

MILITARY MARKING FOR SHIPMENT AND STORAGE (MIL-STD-129P w/CHANGE #4)

Marking permits ready identification of military supplies and equipment for shipment and storage. Marking is required to assist our depot personnel sort shipments and pull stock to fill requisitions. Marking also aids our customers to identify items received. If an item has a discrepancy, it can be traced to the originator by the markings on the package even if the original paperwork is separated from the item. Identification markings assist Depot personnel to pinpoint discrepant items and keep stock inspections economical by narrowing inspection requests to a specific contract number.

Military Standard 129P, Standard Practice - Military Marking for Shipment and Storage, provides the requirements for the uniform marking of military supplies and equipment. This publication is approved for use by all Department and Agencies of the Department of Defense. MIL-STD-129P now has four Change Notices applicable to the standard.

- Change #1, published 15 January 2004, incorporated multiple label changes and **mandates bar coded Military Shipping Labels for all shipping containers to all destinations.**
- Change #2 of 10 February 2004 corrected some tables lost while converting to Change #1.
- Change #3 **added requirements for passive Radio Frequency Identification – RFID.**
- Change #4 of 19 September 2007 **added requirements for 2D (PDF417) symbols to be used to include concatenated Unique Item Identifiers (UIIs) to package marking.**

A. IDENTIFICATION MARKINGS

1. Unit Packs and Intermediate Container minimum markings.

The following is the required marking in the order listed:

- **National Stock Number (NSN).** The NSN will include spaces or dashes and any prefix or suffix shown in the contract or solicitation. If no NSN is assigned, then this line and the above bar code may be omitted.
- **CAGE Code.** The CAGE (Commercial and Government Entity) code of the company awarded the contract for the item.
- **Part Number (PN).** If a PN is shown in the contract, then only that PN shall be shown. The letters “PN” or “P/N” shall be shown in front of the PN. If the item has no PN or no PN is cited in the contract, then nothing is shown.
- **Item Description or Nomenclature.** The exact name and description of an item as it appears in the contract.
- **Quantity and Unit of Issue.** (5 EA, as an example) A nondefinitive unit of issue shall be accompanied by a quantitative expression such as “1 RO (100 FT).”

- **Contract Number and Lot Number.** Includes four-digit delivery order or call number, modification number, or lot number, if applicable. Dashes will be included, DAAB07-96-C-1234, as an example.
- **Military Preservation Method and Date of Unit Preservation.** Example: "M41- 4/04" - Use of the letter "M" in the first position indicates that the pack is a military preservation method; "41" is the method number; "4/04" indicates the date of preservation. Method of preservation code "ZZ" will be shown as "ZZ". If a military preservation method doesn't apply (commercial packaging), the method space will be left blank.
- **Serial Number.** When an item is assigned a serial number, that number shall be applied and preceded by the abbreviation "SER NO." Serial numbers assigned by the manufacturer solely for indicating the quantity produced shall not be shown. (Para. 4.4.2.2.)

2. Identification Linear (Code 39) Bar Code 2D (PDF417) markings for unit/intermediate containers:

- NSN and serial number (when assigned) for unit and intermediate packs
 - a. The NSN shall consist of the basic 13 characters – will not include the dashes, spaces, prefixes or suffixes
 - b. The serial number(s) will be preceded by the abbreviation "SER NO". When more than five serial-numbered items in an intermediate container, the requirements for bar code serial numbers on an exterior shipping container apply.
 - c. The linear (Code 39) bar code format is in accordance with ISO/IEC 16388
 - d. The standard linear bar code density range should be from 3.0 to 9.4 characters per inch (CPI).
- Unique Item Identifier (UII) – For shipment of UII items
 - a. The 2D (PDF417) symbol must be used to encode the concatenated UII with the Data Identifier "25S"
 - b. The data normally included in the linear bar codes (NSN & Serial Number) will be included in the 2D (PDF417) symbol along with their appropriate Data Identifiers. The Data Identifier for the NSN is "N" and for the serial number it is "S".
 - c. The 2D (PDF417) symbol format is in accordance with ISO/IEC 15438
 - d. **Application of the linear bar codes is not required when the 2D symbol is used.**
 - e. Various configurations of bar code markings are described in narrative and depicted in figures in MIL-STD-129P.
 - f. When the unit is used as the exterior container, only the exterior container bar codes shall be applied.

3. Placement of identification markings on unit packs and intermediate containers.

- Markings on unit packs and intermediate containers shall be so located as to allow the markings to be easily read and to ensure that the markings will not be destroyed when the pack or container is opened for inspection or until its contents have been used. The marking surface shall be the outermost wrap, bag, or container of the unit pack. When a barrier bag is used within another unit container, both the bag and the outermost container must be marked. The linear (Code 39) bar codes and 2D (PDF417) symbols will be located in close proximity to the identification markings.

4. Minimum identification information required to be marked on all exterior containers and unpacked items.

- **National Stock Number (NSN).** The NSN will include spaces or dashes and any prefix or suffix shown in the contract or solicitation. If no NSN is assigned, then this line may be omitted.
- **CAGE Code.** The CAGE (Commercial and Government Entity) code of the company awarded the contract for the item.
- **Part Number (PN).** If a PN is shown in the contract, then only that PN shall be shown. The letters "PN" or "P/N" shall be shown in front of the PN. If the item has no PN or no PN is cited in the contract, then nothing is shown.
- **Item Nomenclature (for hazardous items and ammunition and explosives only).** Proper Shipping Name as specified in the hazardous material regulations. Otherwise, item description is omitted for security purposes.
- **Quantity and Unit of Issue.** (5 EA, as an example) A nondefinitive unit of issue shall be accompanied by a quantitative expression such as "1 RO (100 FT)."
- **Contract Number and Lot Number.** Includes four-digit delivery order or call number, modification number, or lot number, if applicable. Dashes will be included, as shown in the contract, i.e. W56HZV-06-C-1234.

NOTE: Clothing & Textile Marking also requires shipment number and container number.

- **Military Preservation Method and Date of Unit Preservation.** Example: "M41 - 4/04" - Use of the letter "M" in the first position indicates that the pack is a military preservation method; "41" is the method number; "4/04" indicates the date of preservation. If a military preservation method doesn't apply (commercial packaging), the method space will be left blank.
- **Gross Weight.** WT shall precede the weight rounded up to the nearest pound.
- **Serial Number(s).** When an item is assigned a serial number, that number shall be applied and preceded by the abbreviation "SER NO." Serial numbers assigned by the manufacturer solely for indicating the quantity produced shall not be shown.

5. Identification linear (Code 39) bar code and 2D (PDF417) symbol markings for exterior containers:

- NSN, Contract or Purchase Order number, CAGE Code, Contract Line Item Number (CLIN), contractor shipment number and serial number(s) (when assigned) on exterior shipping containers
 - a. The NSN shall consist of the basic 13 characters
 - b. The contract number will include the four digit order number or call number if applicable

- c. If more than five serial numbers are required they are bar coded on a list and included in the package and the serial numbers are also included on a list with the packing list (the serial number list with the packing list does not have to be bar coded)
 - d. The linear (Code 39) bar code format is in accordance with ISO/IEC 16388
 - e. The standard linear bar code density range should be from 3.0 to 9.4 characters per inch.
- Unique Item Identifier (UII) – For shipment of UII items
 - a. The 2D (PDF417) symbol must be used to encode the concatenated UII(s) with the Data Identifier “25S”
 - b. The data normally included in the linear bar codes (NSN, Contract Number, CAGE Code, CLIN, Contractor Shipment Number & Serial Number) will be included in the 2D (PDF417) symbol along with their appropriate Data Identifiers. The Data Identifier for the NSN is “N”; for the Contract Number is “8K”; for the CAGE Code is “17V”; for the CLIN is “4K”; for the Contractor Shipment Number is “5K” and for the serial number it is “S”.
 - c. The 2D (PDF417) symbol format is in accordance with ISO/IEC 15438
 - d. Application of the linear bar codes is not required when the 2D symbol is used.
 - Various configurations of bar code markings are described in narrative and depicted in figures in MIL-STD-129P.

6. Placement of identification and address markings on exterior containers and unpacked items.

The identification markings shall be applied to the upper left two-thirds of the side of the container having the greatest overall, usable marking surface. The required address markings shall also be placed on the identification-marked side of exterior shipping containers. Various configurations of markings are described in narrative and depicted in figures in MIL-STD-129P including:

- Boxes and crates
- Barrels, drums and other cylindrical containers
- Unpacked major equipment
- Palletized unit loads (markings not less than ¾ inch)
- Wood products
- Unpacked vehicles

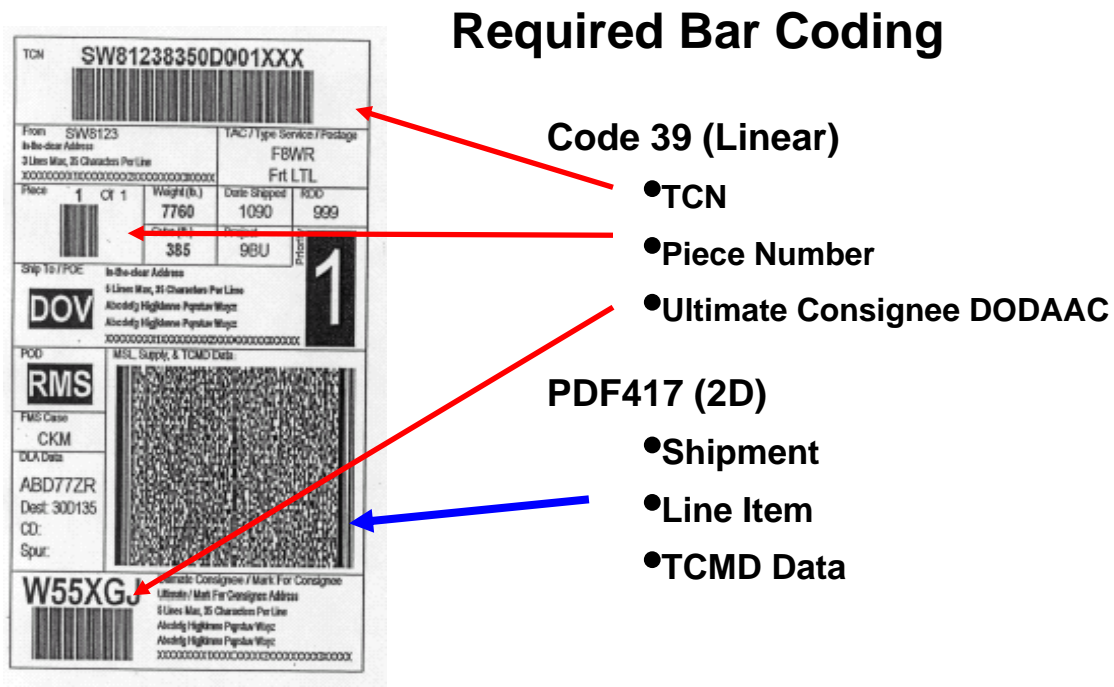
7. Methods of Marking Packs

- Markings shall be clear, legible, durable and nonfading
- Wood or lightly colored materials will be marked in black and green or black materials will be marked in white or yellow.
- Machine printing is preferred but hand printing may be used if permitted by the cognizant activity. Hand printing is not authorized for ammunition.
- Pressure sensitive labels may be used for all containers. Wood containers must have the surface prepared to ensure adhesion.
- Lettering shall be capital letters of equal height, clearly visible, the largest size practical for the package size, not less than 3/32 of an inch
- All exterior labels must be waterproofed
- When bar code labels are used on exterior shipping containers, a waterproof, untinted/transparent, plastic, protective laminate such as ASTM D 5486, type I, class 2 tape—or equivalent protection—shall be applied to or shall be inherent to the label.

B. MILITARY SHIPMENT LABEL

1. Address Markings on Shipping Containers and Pallet Loads

- Unless specifically exempted in the contract, all shippers will apply address markings using a bar coded Military Shipping Label (MSL). This includes shipments to domestic and overseas destinations.
- The Transportation Control Number, Ultimate Consignee Address Code (DODAAC), and Piece Number must be bar coded in code 39 linear bar code format.
- The MSL will also include a two-dimensional (2D PDF417) symbol that will contain shipment, line item and TCMD data.
 - a. Shipment data consists of information entered in-the-clear on the MSL
 - b. Line item data generally consists of the Document/Requisition Number, NSN, Routing Identifier Code (RIC), Unit of Issue, Quantity, Condition Code and Unit Price.
 - c. TCMD data is applicable to shipments that move through the Defense Transportation System and has priority over data.
- The recommended size for the MSL is 4 inches by 6 inches.
- The in-the-clear data and code 39 HRI shall be easily human readable. The code 39 bar codes and the 2D (PDF417) bar code symbol shall be easily machine readable (paragraph 4.2.2.3.).



C. RADIO FREQUENCY IDENTIFICATION – RFID

1. Definitions:

- 463L System – Aircraft pallets, nets, tie down and coupling devices, facilities, handling equipment, procedures and other components designed to interface with military and civilian aircraft cargo restraint systems
- Case – It is either an exterior container within a palletized unit load or it is an individual shipping container.
- Electronic Product Code (EPC) – An identification scheme for universally identifying physical objects via radio frequency identification (RFID) tags and other means. The standardized EPC data consists of an EPC (or EPC Identifier) that uniquely identifies an individual object, as well as an optional filter value when judged to be necessary to enable effective and efficient reading of the EPC tags.
- Radio Frequency Identification (RFID) – An automatic identification and data capture technology comprised of one or more reader/interrogators and one or more RF transponders in which data transfer is achieved by means of suitably modulated inductive or radiating electromagnetic carriers.

2. DoD RFID Implementation Plan

- RFID will be used within DoD and by contractors/vendors in accordance with the Supplier Implementation Plan at <http://www.dodrfid.org>
- Initially, passive RFID tags were applied to case shipments and palletized unit load shipments for applicable commodities, Supply Class I subclass – Packaged Operational Rations; Class II – Clothing, Individual Equipment and Tools; Class VI – Personal Demand Items and Class IX – Weapon System Repair Parts and Components for shipments to Defense Distribution Depot Susquehanna, PA and Defense Distribution Depot San Joaquin, CA
- The second phase expanded the destinations involved to all of the CONUS Defense Distribution Depots and Aerial Ports at Charleston, SC, Norfolk, VA and Fairfield, CA (Travis) and also expanded the Classes of Supply to include Class IIIP--Packaged petroleum, lubricants, oils, preservatives, chemicals, and additives, Class IV--Construction and barrier materials and Subclass of Class VIII – Medical materials (excluding pharmaceuticals, biologicals, and reagents).
- The requirements do not apply to bulk commodities
- The DoD approved frequency range is 860 – 960 MHz

3. RFID Tag Placement

- The passive RFID tag may be integrated with the Military Shipment Label (MSL) or they may be placed in separate locations on the shipment.
- RFID-enabled address labels and/or passive RFID tags should be affixed at a suitable location where there is a minimum risk of damage, easy access to the respective bar code symbols and the highest potential for successful passive RFID tag interrogation.
- For individual cases, the address label/RFID tag shall be placed on the identification marked side and right of center on a vertical face, allowing a minimum of 5 cm (2inches) from all edges of the box or crate.

- For palletized loads, the address label may be attached to a marking board or the shrink/stretch wrap used to bond the load. The passive RFID tag for a pallet load should not be attached to an exterior container if the cargo within the exterior container will not be removed for receipt processing and storage.
- The bottom edge of the address label shall be placed within the range of 18 to 122 cm (32 to 48 inches) from the bottom of the pallet. If the pallet load is less than 51 cm (20 inches) in height, the label should be placed as high as possible on the pallet but no closer than 5 cm (2 inches) to the natural top of the unit load.
- A passive RFID tag should not be placed in a manner that overlaps and other existing radio frequency (RF) transponder. There should be at least 10 cm (4 inches) separation.

4. Advance Shipment Notice (ASN)

- Advance Shipment Notice transactions are used to link the passive RFID tag data to the appropriate shipment and materiel identification information in the DoD data environment. The transaction facilitates the receipt of material based solely on reading the RFID tag as the shipment comes through the door. For this process to work, the ASN must be received by the DoD receiving point before the RFID tagged materiel arrives.
- The ASN must be submitted electronically to DoD's Wide Area Workflow (WAWF) using one of the three approved transmission methods:
 - a. Interactive web-based application WAWF Web Site (link below)
 - b. Electronic Data Interchange (EDI) ANSI ASC X12 Transaction Sets (i.e.856 Ship Notice/Manifest)
 - c. Receiving Report User Defined Format Secure File Transfer (FTP).
- The data contained in the ASN includes contract information, product description and RFID tag data
- Questions about WAWF can be researched at the WAWF web site <https://wawf.eb.mil> or by contacting the WAWF Help Desk at 866-618-5988

D. SPECIAL MARKING

1. Shelf-life

- Shown as part of the item identification markings for unit packs, intermediate and exterior containers and unpacked items
- Managed and controlled in accordance with DoD 4140.27-M
- Type I – Non-extendible (Alphabetic code)
- Type II –Extendible (Numeric code)
- Dates are expressed as month/year except for cure dated items which are expressed in calendar quarters for both Type I and Type II
- Examples:

TYPE I (non-extendible):

MFD DATE 10/01
EXP DATE 10/06

TYPE II (extendible):

ASSEMBLED DATE 10/01
INSP/TEST DATE 10/04

RUBBER or ELASTOMER

CURED DATE 4Q01
INSP/TEST DATE 4Q05

2. Project Code

- When a project code is specified in the contract it shall be included in the address markings and also shown on a white label within a contrasting disc
- Applied to the exterior container on the identification marked side and on the opposite side

3. Special Handling

- All containers will have the appropriate markings applied (unit, intermediate, exterior)
- Applied to the identification marked side and one end
- Types of Special Handling include
 - a. Fragile/Delicate
 - b. This Side Up
 - c. Glass
- Illustrations contained in ASTM D 5445

4. Method 50

- Mandatory for all desiccated packs
- Applies to unit, intermediate, and exterior packs
- Markings are applied in red
- Label (OF 73) is available but not required
- If space is not sufficient for the label, mark
“DESICCATED PACKAGE – DO NOT OPEN UNTIL READY FOR USE”

5. Expedited Handling

- Contracts for critical mission items have the required delivery date (RDD) shown as “999” or the RDD starts with a letter “N”
- Expedited Handling Signal - RDD 999
 - a. Marked with two 999 labels, one adjacent to the address label and one on the opposite side
- Not Mission Capable Supply (NMCS) - RDD “N****”
 - a. Marked with two NMCS labels, one adjacent to the address markings and one on the opposite side

6. ESD Marking

- Applied to packs of items that are susceptible to damage from ESD
- Labels include the ESD Sensitive Device Symbol
- Marked in black on a yellow background
- Unit pack label includes the following narrative
 - a. ATTENTION STATIC SENSITIVE DEVICES
HANDLE ONLY AT STATIC SAFE WORK STATIONS
- Intermediate and exterior packs include the following narrative
 - a. ATTENTION OBSERVE PRECAUTIONS FOR HANDLING
ELECTROSTATIC DISCHARGE SENSITIVE DEVICES

E. DOCUMENTATION

1. Packing Lists

- Sets, kits or assemblies composed of unlike items, identified by a single stock number or part number, shall have a packing list attached to the end or side of the container
- Sets with two or more exterior shipping containers require a master packing list

- a. One copy attached to container number one
- b. One copy placed inside container number one
- c. An additional packing list placed inside each container is recommended
- Kit contents lists shall be placed inside the kit container
- DD 250 shall be used as a packing list for contractor shipment
 - a. These are in addition to the standard distribution
 - b. Marked "Packing List"

2. Direct Vendor Delivery (DVD)

- DVD Shipment documentation must be marked with additional bar codes. The issue/receipt bar code requirement is only applicable to shipments to a location other than a Defense Distribution Depot. The bar code markings shall be placed on either the DD Form 250 or the commercial packing list. Three linear bar codes (Code 39) will contain the following data:
 - a. Document Number and suffix (if applicable), may be referred to in a contract as the requisition number
 - b. National Stock Number (NSN)
 - c. Inventory Control Point Routing Identifier Code (RIC), Unit of Issue, Quantity (five digits), Condition Code, Distribution Code and Unit Price

3. Exceptions to use of exterior container documentation

- Not required for like items or single item packs when contents are listed on label attached to box
- Copies of the DD Form 250 are still required per Appendix F of the DFARS this includes a hardcopy of the Receiving Report for shipments in WAWF
- For controlled, sensitive, classified and pilferable (except Foreign Military Sales), the shipping documentation shall be placed inside all containers

F. HAZARDOUS MATERIALS

1. Marked in accordance with MIL-STD-129 and CFR 49 - Transportation

- Mode of transportation may also lead to additional regulations
 - a. Commercial Air – International Air Transport Association Dangerous Goods Regulation
 - b. Ocean Vessel – International Maritime Dangerous Goods Code
 - c. Military Air – AFMAN 24-204(I) – Preparing Hazardous Materials for Military Air Shipments
- Basic identification markings - Proper Shipping Name and Identification Number
- UN Package Performance specification markings
- Package orientation arrows for combination packages with liquid hazardous materials
- Flash Point (60.5 Celsius or 141 Fahrenheit or less – Flammable Liquids)

G. AMMUNITION AND EXPLOSIVES

1. Identification markings for unit packs, intermediate containers and unpacked items

- NSN & DoD Identification Code DoDIC/ Navy Ammunition Logistics Code NALC
- Quantity and Unit of Issue (UI must only be shown for other than EA) & Item Description
- Lot Number and Serial Number (when assigned)

2. Identification markings on exterior containers

- Includes all of the information required on inner containers plus:
- Weight – WT precedes the numerical gross weight in whole pounds, rounded up
- Proper shipping name and UN Identification Number (or North American NA numbers)
- Special Markings (Precautionary & required HAZMAT labels)
- DoDIC/NALC and Lot Number (end of container – not preceded by LOT and not underlined)
- Serial Number – when required, preceded by SER, above the LOT number on the side of container
- Lot Number (side of container – lowermost marking preceded by LOT and underlined)
- UN performance specification (certification) markings

3. Ammunition Bar Codes

- Use of a 2D bar code per PDF417 (ISO/IEC 15438) is required
- 2D bar code replaces the linear bar codes previously required
- Data structure includes load generic and NSN information
- All encoded data elements shall be printed as human readable
- Software has been developed to generate the Ammunition Bar Code Label
 1. Requires certain Zebra printers
 2. <http://www.savi.com/downloads/JMBL/index.html>

Web Sites, Documents and Software Information

- DOD Specifications and Standards
 - <http://assist.daps.dla.mil/quicksearch/>
- Military Shipping Label download
 - <http://www.asset-trak.com>
- DOD Hardcopy Forms and Labels
 - <https://navalforms.daps.dla.mil/web/public/home>
- DLA Packaging Web Site
 - <http://www.dscc.dla.mil/Offices/packaging/>
- DoD RFID Information
 - <http://www.dodrfid.org>

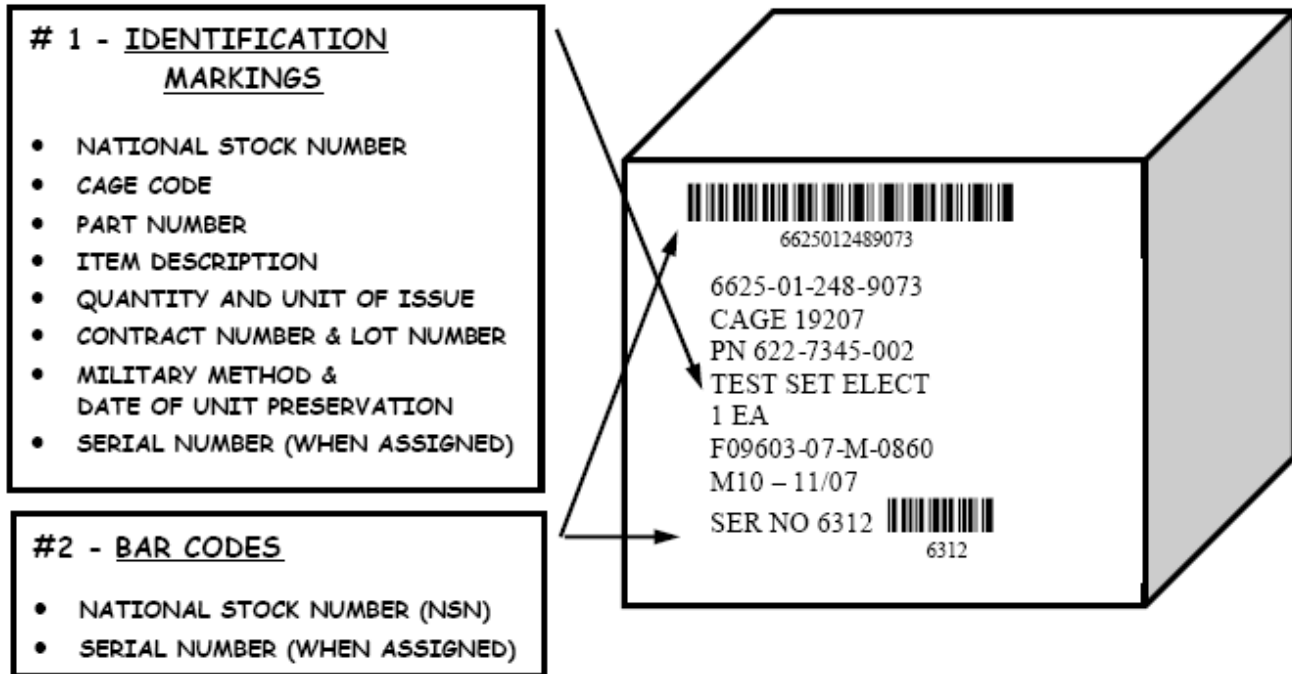
Packaging and bar code software sources:

- EasySoft
 - <http://www.easysoftcorp.com/>
- Mil Pac
 - <http://www.milpac.com/index.html>

MIL-STD-129P MARKING GUIDE

With Linear (Code 39) Bar Codes

UNIT & INTERMEDIATE PACK



General marking requirements for unit and intermediate packs are divided into two categories:

1 - identification markings are in paragraph 4.1.1 (page 22)

2 - bar code markings are in paragraph 4.4.1.1 (page 48)

Placement of the identification markings is described in paragraph 4.3.1 (page 34).
When a barrier bag is used within another unit container, both the bag and the outermost container must be marked.

Placement of the bar code markings is described in paragraph 4.4.2 (page 53).

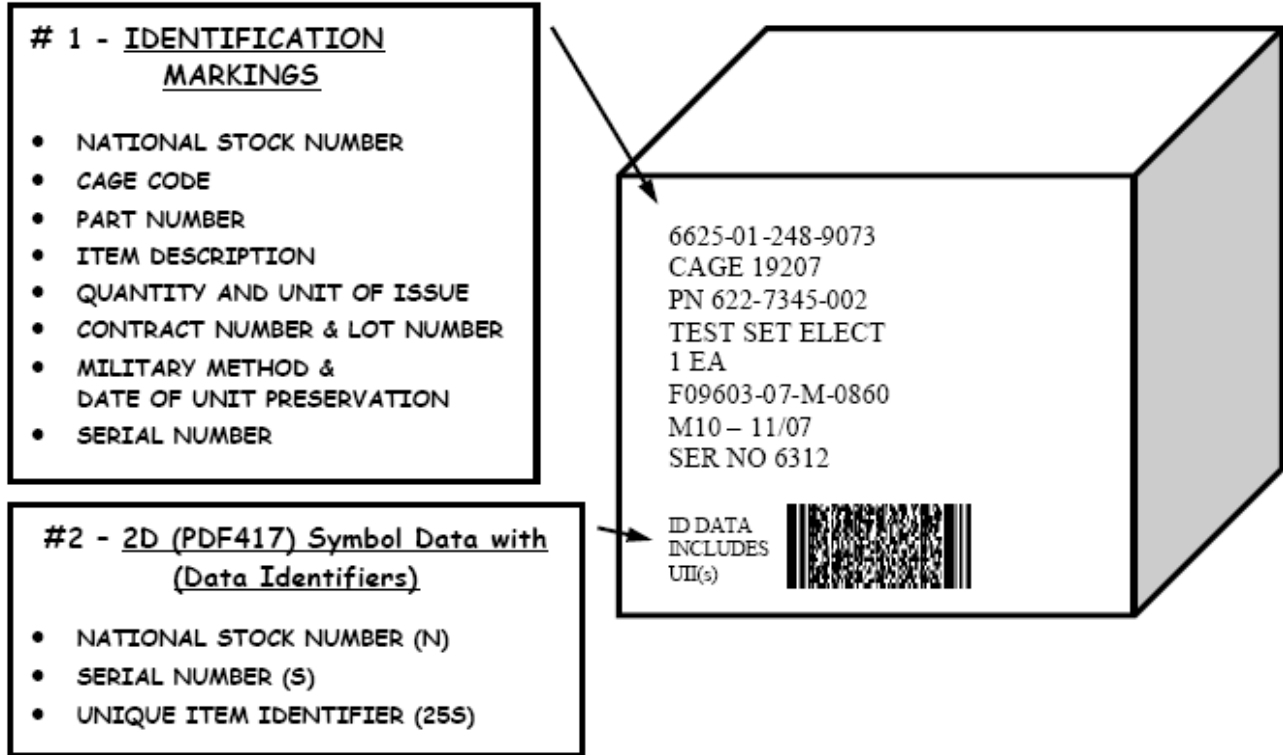
Unit containers used as shipping containers should be marked as an exterior container (paragraph 4.1.1 page 22).

This information is for general guidance only!
Consult MIL-STD-129P, w/Change #4, for specific requirements.

MIL-STD-129P MARKING GUIDE

With 2D (PDF417) Symbol and Unique Item Identifiers

UNIT & INTERMEDIATE PACK



General marking requirements for unit and intermediate packs are divided into two categories:

1 - identification markings are in paragraph 4.1.1 (page 22)

2 - bar code markings are in paragraph 4.4.1.1 (page 48)

Placement of the identification markings is described in paragraph 4.3.1 (page 34). When a barrier bag is used within another unit container, both the bag and the outermost container must be marked.

Placement of the bar code markings is described in paragraph 4.4.2 (page 53).

Unit containers used as shipping containers should be marked as an exterior container (paragraph 4.1.1 page 22).

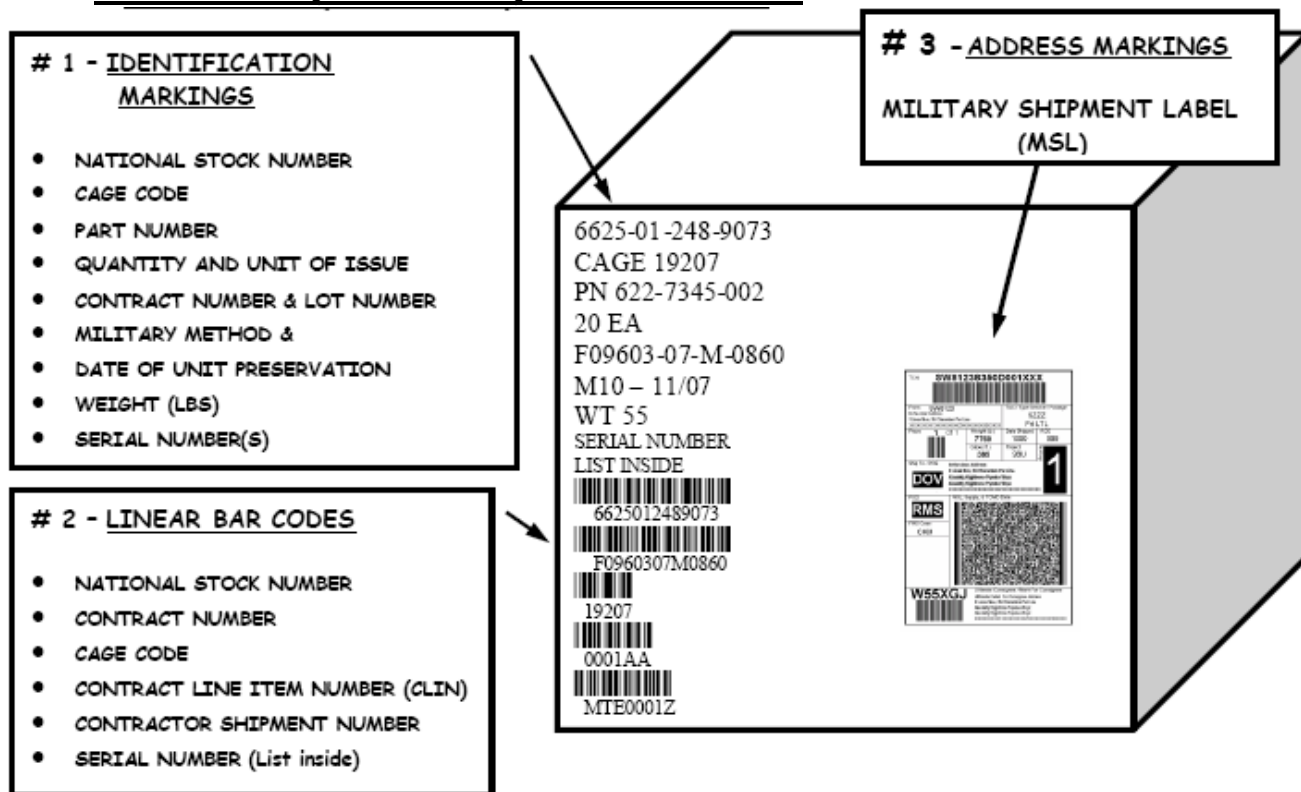
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MIL-STD-129P MARKING GUIDE

With Linear (Code 39) Bar Codes

EXTERIOR (SHIPPING) CONTAINERS



General marking requirements for exterior containers are divided into three categories:

1 - identification markings are in paragraph 4.1.2 (page 23)

2 - bar code markings are in paragraph 4.4.1.2 (page 49)

3 - address markings are in paragraph 4.2 (page 25)

Placement of the identification markings is described in paragraph 4.3.2 (page 35). Boxes and crates over ten cubic feet require the identification data markings repeated on the left end (paragraph 4.3.2.1, page 37).

Placement of the bar code markings is described in paragraph 4.4.3 (page 54). Acceptable bar code formats are illustrated in figure 1 (page 21) and figure 22 (page 60).

Clothing and textile items require additional markings: shipment number and container number (paragraph 4.1.2.f.(3), page 24).

Hazardous materials markings are detailed in paragraph 5.5 (page 94). Ammunition and explosive markings are detailed in paragraph 5.6 (page 102).

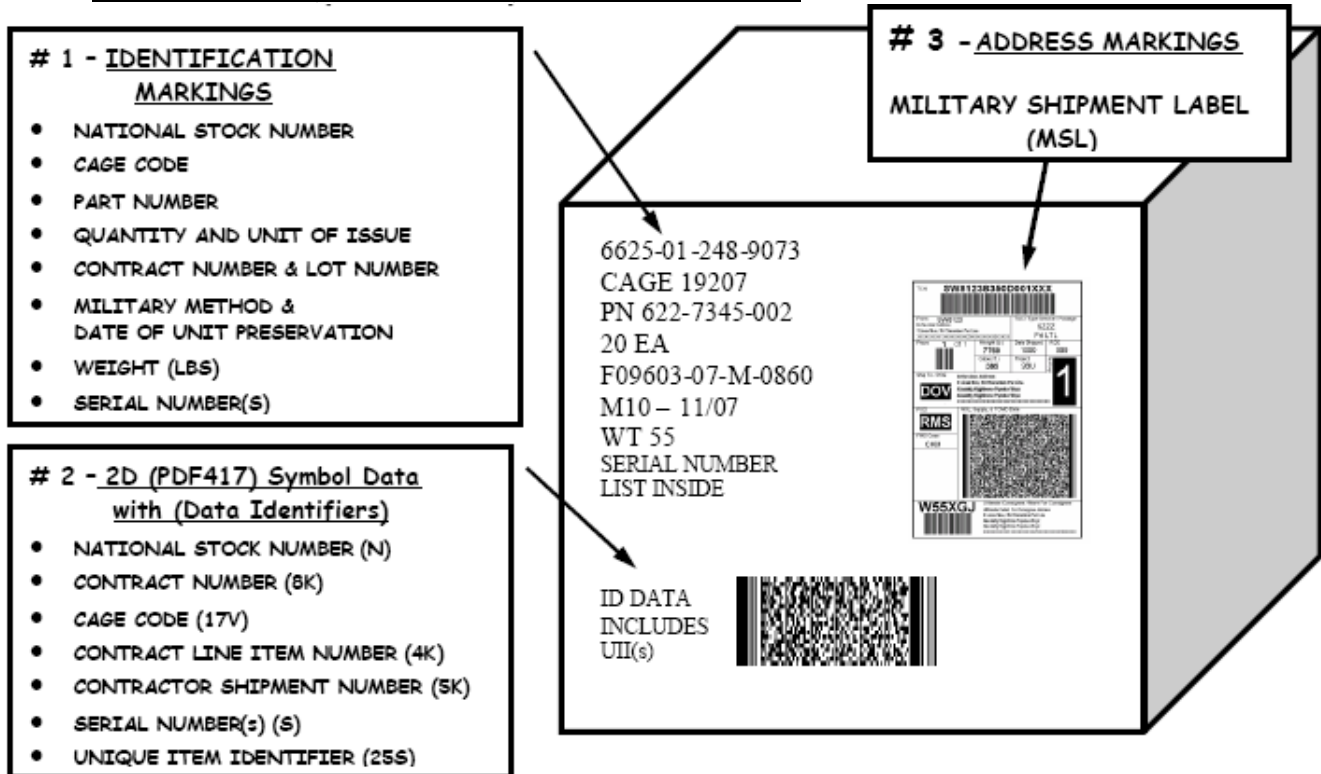
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MIL-STD-129P MARKING GUIDE

With 2D (PDF417) Symbol and Unique Item Identifiers

EXTERIOR (SHIPPING) CONTAINERS



General marking requirements for exterior containers are divided into three categories:

1 - identification markings are in paragraph 4.1.2 (page 23)

2 - bar code markings are in paragraph 4.4.1.2 (page 49)

3 - address markings are in paragraph 4.2 (page 25)

Placement of the identification markings is described in paragraph 4.3.2 (page 35). Boxes and crates over ten cubic feet require the identification data markings repeated on the left end (paragraph 4.3.2.1, page 37).

Placement of the bar code markings is described in paragraph 4.4.3 (page 54). Acceptable bar code formats are illustrated in figure 1 (page 21) and figure 22 (page 60).

Clothing and textile items require additional markings: shipment number and container number (paragraph 4.1.2.f.(3), page 24).

Hazardous materials markings are detailed in paragraph 5.5 (page 94). Ammunition and explosive markings are detailed in paragraph 5.6 (page 102).

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