A-38905-00027-A

Figure B-5 (Sheet 4 of 4) Handling and Cautionary Markings

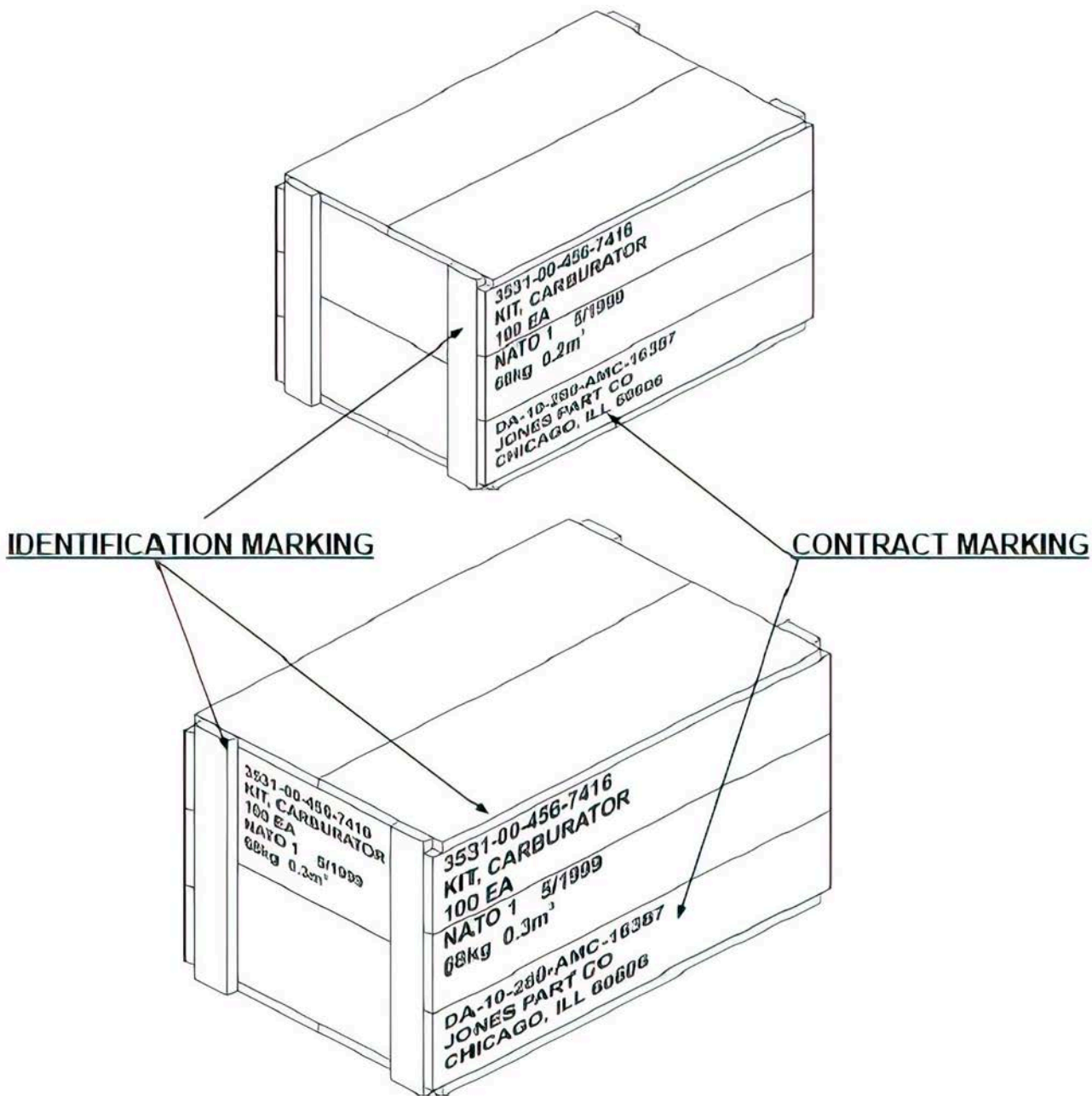
LOCATIONS OF MARKING FORMAT



ICN-DLM008-002-000000-A-38905-00028-A

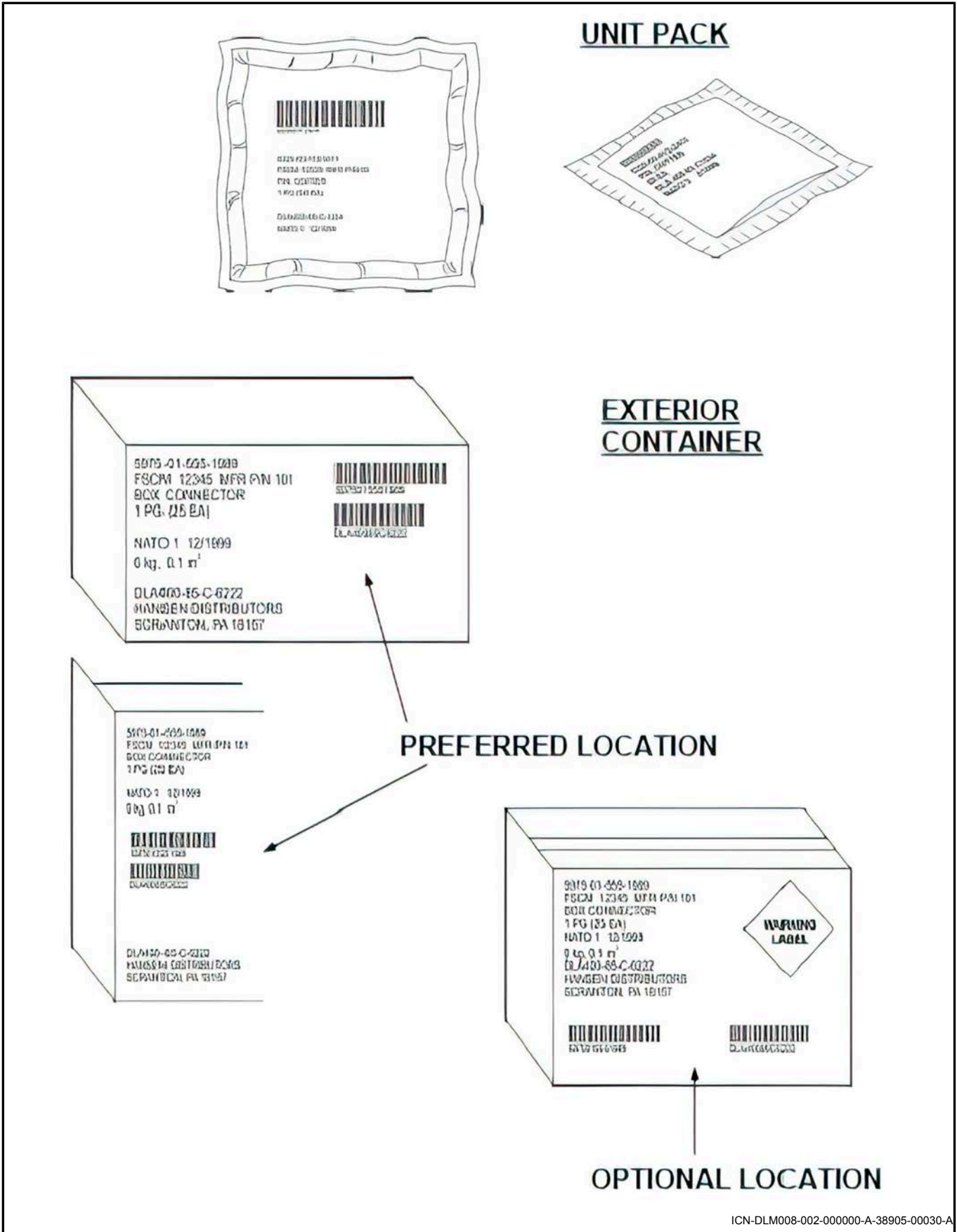
Figure B-6 (Sheet 1 of 2) Identification and Contract Data Markings

BASIC MARKINGS FOR A BOX UNDER 0.3 CUBIC METRES



ICN-DLM008-002-000000-A-38905-00029-A

Figure B-6 (Sheet 2 of 2) Identification and Contract Data Markings



ICN-DLM008-002-000000-A-38905-00030-A

Figure B-7 (Sheet 1 of 4) Bar Code Markings

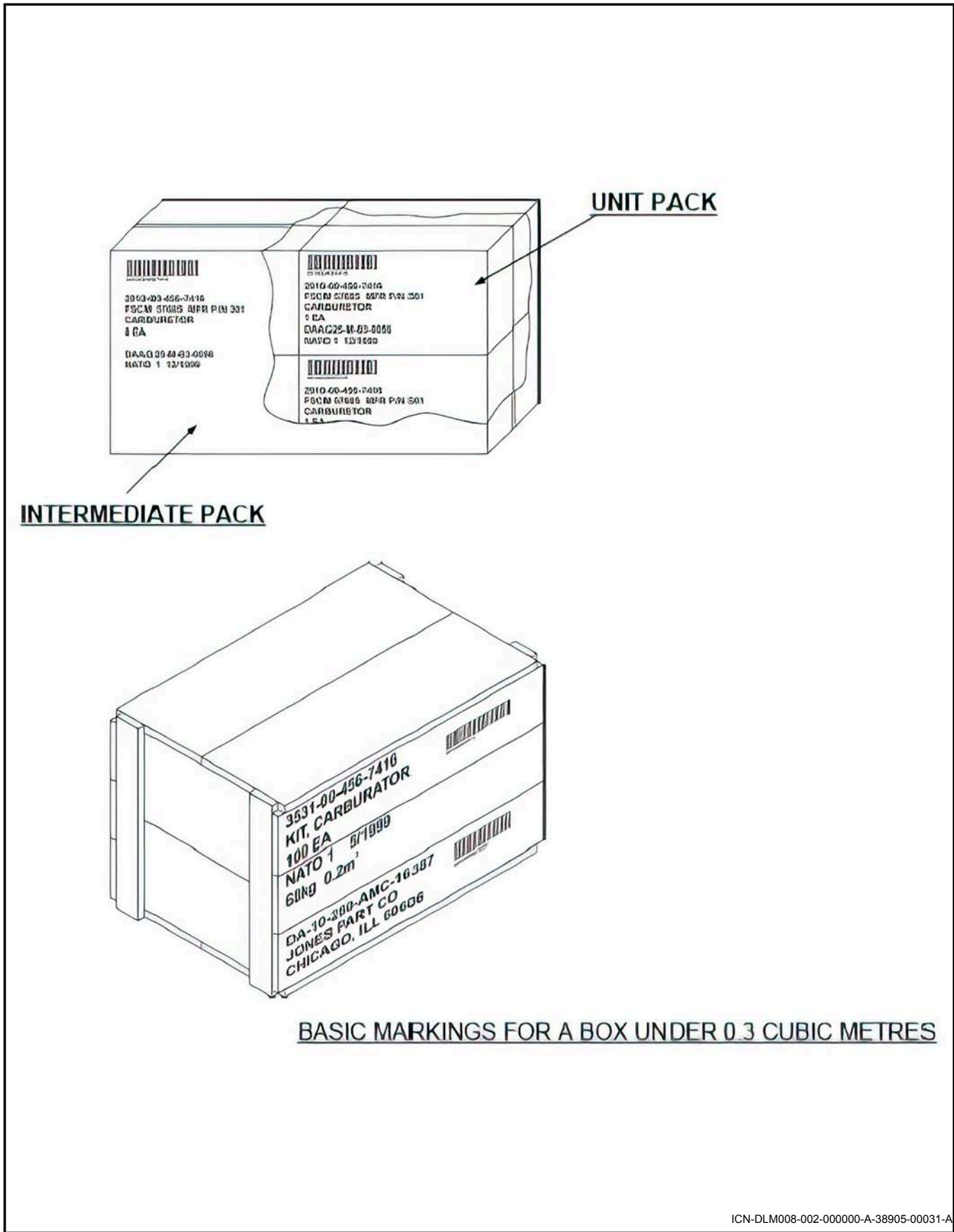
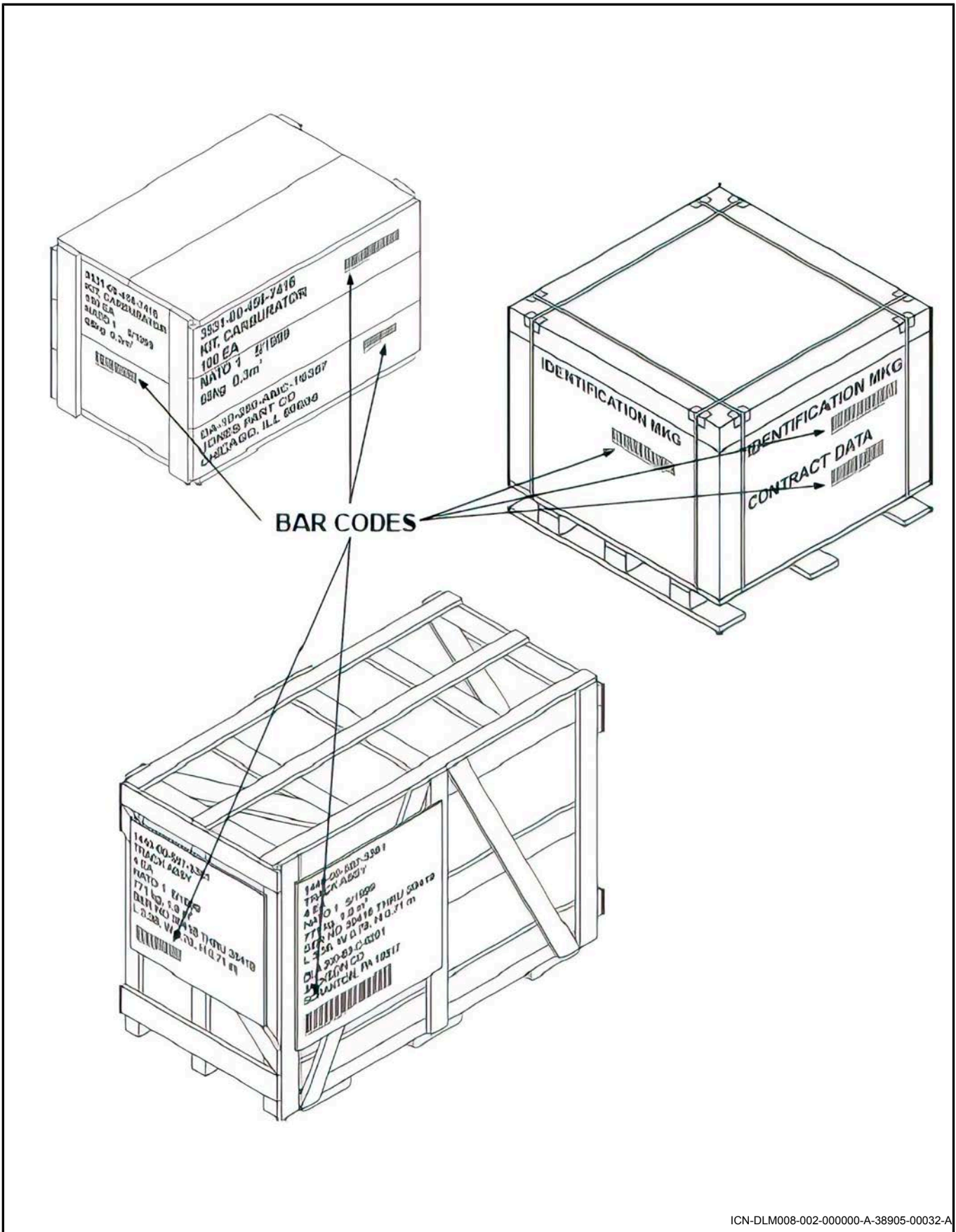
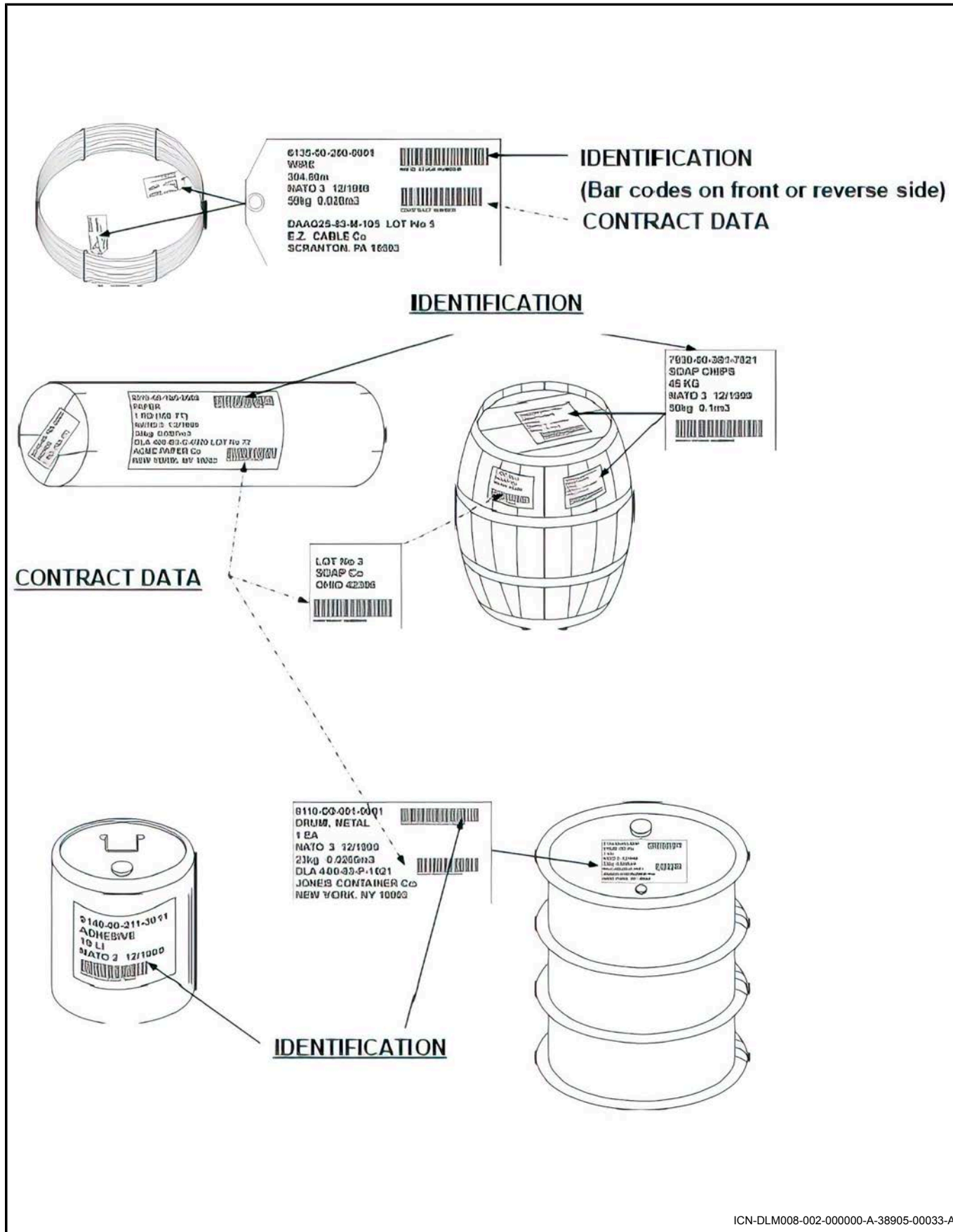


Figure B-7 (Sheet 2 of 4) Bar Code Markings



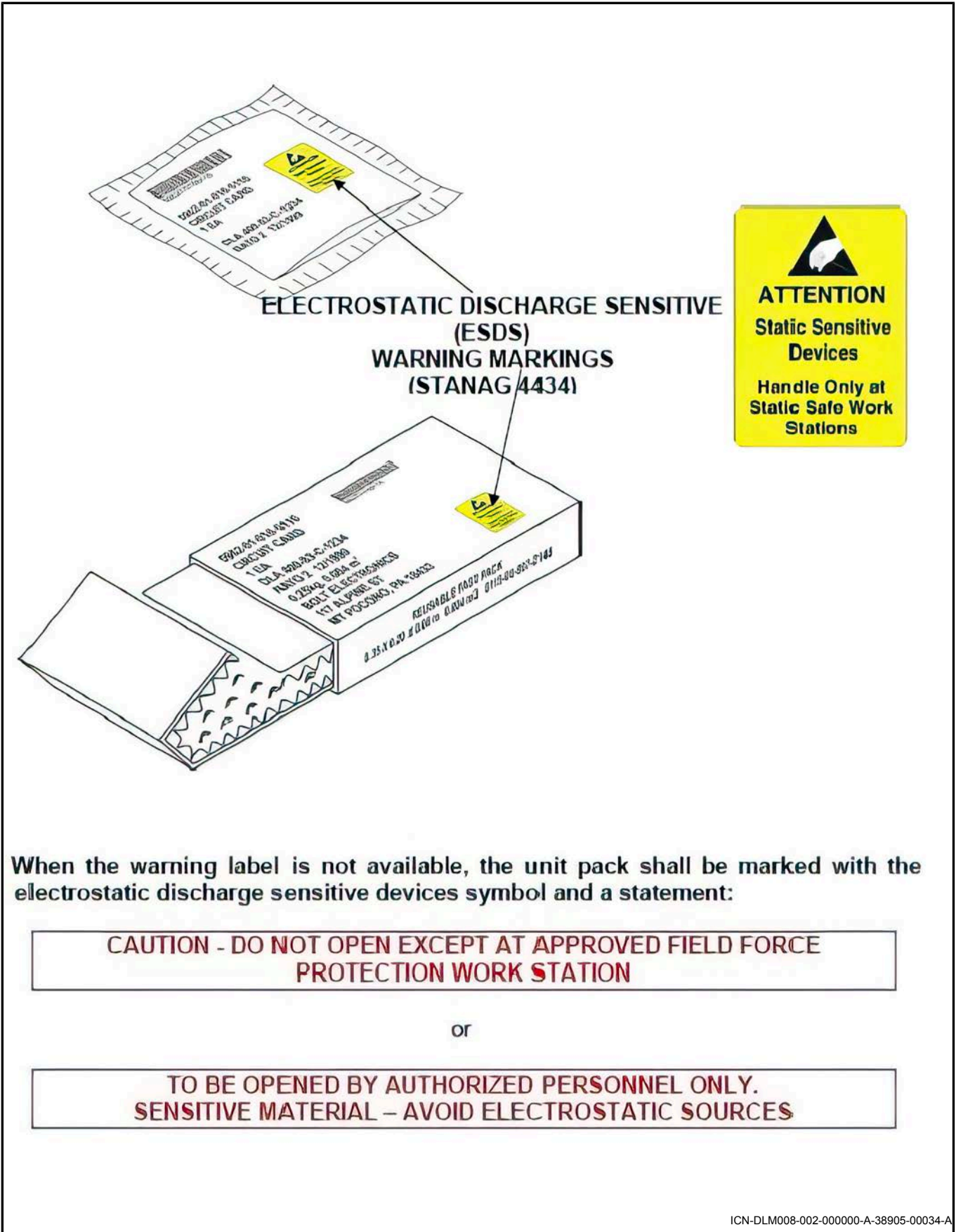
ICN-DLM008-002-000000-A-38905-00032-A

Figure B-7 (Sheet 3 of 4) Bar Code Markings



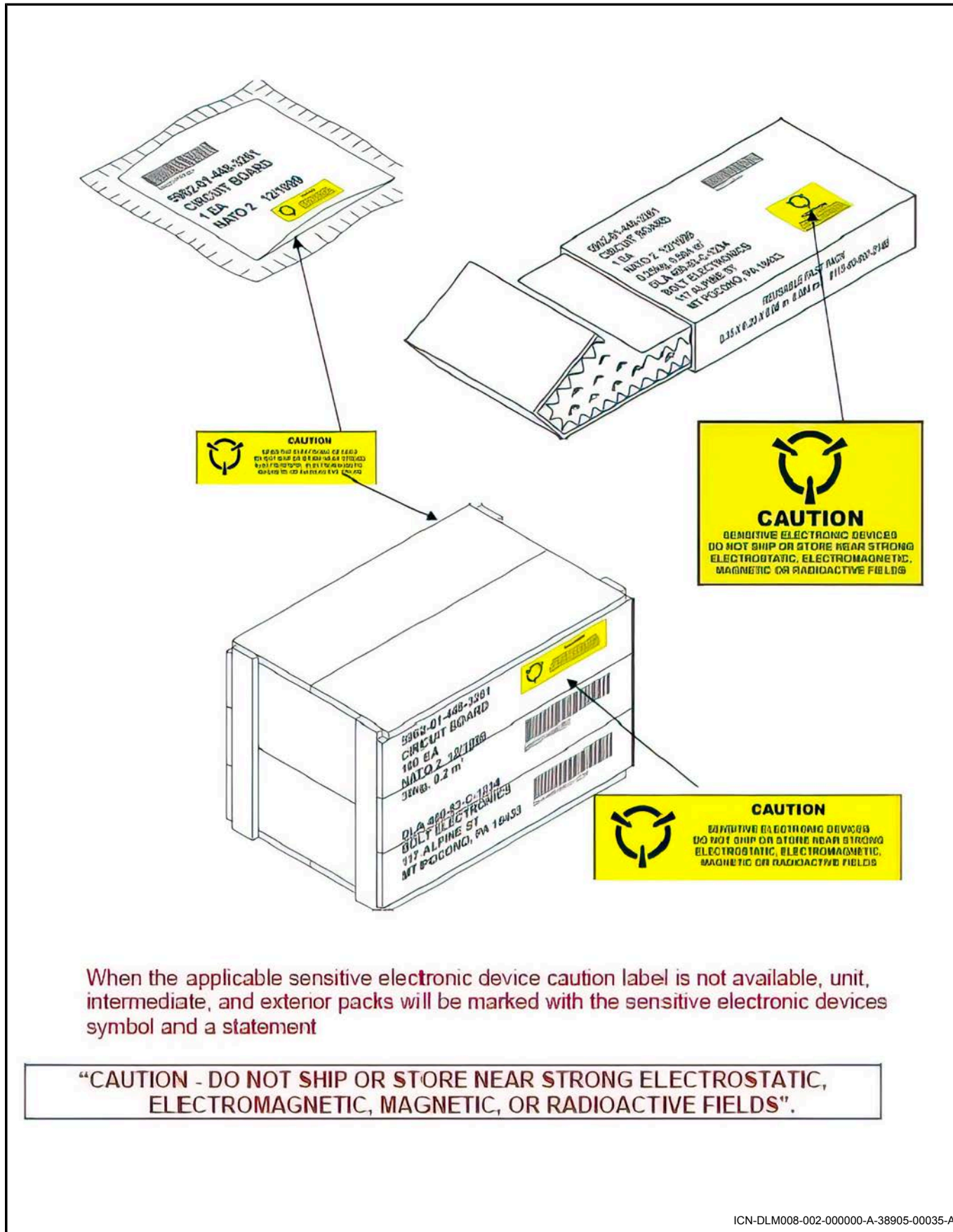
ICN-DLM008-002-000000-A-38905-00033-A

Figure B-7 (Sheet 4 of 4) Bar Code Markings



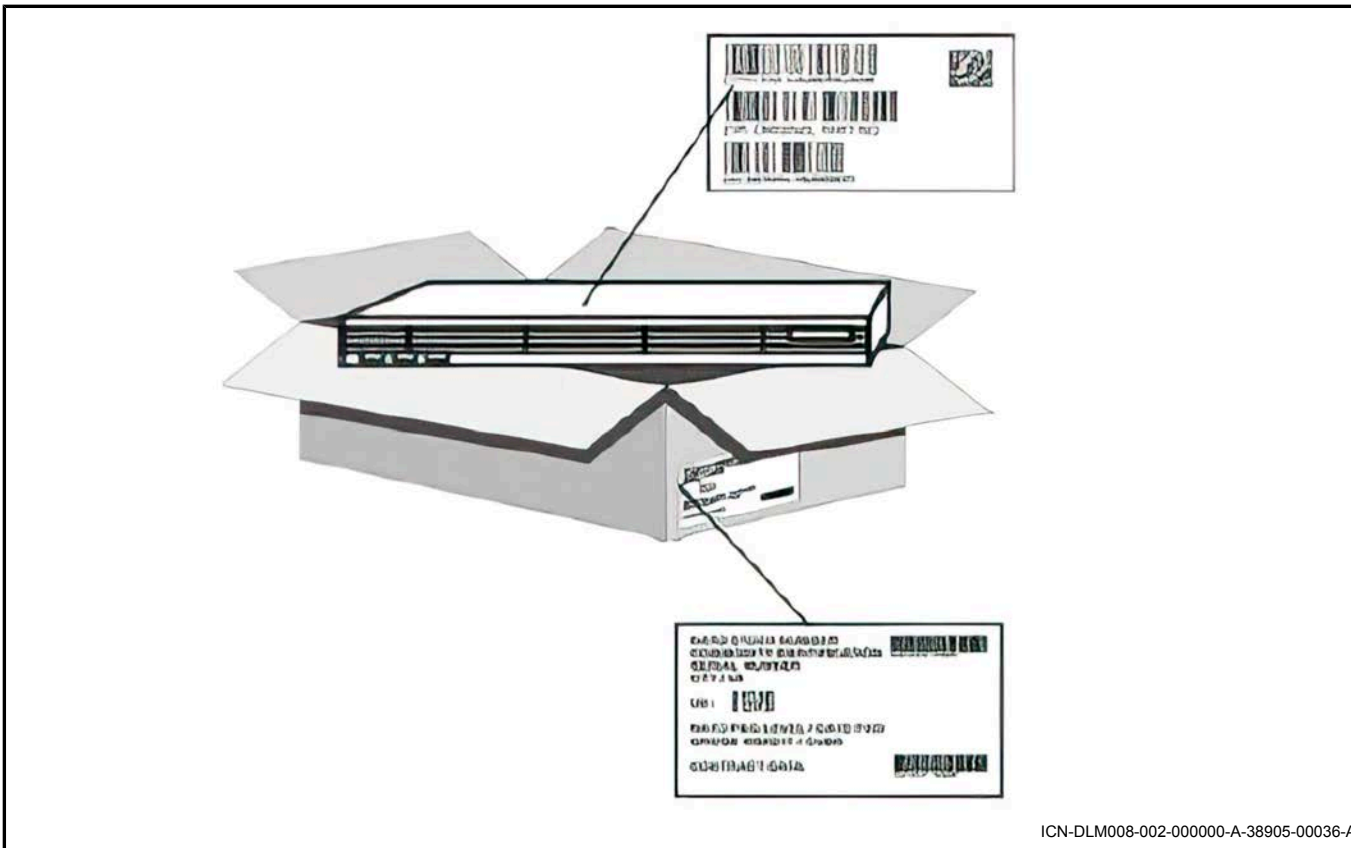
ICN-DLM008-002-000000-A-38905-00034-A

Figure B-8 Electrostatic Discharge Sensitive Devices Caution Labels



ICN-DLM008-002-000000-A-38905-00035-A

Figure B-9 Sensitive Electronic Devices Caution Labels



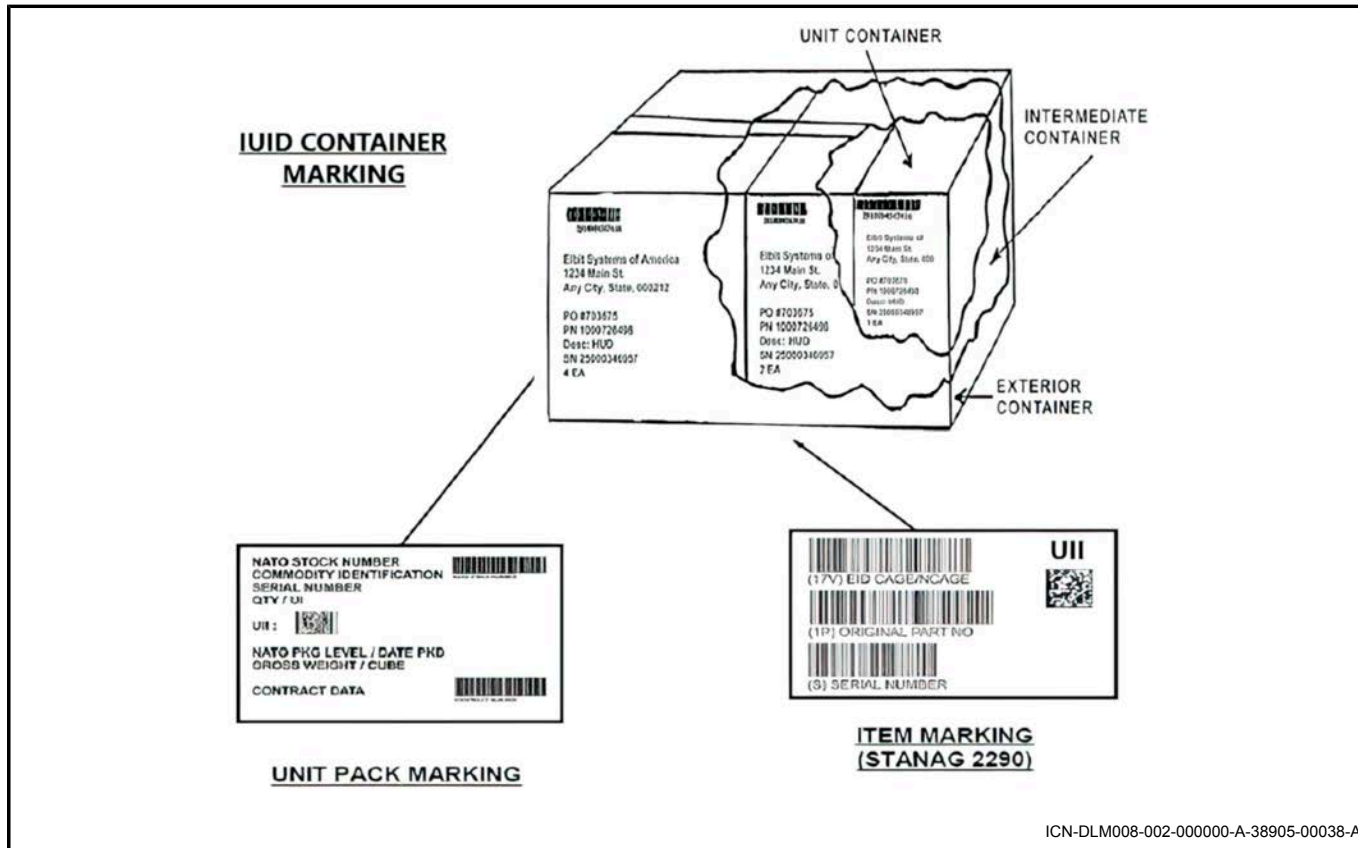
ICN-DLM008-002-000000-A-38905-00036-A

Figure B-10 (Sheet 1 of 2) Identification and Contract Data Markings for IUID Items Generic Container (e.g. Carton) and IUID Content



ICN-DLM008-002-000000-A-38905-00037-A

Figure B-10 (Sheet 2 of 2) Identification and Contract Data Markings for IUID Items Generic Container (e.g. Carton) and IUID Content





ICN-DLM008-002-000000-A-38905-00038-A

Figure B-11 Identification and Contract Data Markings for UID Items, UID Reusable Container and UID Content






ICN-DLM008-002-000000-A-38905-00039-A

Figure B-12 Minimum Format

Company Name		Contract #: W4216-789456	
Ship From		Ship to	
Weight	Cube	Priority	RDD
Length	Width	Height	D/G
Dangerous Goods/ Special Instructions			
Commercial Carrier Tracking#			
12 123 X56 03 1234 5679 			
SSCC: if applicable			
 <small>001 2345678901010</small>			

ICN-DLM008-002-000000-A-38905-00040-A

Figure B-13 Optional Format

Company Name		Contract #: W4216-789456	
Ship From		Ship to	
Weight	Cube	Priority	RDD
Length	Width	Height	DG
Dangerous Goods/ Special Instructions			
Commercial Carrier Tracking#			
1Z 123 X56 03 1234 5679			
			
SSCC: if applicable			
			
National Level Logistics Data			
			

ICN-DLM008-002-000000-A-38905-00041-A

Figure B-14 Full Optional Format

LIST OF ABBREVIATIONS

This section lists the authorized Abbreviations. The following terms for units of issue, quantitative and weights and measures units, cross-referenced to Codes in abbreviated format, are authorized for use. The codes must be utilized where the requirements for abbreviated markings are specified in this document. Miscellaneous marking and provincial abbreviations are also included. Abbreviations of items description not indicated herein may be permitted when approved by the inspection authority designated in the procurement document.

AB	Province of Alberta	FM	Fathom
AM	Ampoule	FRT	Freight
AOG	Aircraft on ground	FSN	Federal Stock Number
AT	Assortment	FT	Foot
AY	Assembly	GB	Gallon, Imperial
BA	Ball	GBL	Government Bill of Lading
BC	Province of British Columbia	GL	Gallon, US
BD	Bundle	GM	Gramme
BE	Bale	GN	Grain
BF	Board Feet	GP	Group
BG	Bag	GR	Gross
BK	Book	HD	Hundred
BL	Barrel	HI	Hundredweight, Imperial (112 lb)
B/L	Bill of Lading	HK	Hank
BM	Bushel, Imperial (2219.23 cu in)	HV	Hi Value
BO	Bolt	IN	Inch
BR	Bar	INV	Invoice
BX	BOX	JR	Jar
BT	Bottle	KG	Kilogram
CA	Cartridge	KM	Kilometre
CAT	Catalogue	KT	Kit
CB	Carboy	LB	Pound
CC	Cubic Centimetre	LCL	Less than carload
CD	Cubic Yard	LTL	Less than truckload
CE	Cone	LG	Length
CF	Cubic Foot	LI	Litre
CG	Centigramme	LT	Long Ton (2240 lb)
CI	Cubic Inch	MB	Province of Manitoba
CK	Cake	MC	Micrograms
CL	Coil	ME	Meal
CM	Centimetre	MFD	Manufactured
CN	Can	MG	Milligrams
CO	Container	MK	Mark
CY	Cylinder	ML	Millilitres
CZ	Cubic Metre	MM	Millimetres
DC	Decagrams	MR	Metre
DE	Decimetre	MX	Thousand
DG	Decigrams	NB	Province of New Brunswick
DIM	Dimensions	Net/WT	Net Weight
DL	Decilitre	NF	Province of Newfoundland
DR	Drum	NO	Number
DZ	Dozen	NS	Province of Nova Scotia
EA	Each	NSN	NATO Stock Number
ENG	Engine	NT	North West Territory
EXP	Express	OBL	Ocean Bill of Lading
FE/EF	Federal Encumbrance	ON	Province of Ontario

LIST OF ABBREVIATIONS (CONT)

OT	Outfit
OZ	Ounce
PC or QC	Province of Quebec
PD	Pad
PE	Province of Prince Edward Island
PG	Package
PI	Pint, Imperial
PM	Plate
PP	Parcel Post
PPD	Prepaid
PR	Pair
PT	Pint, US
PZ	Packet
VI	Phial (see Vial)
QI	Quart, Imperial
QT	Quart, US
RA	Ration
RM	Ream
RO	Roll
RL	Reel
SD	Skid
SE	Set
SF	Square Foot
SH	Sheet
SI	Square Inch
SK	Skein
SK	Province of Saskatchewan
SL	Spool
SO	Shot
SSC	Supply and Services Canada
ST	Short Ton
STN	Station
SY	Square Yard
SX	Stick
SP	Strip
TI	Tin
TN	Ton (2000 lb)
TM	Ton, Metric (2204.6 lb)
TO	Troy Ounce
TU	Tube
T/VVT	Tare Weight
URR	Urgent Repair Requirement
VI	Vial (see Phial)
YD	Yard
YT	Yukon Territory