

AD-667388

JOINT MILITARY PACKAGING TRAINING CENTER

**MILITARY PACKAGING  
REFERENCE GUIDE**

TO

SPECIFICATIONS - MATERIALS  
PROCESSES - PROCEDURES  
AND METHODS

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for public release and sale; its  
distribution is unlimited.

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#### FOREWORD

This booklet is intended as a handy reference guide for use by the students of the Joint Military Packaging Training Center. It contains reference listings of publications pertaining to the cleaning processes, drying procedures, preservative materials, methods of preservative application, methods and submethods of preservation, and the most common materials and formulas used for packaging and packing of military supplies and equipment. The specifications and standards include the latest revision symbols and the number of the current amendment or change, as applicable. Any revision, amendment, or change occurring after 31 Oct 1967 is not included, but will be included in the next change or revision to the booklet. This booklet should not be construed as a complete and comprehensive list of packaging publications.

Any comments concerning the booklet should be addressed to: Director, Joint Military Packaging Training Center, ATTN: AMXPT-SD, Aberdeen Proving Ground, Maryland 21005.

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IMPORTANT NOTICE

Due to reorganization within the Department of the Army, the codes for Army activities have been changed. The following table is provided as a cross-reference between new Army command symbols and former Army Technical Service symbols:

| FORMER ARMY<br>TECHNICAL SERVICES | NEW ARMY COMMANDS<br>AND ACTIVITIES |
|-----------------------------------|-------------------------------------|
| CODE                              | CODE                                |
| CM Chemical Corp                  | MU Munitions<br>Command             |
| CE Corps of<br>Engineers          | Surgeon General                     |
|                                   | * See below                         |
| MD Army Medical<br>Corps          | GL US Army Natick<br>Laboratories   |
| OR Ordnance Corps                 | EL Electronics<br>Command           |
| QM Quartermaster<br>Corps         | MO Mobility<br>Command              |
| SC Signal Corps                   | WC Weapons<br>Command               |
| TC Transportation<br>Corps        | MR Materials<br>Research Agency     |
|                                   | MI Missile Command                  |

\* The former Technical Service Code is being replaced by the code of one of the new commands reflecting interest in the document. To determine the new command code to be substituted, the FSC number appearing in the document must be checked against a table found in the Department of Defense Index of Specifications and Standards.

Following are the codes for the Navy.

NAVY

FORMER NAVY CODES

|    |                                   |
|----|-----------------------------------|
| WF | Bureau of Naval Weapons           |
| MC | Marine Corps                      |
| MS | Bureau of Medicine and Surgery    |
| PE | Bureau of Naval Personnel         |
| SH | Bureau of Ships                   |
| SA | Bureau of Supplies and Accounts   |
| YD | Bureau of Yards and Docks         |
| CG | US Coast Guard Headquarters       |
| NP | Publications and Printing Service |
| TD | Training Devices Center           |

NAVY

NEW NAVY CODES

|                 |   |
|-----------------|---|
| NAVMATCOM       | Naval Material Command                  |
| NAVAIRSYSCOM    | Naval Air Systems Command               |
| NAVSHIPS&SYSCOM | Naval Ships Systems Command             |
| NAVSUPSYSCOM    | Naval Supply Systems Command            |
| NAVELECSYSCOM   | Naval Electronics Systems<br>Command    |
| NAVORDSYSCOM    | Naval Ordnance Systems Command          |
| NAVFACENCOM     | Naval Facilities Engineering<br>Command |
| MC              | Marine Corps                            |
| MS              | Bureau of Medicine and Surgery          |
| PE              | Bureau of Personnel                     |
| CC              | US Coast Guard Headquarters             |
| NP              | Publications and Printing               |
| TD              | Training Devices Center                 |

Following are the Codes for the US Air Force:

AIR FORCE

| <u>Code</u>    |  |
|----------------|--|
| 01 AFSPPE      | Hq. USAF, USAF Departmental Standardization Office   |
| 03 AFMSHB      | Materiel Division, Directorate of Plans and Hospitalization, Office of the Surgeon General     |
| 10 AFSC, SCSVN | Systems Criteria Division, Directorate of Systems Policy, DCS/Systems                          |
| 11 AFSC, SEP   | Research and Technology Division, and Aeronautical Systems Division, Systems Engineering Group |
| 12 AFSC, RPPS  | Air Force Rocket Propulsion Laboratory   |
| 13 AFSC, ESTS  | Electronic Systems Division  |
| 14 AFSC, SSSD  | Space Systems Division   |
| 15 AFSC, WILR  | Air Force Weapons Laboratory   |
| 16 AFLC, NCMSP | Maintenance Systems Division   |
| 17 AFSC, ELMES | Rome Air Development Center  |

|    |               |   |
|----|---------------|---|
| 18 | AFSC, BSOM    | Ballistic Systems Division                                  |
| 23 | AFLC, MCDEQ   | Management Engineering<br>Office, Quality Control<br>Branch |
| 25 | AFLC, MCSP    | Air Force Provisioning<br>Policy and Procedures Office      |
| 26 | AFLC, MCSI    | Cataloging and Standardi-<br>zation Division                |
| 28 | AFLC, MCH     | Staff Chaplain  |
| 43 | AFLC, MCTE    | Packaging and Materials<br>Handling Division                |
| 69 | AFLC, SGTE    | Air Force Packaging<br>Evaluation Agency                    |
| 70 | OJAMA, OONSS  | Ogden Air Materiel Area                                     |
| 71 | OCAMA, OCNSB  | Oklahoma City Air Materiel<br>Area                          |
| 79 | SAAMA, SAWRCS | San Antonio Air Materiel<br>Area                            |

|    |                          |   |
|----|--------------------------|---|
| 80 | SMAMA, SMNSS             | Sacramento Air Materiel Area  |
| 82 | SAAMA, SANSS             | San Antonio Air Materiel Area   |
| 84 | WRAMA, WRNSS             | Warner Robins Air Materiel Area                                       |
| 85 | AFLC, SGEBA              | Interchangeability and Control Division                               |
| 89 | USAFSS, AFCD<br>(DSOC-3) | USAF Security Service, 6936<br>Communications Security<br>Depot Group |

DEFENSE SUPPLY AGENCY

|    |  |
|----|--|
| DH | Headquarters, Defense Supply Agency        |
| CS | Defense Construction Supply Center         |
| CT | Defense Clothing and Textile Supply Center |
| DM | Defense Medical Supply Center              |
| GS | Defense General Supply Center              |
| IS | Defense Industrial Supply Center           |
| PS | Defense Fuel Supply Center                 |
| SS | Defense Subsistence Supply Center          |
| IP | Defense Industrial Plant Equipment Center  |

OTHER

|    |                               |
|----|-------------------------------|
| DS | Defense Atomic Support Agency |
|----|-------------------------------|

CLEANING PROCESSES AND MATERIALS  
MIL-F-116

---

- C-1      ANY APPLICABLE PROCESS
- C-3      PETROLEUM SOLVENT CLEANING  
P-D-680(2), Dry Cleaning Solvent  
or  
TT-T-291c, Thinner, Paint, Volatile  
Mineral Spirits (Petroleum-Spirits)
- C-5      PETROLEUM SOLVENT CLEANING (C-3),  
FOLLOWED BY FINGERPRINT REMOVER (C-8)  
P-D-680(2), Dry Cleaning Solvent  
  
TT-T-291c, Thinner, Paint, Volatile  
Mineral Spirits (Petroleum-Spirits)  
and  
MIL-C-15074B(1), Corrosion Preventive,  
Fingerprint Remover
- C-7      VAPOR DEGREASING  
O-T-235b, Tetrachloroethylene (Perchl-  
oroethylene), Technical Grade  
or  
O-T-634a, Trichloroethylene

- C-8            PERSPIRATION AND FINGERPRINT REMOVAL  
MIL-C-15074B(1) Corrosion Preventive,  
Fingerprint Remover  
                  and  
P-D-680(2) Dry Cleaning Solvent,  
                  or  
TT-T-291c, grade 1, Thinner; Paint,  
Volatile Mineral Spirits (Petroleum  
Spirits)
- C-9            ALKALINE CLEANING  
MIL-C-5543A, Cleaning Compound, Washing-  
Machine (for Aircraft Metal Parts);  
                  or  
P-C-436b, Cleaning Compound, Alkali  
Boiling Vat, (soak) hydrosteam
- C-11           ELECTROCLEANING  
P-C-535(1), Cleaning Compound, Plater's  
Electrocleaning for Steel
- C-12           EMULSION CLEANING  
P-C-444, Cleaning Compound, Solvent,  
Grease E Emulsifying
- C-14           STEAM CLEANING  
P-C-437, Supp 5, Cleaning Compound, High-  
Pressure Steam Cleaning
- C-15           ABRASIVE BLAST  
Materials as specified
- C-16           ABRASIVE BLAST (HONING PROCESS)  
Materials as specified

- C-17      SOFT GRIT BLAST  
MIL-G-5634A, Grain Abrasive, Soft (for  
Carbon Removal)
- C-18      VAPOR-DEGREASING FOLLOWED BY FINGERPRINT  
REMOVAL  
(See Processes C-7 and C-8 for Materials)

II

DRYING PROCEDURES  
MIL-P-116

- D-1      PREPARED COMPRESSED AIR
- D-2      OVEN
- D-3      INFRA-RED LAMPS
- D-4      WIPING
- D-5      DRAINING

III

PRESERVATIVE MATERIALS  
MIL-P-116

- P-1      THIN FILM PRESERVATIVE (HARD-DRYING,  
COLD APPLICATION)  
MIL-C-16173C, grade 1, Corrosion Pre-  
ventive Compound, Solvent Cutback, Cold-  
Application

- P-2      THIN FILM PRESERVATIVE (SOFT FILM, COLD-APPLICATION)  
MIL-C-16173C, grade 2
- P-3      THIN FILM PRESERVATIVE, WATER DISPLACING (SOFT FILM, COLD-APPLICATION)  
MIL-C-16173C, grade 3
- P-6      LIGHT PRESERVATIVE COMPOUND (HOT DIP, SOFT FILM)  
MIL-C-11796B, class 3
- P-7      MEDIUM PRESERVATIVE OIL (COLD APPLICATION)  
MIL-L-3150A(1), Lubricating Oil, Preservative, Medium
- P-9      VERY LIGHT PRESERVATIVE OIL (COLD APPLICATION)  
VV-L-800, Lubrication Oil, General Purpose, Preservative, Water Displacing, Low Temperature
- P-10     ENGINE PRESERVATIVE OIL  
MIL-L-21260, Lubricating Oil, Internal-Combustion Engine, Preservative;  
or  
MIL-C-6529C(2), Corrosion Preventive, Aircraft Engine  
MIL-C-8188C, Corrosion Preventive Oil, Gas Turbine Engine, Aircraft Synthetic Base



P-19      THIN FILM PRESERVATIVE (TRANSPARENT,  
NONTACKY)  
MIL-C-16173C, grade 4, Corrosion Preventive Compound, Solvent Cutback, Cold-Application.

P-20      LUBRICATING OIL, CONTACT (VCI TREATED)  
MIL-L-46002, Lubricating Oil, Contact and Volatile Corrosion Inhibited,  
and  
MIL-I-23310, Inhibitors, Corrosion, Volatile, Oil Type

IV

METHODS OF PRESERVATIVE APPLICATION  
MIL-P-116

1.      DIPPING
2.      FLOW COATING
3.      SLUSHING
4.      BRUSHING
5.      FILLING OR FLUSHING
6.      FOGGING
7.      SPRAYING

METHODS AND SUBMETHODS OF PRESERVATION  
MIL-P-116

---

METHOD I      PRESERVATIVE COATING (WITH GREASE-  
PROOF WRAP AS REQUIRED)

METHOD IA     WATER-VAPORPROOF ENCLOSURES (WITH  
PRESERVATIVE AS REQUIRED)

Submethod IA-5 - Rigid Metal Con-  
tainer, Sealed

Submethod IA-6 - Rigid Container  
(items immersed in preservative,  
oil type, sealed)

Submethod IA-8 - Water-Vaporproof  
Bag, Sealed

Submethod IA-13 - Rigid Container,  
Other Than All-Metal, Sealed

Submethod IA-14 - Container, Bag,  
Container

Submethod IA-15 - Container, Bag

Submethod IA-16 - Floating Barrier



METHOD II WATER-VAPORPROOF BARRIER WITH  
DESICCANT (WITH CONTACT PRESERVATIVE  
WHEN REQUIRED)

Submethod IIa - Floating Bag

Submethod IIb - Container, Barrier,  
Container

Submethod IIc - Cushioned Item Bag

Submethod IId - Rigid Metal Container,  
Sealed

Submethod IIe - Container, Barrier

Submethod II f - Rigid Container,  
Other Than All-Metal, Sealed

METHOD III PACKAGED FOR MECHANICAL AND PHYSICAL  
PROTECTION ONLY

VI

PACKAGING AND PACKING MATERIALS

ADHESIVES

MM-A-130a

Adhesive, Contact

MM-A-179

Adhesive, Paper Label, Water-Resis-  
tant, Water Emulsion Type

ADHESIVES (CONTINUED)

MMM-A-25Ca Adhesive, Water-Resistant (For sealing  
Amd. 1 fiberboard boxes)

MMM-A-260a(1) Adhesive, Water-Resistant (For sealing  
waterproof paper)

MIL-A-388A(1) Adhesive and Sealing Compound,  
Cellulose Nitrate Base

MIL-A-3941A Adhesive, Paper Label, Water-Resis-  
tant

MIL-A-5092B(1) Adhesive, Rubber Base, General  
Purpose

BAGS AND SACKS

UU-B-38b Bag, Paper (Hardware)  
Int. Amd. 1  
(GSA-FSS)

UU-B-0040b Bags, Paper, Shipping  
(GSA-FSS)

UU-S-48b Sacks, Shipping, Paper

PPP-b 15a Bags and Envelopes, Cellophane for  
Packaging

PPP-B-20b Bags, Cotton, Mailing

BAGS AND SACKS (CONTINUED)

FPP-B-35b        Bags, Textile. Shipping, Burlap,  
Cotton and Waterproof Laminated

PPP-S-30(2)     Sack, Shipping, Paper (Cushioned)

MIL-B-117D      Bags. Interior, Packaging

MIL-B-137A(2)   Bags and Sacks, for Packaging and  
Int. Amd.3(GL)   Packing of Subsistence Items

MIL-B-22205B    Bags, Transparent, Flexible, Heat-  
Sealable, for Packaging Applications

BARRELS, DRUMS, PAILS AND KEGS

NN-K-231e       Keg, Wood, Slack

PPP-B-41        Barrels, Wood, Slack

PPP-D-700b      Drums, Metal, 55-Gallon (For Acids  
Int. Amd.2(GL)   and Corrosive Liquids)

PPP-D-705c      Drum: Metal Shipping, Steel (Over 12  
Int. Amd.2(GL)   and under 55-gallon)

PPP-D-711d      Drums, Metal, Shipping, Steel, Light-  
Int. Amd.2(GL)   weight 55-gallon

PPP-D-723e      Drums, Fiber  
Int. Amd. 1  
(GSA-FSS)

BARRELS, DRUMS, PAILS AND KEGS (CONTINUED)

PPP-D-729b(2) Drums, Metal, 55-gallon (for Shipment  
of Noncorrosive Material)

PPP-F-704b Pails, Shipping, Steel 1-12 Gal.

MIL-D-112A Drums, Plywood

MIL-D-6054C Drums, Metal, Shipping and Storage  
w/Supp 1A  
Int. Amd. 1 (GL)

MIL-D-6055b(1) Drums: Metal, Reusable, Shipping  
and Storage (Cap from 88 to 510 cu. in.)

MIL-D-26993A(4) Drums, Fiber, for Domestic Shipment  
of Desiccant

BARRIER MATERIALS

L-P-378b Plastic Sheet and Strip (Polyolefin)

L-P-512a Plastic Sheet (Sheeting), Polyethy-  
lene

PPP-B-1055 Barrier Material, Waterproofed,  
Flexible

MIL-B-121C Barrier Material, Greaseproofed,  
Waterproofed, Flexible

MIL-B-131E Barrier Material, Water-Vaporproof,  
Amd. 1 Flexible

BARRIER MATERIALS (CONTINUED)

MIL-A-143D(1) Aluminum Foil

MIL-L-10547D Liners, Case and Sheet, Overwrap;  
Water-Vaporproof, or Waterproof  
Flexible

MIL-B-13239C Barrier Material, Waterproofed,  
Flexible, All Temperature

MIL-P-20293A Paper, Kraft, Asphalt Impregnated

MIL-F-22191B Films, Transparent, Flexible, Heat  
Sealable for Packaging Applications

BOXES, FIBERBOARD

PPP-B-566c Boxes, Folding, Paperboard

PPP-B-636c(2) Box, Fiberboard  
Int. Amd. 3(GL)

PPP-B-640d Boxes, Fiberboard, Corrugated,  
Triple-Wall

BOXES, FIBERBOARD (CONTINUED)

|                      |   |
|----------------------|---|
| PPP-B-655            | Box, Fiberboard, Six or Eight Sides                                     |
| PPP-B-655(2)         | Boxes, Paperboard, Metal Stayed<br>(Including Stay Material)            |
| PPP-B-676C           | Boxes, Set-Up   |
| MIL-B-38721<br>USAF  | Boxes, Consolidation, Fiberboard  |
| MIL-B-40642(2)       | Box, Fiberboard, Corrugated,<br>Triple-Wall, 1,000 lb. Capacity         |
| MIL-B-43014A<br>(MO) | Boxes, Water-Resistant, Paperboard,<br>Folding, Set-Up and Metal Stayed |
| MIL-B-43291<br>(GL)  | Boxes, Fiberboard, Corrugated,<br>Doublewall, Weather-Resistant         |

BOXES - WOOD AND METAL

|            |   |
|------------|---|
| PPP-B-576c | Box, Wood, Cleated Veneer, Paper-<br>Overlaid |
| PPP-B-585b | Boxes, Wood, Wirebound                        |
| PPP-B-591a | Boxes, Fiberboard, Wood-Cleated               |
| PPP-B-601c | Boxes, Wood, Cleated Plywood                  |
| PPP-B-621b | Boxes, Wood, Nailed and Lock-Corner           |

BOXES - WOOD AND METAL (CONTINUED)

MIL-B-11886H Box, Metal, Shipping, Reusable,  
Transporter, Steel Maximum Load  
9,000 lbs.

MIL-B-21827A(1) Box, Consolidation

MIL-B-25305A Boxes, Metal or Non-Metal Shipping

MIL-E-26195A Boxes, Wood-Cleated, Skidded,  
Load-Bearing Base

MIL-B-26241A Boxes, Demountable, Assembled with  
Fasteners Other Than Nails and  
Screws

MIL-STD-813 Box, Wood, Demountable, Reusable  
(USAF) and Modular

BOLTS (SEE PACKAGING HARDWARE)

BULK PACKAGING MATERIALS

NN-P-530b Plywood, Flat Panel  
NN-P-00530C(ME)

PPP-F-00310 Fiberboard, Corrugated, Wax and/  
(GSA-FSS) or Resin Impregnated

PPP-F-320c(2) Fiberboard; Corrugated and Solid,  
Int. Amd. 3 Sheet Stock (Container Grade), and  
(GSA-FSS) Cut Shapes

BULK PACKAGING MATERIALS (CONTINUED)

PPP-V-205a(1) Veneer, Paper-Overlaid, Container-Grade  
MIL-P-14591B(1) Plastic Film: Non-Rigid, Transparent

CANS

PPP-C-55A Cans, Fiberboard and Paperboard (with Paper and Metal Ends)  
PPP-C-96a(1) Cans, Metal, 28-Gage and Lighter  
MIL-C-3955A Cans, Fiber, Spirally Wound  
MIL-C-4470B Cans, Hermetic Sealing, Rectangular  
MIL-C-10464B Cans, Hermetic Sealing, Metal, Light Gage, Tear-Strip Type  
MIL-C-26094B Can, Hermetic Sealing, Aluminum, Two-Piece

CLEANING MATERIALS

O-T-236b Tetrachloroethylene (Perchloroethylene)  
O-T-634a Trichloroethylene  
P-C-436b Cleaning Compounds, Alkali, Boiling Vat, (Soak) Hydrosteam  
P-C-437 Cleaning Compound, High-Pressure Steam Cleaning  
Supp 5

CLEANING MATERIALS (CONTINUED)

P-C-444a      Cleaning, Compound, Solvent, Grease  
                  Emulsifying

P-C-535(1)     Clearing Compound, Plater's Electro-  
                  cleaning for Steel

P-D-680(2)     Dry Cleaning Solvent

TT-T-291c      Thinner, Paint, Volatile Mineral  
                  Spirits (Petroleum Spirits)

MIL-C-5543A(1)    Cleaning, Compound, Washing-Machine  
Int. Amd. 2      (Aircraft Metal Parts)  
(AS)

MIL-G-5634B     Grain Abrasive, Soft (For Carbon  
                  Removal)

MIL-C-15074C    Corrosion Preventive, Fingerprint  
                  Remover

MIL-D-16791E(2) Detergents, General Purpose Liquid,  
                  Nonionic

MIL-C-52412     Cleaning Compound, High-Pressure  
                  Cleaner, Steam

COATING COMPOUNDS

MIL-P-149A      Plastic Coating, Compound, Strip-  
                  pable (Hot-Dipping)

COATING COMPOUNDS (CONTINUED)

- MIL-T-152B(2) Treatment, Moisture and Fungus -  
Resistant of Communications,  
Electronics, and Associated  
Electrical Equipment
- MIL-V-173B(2) Varnish Moisture-Fungus Resistant  
(For the Treatment of Communications  
Electronic and Associated Electrical  
Equipment)
- MIL-C-3254A(3) Coating System, Bridging Strip-  
pable, Sprayable
- MIL-C-6799C(1) Coating, Sprayable, Strippable,  
Protective
- MIL-P-11520D(2) Preservative Coating, Rubber for  
Rubber Surfaces
- MIL-V-13811C Varnish, Waterproofing, Electrical -  
Ignition
- MIL-C-16555C(1) Coating Compound, Strippable,  
Sprayable
- MIL-C-23760A(1) Coating, Sprayable, Strippable,  
(AS) Protective for Preservation and  
Packing of Weapons Systems and  
Components, Application of

COATING COMPOUNDS (CONTINUED)

MIL-P-45021A Plastic Coating Compound, Strippable  
Cold Dipping (120°F.)

CONTAINERS (MISCELLANEOUS)

PPP-C-186 Containers, Packaging and Packing  
for Drugs, Chemicals, and Pharma-  
cuticals

PPP-T-495a(1) Tubes, Mailing and Filing

MIL-C-4116A Containers, Shipping Reusable,  
Wood, Aircraft Engines

MIL-C-5584B(1) Containers, Shipping, Aircraft  
Engines, Metal

MIL-C-9282A Container, Shipping, Metal, Reusable  
5 Cu. Ft. - 50 Cu. Ft. Volume

MIL-C-9959(1) Container, Flexible, Reusable,  
Water-Vaporproof

MIL-C-22443 Containers, Modular, Metal, General  
(AS Specifications For

MIL-C-25010 Containers, Air and Surface Ship-  
ment of Aircraft Components (2,000  
Pounds Maximum Loads)

MIL-C-38226 Containers, Polyurethane, Rigid or  
Elastic for Packaging Small Engines

CRATES

PPP-C-650 Crates, Wood, Open and Covered

MIL-C-104A(1) Crates, Wood, Lumber and Plywood Sheathed, Nailed and Bolted

MIL-C-3774A Crates, Wood; Open 12,000- and 16,000- Pound Capacity

MIL-C-9437C Crate, Wood, Open, Fuel Tank, External, Assembled

MIL-C-9897(1) Crate, Slotted Angle, Steel or Aluminum, for Lightweight Airframe Components and Bulky Items (For Maximum Loads of 3,000 lbs.)

MIL-C-11133B Crates, Wood Slatted Style, Wire-bound, Domestic

MIL-C-22806A Crates, Sheathed, Wood, Wirebound

MIL-C-25371 Crate, Wood, Open, Domestic (For Lightweight Bulky Airframe Items)

CUSHIONING

C-F-202C Felt Sheet (Hair) and Felt Roll (Hair)

PPP-P-150a Paper, Shredded Waxed

CUSHIONING (CONTINUED)

|   |  |
|---|--|
| PPP-P-291C  | Paperboard, Wrapping (With Cushioning Value)                               |
| PPP-C-00795<br>(GSA-FSS)                          | Cushioning Material, Cellular, Plastic Film (For Packaging Applications)   |
| PPP-C-843a(3)                                     | Cushioning Material, Cellulosic  |
| PPP-C-850   | Cushioning Material, Polystyrene, Expanded, Resilient (For Packaging Uses) |
| PPP-t-911c  | Excelsior, Wood, Fabricated Pads and Bulk Form                             |
| MIL-B-3106  | Board, Composition, Water-Resistant, Solid (for Filler or Cushioning Pads) |
| MIL-R-6130B                                       | Rubber, Cellular, Chemically Blown   |
| MIL-C-7769A<br>Int. Amd. 3(69)<br>Int. Amd. 1(MU) | Cushioning Material, Uncompressed Bound Fiber, For Packaging               |
| MIL-h-9884B                                       | Honeycomb Material, Cushioning, Paper                                      |

CUSHIONING (CONTINUED)

MIL-P-13607(MU) Padding Materials, Resilient  
(For Packaging of Ammunition)

MIL-C-17435B(1) Cushioning Material, Fibrous Glass

MIL-P-19644A Plastic Foam, Molded Polystyrene  
MIL-P-0019644B (Expanded Bead Type)  
(OS)

MIL-C-23734(1) Cushioning Material Cellulosic,  
Treated, Free Flow, Tubular

MIL-C-26296 Cushioning Material, Packaging,  
Synthetic Fibers

MIL-P-26514A Polyurethane Foam, Rigid and  
Elastic, for Packaging

MIL-C-26861A(1) Cushioning Material, Resilient  
(USAF) Type, General

MIL-C-26862A Fiberboard, Solid, Damage,  
(USAF) Multipurpose Cushioning and  
Blocking Applications

MIL-C-40010 Cushioning Material, Polyvinyl  
Chloride Plasticized, Cellular

CUSHIONING (CONTINUED)

MIL-C-46842 Cushioning Material, Unicellular Polyethelene Foam (For Packaging Purposes)

MIL-C-81013(1) Cushioning Materials, Transparent, (AS) Flexible, Cellular, Plastic Film, For Packaging Applications

DESICCANTS

MIL-D-3464D Desiccants, Activated, Bagged, Packaging Use and Static Dehumidification

MIL-D-3716A(2) Desiccants, Activated, for Dynamic Dehumidification

DRUMS (SEE BARRELS, DRUMS, PAILS, AND KEGS)

EQUIPMENT

MIL-S-4461D Sealing Machines, Heat, Bench and Portable (Temperature, Pressure and Time Controlled)

MIL-D-26847B Degreaser, Vapor Type, Stationary, Spray Attachment, Steam or Electrically Heated

EQUIPMENT (CONTINUED)

MIL-S-22783      Sealing Machines, Electrical  
                         Impulse, (Jaw Type)

MIL-S-43361      Stretching and Sealing Machine,  
                         Steel Strapping Hand

GASKET MATERIAL

MIL-G-6841C      Gasket Material, Tape and Sheet,  
                         Adhesive, Rubber and Cork Composition

MIL-G-12803A(2) Gasket Materials, Nonmetallic

MIL-G-13210      Gaskets, Rubber

MIL-G-20241C      Gasket Material, Wool Felt, Impreg-  
                         nated, Adhesive, Pressure-Sensitive

HYDRAULIC FLUIDS

VV-B-680          Brake Fluid, Automotive

MIL-H-5606B      Hydraulic Fluid, Petroleum Base,  
                         Aircraft, Missile and Ordnance

MIL-H-6083C      Hydraulic Fluid, Petroleum Base,  
                         For Preservation and Testing

MIL-H-7083A      Hydraulic Fluid, Non-Flammable,  
                         Aircraft, Hydrolube

HYDRAULIC FLUIDS (CONTINUED)

MIL-H-8446B(1) Hydraulic Fluid; Non-Petroleum Base,  
Aircraft

MIL-H-13910B Hydraulic Fluid, Non-Petroleum Base,  
Automotive Brake, All Weather

MIL-H-13919A Hydraulic Fluid, Petroleum Base,  
Fire Control

INDICATORS

MIL-I-26860A Indicator, Humidity, Plug, Color  
Change

MS - 20003C Indicator, Humidity, Card, Three-  
Spot Impregnated Areas (Cobaltous  
Chloride)

KEGS (SEE BARRELS, DRUMS, PAILS, AND KEGS)

LUBRICANTS

MIL-L-2105B Lubricating Oil, Gear. Multi-  
Purpose

MIL-L-3503(1) Lubricating Oil, Preservative,  
Light

MIL-G-6711 Graphite, Lubricating

MARKING MATERIALS

|                 |  |
|-----------------|--|
| TT-E-485e       | Enamel, Semi-Gloss, Rust Inhibiting  |
| TT-E-489d       | Enamel, Alkyd, Gloss (For Exterior and Interior Surfaces)                          |
| TT-E-515(2)     | Enamel, Alkyd, Lusterless, Quick Drying  |
| TT-I-558c       | Ink, Marking Stencil, Opaque, for Nonporous Surfaces (Metal, Glass, etc.)          |
| TT-I-559b(2)    | Ink, Marking Stencil, Opaque for Porous Surfaces (Wood Boxes, Fiber Cartons, etc.) |
| TT-L-20         | Lacquer, Camouflage  |
| TT-P-25c        | Primer, Paint, Exterior (Undercoat for Wood, Ready Mixed, White and Tints)         |
| TT-V-121e       | Varnish, Spar, Water-Resisting   |
| PPP-P-700a(1)   | Protector, Packing List  |
| MIL-D-8635B(1)  | Decals, For Use On Interior Surfaces   |
| MIL-P-13983C(1) | Paint, Temporary, Lusterless, Gasoline Removable                                   |

MARKING MATERIALS (CONTINUED)

MIL-C-175G4B(2) Coating Compound, Acrylic, Clear

MIL-P-52108 Paint, Water Emulsion Type for  
Stenciling and Obliterating

MISCELLANEOUS PACKAGING MATERIALS

MIL-E-6060B Envelopes, Packaging, Water-  
Vaporproof, Flexible

MIL-W-10434B(2) Windows, Protective Envelope  
(For Installation in Water-  
Vaporproof Barriers)

NAILS (SEE PACKAGING HARDWARE)

PACKAGING HARDWARE

FF-B-561b Bolts, Lag

FF-B-571a(1) Bolts, Nuts, Studs and Tap Rivets  
(and Material for Same)

FF-B-575b Bolts, Hexagon and Square

FF-B-584c(2) Bolts, Finned Neck; Key Head;  
Machine, Ribbed Neck; Square Neck;  
Tee Head

FF-N-103c Nails, (Small) and Tacks; Cut

PACKAGING HARDWARE (CONTINUED)

FF-N-105a(1) Nails, Wire, Brads and Staples  
QQ-S-781e(4) Steel Strapping Flat  
QQ-S-790b(1) Steel Strapping, Round (Base and  
Zinc Coated)  
PPP-S-760a(2) Strapping, Nonmetallic, (and  
Connectors)

PALLTS

MIL-P-3938B(2) Pallets, Materials Handling, Hard-  
wood, Stringer Construction 4-Way  
(Partial)  
MIL-S-9968 Skids, Aluminum, Demountable,  
Reusable, for Maximum Loads not  
Exceeding 50,000 Pounds  
MIL-P-15011F Pallets, Materials Handling,  
Hardwood Post Construction, 4-Way  
MIL-P-26342 Pallet, Box, Fiberboard, Expendable,  
(USAF) for Air Shipment  
MIL-P-26966C Pallet, Material Handling, Light-  
(USAF) weight, Air Cargo

PRESERVATIVES (SEE ALSO SECTION III "P-TYPE  
PRESERVATIVES"

VV-L-800 Lubricating Oil, General Purpose,  
Preservative (Water Displacing,  
Low Temperature)

MIL-L-3150A(1) Lubricating Oil, Preservative,  
Medium

MIL-L-3503 Lubricating Oil, Preservative,  
Light

MIL-L-6085A(2) Lubricating Oil, Instrument, Air-  
craft, Low Volatility

MIL-C-6529C(2) Corrosion Preventive Aircraft  
Engine

MIL-C-1122R(1) Grease, Aircraft, General Purpose

MIL-C-10382B Corrosion Preventive Petrolatum,  
Spraying Application, for Food  
Handling Machinery and Equipment

MIL-G-10924B Grease, Automotive and Artillery

MIL-C-11796R Corrosion Preventive-Compound,  
Petrolatum, Hot Application

MIL-C-16173D(1) Corrosion Preventive Compound,  
Solvent Cutback, Cold Application

PRESERVATIVES (SEE ALSO SECTION III "P-TYPE  
PRESERVATIVES" (CONTINUED))

|              |   |
|--------------|---|
| MIL-C-18487  | Compound Gun Slushing   |
| MIL-L-21260  | Lubricating Oil, Internal-Combustion<br>Engine, Preservative  |
| MIL-G-23827A | Grease, Aircraft and Instrument<br>Gear and Actuator Screw    |
| MIL-P-46046A | Preservative Fluid, Automotive Brake<br>System and Components |

STRAPPING (SEE PACKAGING HARDWARE)

TAPES

|  |   |
|--|---|
| L-T-90c(1)<br>Int. Amd. 2<br>(GSA-FSS) | Tape, Pressure-Sensitive, Adhesive,<br>(Cellophane and Cellulose Acetate) |
| L-T-99a                                | Tape, Pressure-Sensitive, Adhesive,<br>Identification (Acetate Fibers)    |
| JU-T-101e                              | Tape, Gummed, Mending and Rein-<br>forcing (Paper & Cloth)                |
| UU-T-106c                              | Tape, Pressure-Sensitive Adhesive,<br>Masking, Paper                      |
| PPP-T-42a                              | Tape, Pressure-Sensitive Adhesive<br>(General Packaging Application)      |
| PPP-T-45b<br>Amd. 1                    | Tape, Gummed, Paper, Reinforced, and<br>Plain for Sealing and Securing    |
| PPP-T-60b(2)                           | Tape, Pressure-Sensitive Adhesive,<br>Waterproof, for Packaging           |

TAPES (CONTINUED)

PPP-T-76b Tape, Pressure-Sensitive Adhesive,  
Paper, Water Resistant (for Carton  
Sealing)

PPP-T-97c(2) Tape, Pressure-Sensitive Adhesive,  
Filament Reinforced

MIL-T-22085A(1) Tape, Pressure-Sensitive Adhesive,  
(AS) Notice 1 Preservation and Sealing

MIL-T-43036A(2) Tape, Pressure-Sensitive Adhesive,  
Plastic Film, Filament Reinforced  
(for Sealing Fiber Containers and  
Cans)

MIL-T-43115(M) Tape, Pressure-Sensitive Adhesive,  
for Preservation and Sealing

VOLATILE CORROSION INHIBITORS

MIL-i-8574C Inhibitors, Corrosion, Volatile,  
Utilization of

MIL-F-22019B Film, Transparent, Flexible,  
Sealable, Volatile Corrosion  
Inhibitor Treated

MIL-F-22020B Bags, Transparent, Flexible,  
Sealable, Volatile Corrosion  
Inhibitor Treated

VOLATILE CORROSION INHIBITORS

MIL-I-22110A(1) Inhibitors, Corrosion, Volatile  
Crystalline

MIL-I-23310 Inhibitors, Corrosion, Volatile,  
Oil Type

MIL-B-40028 Bags, Barrier, With VCI Treated  
Linera

MIL-L-46002(i) Lubricating Oil, Contact and Volatile  
Corrosion Inhibited

WRAPPING MATERIALS (OTHER THAN BARRIER MATERIALS)

UU-P-134c Paper, Wrapping, Wet-Waxed

UU-P-268e(2) Paper, Kraft Wrapping

UU-F-553b Paper, Wrapping, Tissue

MIL-P-130C(1) Paper, Wrapping, Laminated and  
Creped

MIL-P-13988 Paper, Lags, Tissue, Antitarnish,  
Wrapping

MIL-P-17667B Paper, Wrapping, Chemically  
Neutral (Non-Corrosive)

VII

MISCELLANEOUS PUBLICATIONS

- MIL-P-116E(3) Preservation, Methods Of  
Int. And. i (EL)
- MIL-S-207B(1) Sulphuric Acid Electrolyte:  
Packaging, Packing, and Marking  
for Shipment and Storage of
- MIL-P-208C Packaging and Packing for Shipment  
and Storage of Batteries, Storage,  
Automotive and Navy Portable
- MIL-B-3149C Baling of Clothing and Equipage
- MIL-P-4861B Packaging, Preformed, Rubber,  
Packing, Packaging Of
- MIL-P-9024D Packaging, Materials Handling and  
(USAF) Transportability, System and System  
Segments, General Specification for
- MIL-M-9950(1) Missile Components; Liquid Oxygen,  
Nitrogen, Gaseous Oxygen, Instru-  
ment Air, Helium and Fuel Handling  
Systems, Cleaning and Packaging  
for Delivery
- MIL-R-45213A(1) Rocket and Missile Systems, Ground  
(M1) Support Equipment, Preparation and  
Packing of General Specification

MISCELLANEOUS PUBLICATIONS (CONTINUED)

MIL-C-46779A Carrier, Guided Missile Equipment,  
(AT) Full-Tracked: XM474E2; Processing  
for Storage and Shipment of

FED-STD-75a Glossary of Packaging Terms

FED-STD-101a Preservation, Packaging and Packing  
(Ch. Not. 5) Materials; Test Procedures

FED-STD-102b Preservation, Packaging and Packing  
Levels

FED-STD-595 Colors  
(Ch. Not. 2)

FED-STD-791A(2) Lubricants, Liquid Fuels, and Related  
Products, Methods of Testing

MIL-STD-105B Sampling Procedures and Tables for  
(Ch. Not. 2) Inspection by Attributes

MIL-STD-129E Marking for Shipment and Storage  
(Ch. Not. 7)

MIL-STD-147A Palletized Unit Loads (40" x 48",  
4-Way Partial and 4-Way Pallets)

MIL-STD-290C(1) Packaging, Packing and Marking of  
Petroleum and Related Products

MISCELLANEOUS PUBLICATIONS (CONTINUED)

|  |   |
|--|---|
| MIL-STD-726B<br>(Ch. Not. 2)   | Packaging Requirements Code   |
| MIL-STD-731  | Quality of Wood Members for Containers and Pallets  |
| MIL-STD-834A<br>(USAF)   | Packaging Data Forms, Instruction for Preparation and Use of  |
| MIL-STD-1186   | Cushioning, Anchoring, Bracing, Blocking, and Waterproofing. with appropriate Test Methods                        |
| H 109  | Quality Control and Reliability Statistical Procedures for Determining Validity of Supplies Attributes Inspection |
| MIL-HDBK-696   | Plastic Coating Compounds, Stripable, Hot and Cold Dip  |
| TM 10-252  | Loading Insert Containers and Cargo Transporters  |
| DOD 4500.32-R<br>Ch. 1   | Military Standard Transportation and Movement Procedures (MILSTAMP)   |
| DSAM 4145.2<br>TM 38-230/<br>NAVEXOS P-938<br>AFP 71-1-6/<br>MCO P4030.21/<br>(Ch. Not. 4) | Preservation, Packaging and Packing of Military Supplies and Equipment. ("The Packaging Manual")                  |
| DSAM 4145.6<br>FM 38-40<br>NAVSANDA P451<br>AFP 71-1-7<br>MCO P4030.24                     | Packaging Administration  |

MISCELLANEOUS PUBLICATIONS (CONTINUED)

|   |   |
|---|---|
| TM 55-601   | Troop Movements Guide   |
| TM 743-200/<br>Change 1-16<br>NAVSANDA Pub 284/<br>AFM 67-3<br>NAVMC 1101/<br>DSAM 4145.1/<br>(Change 15) | Storage and Materials Handling  |
| SB 38-100   | Preservation, Packaging, and<br>Packing Materials, Supplies and<br>Equipment Used by the Army |
| DSAR 4145.7   | Packaging, Packing and Marking<br>of DSA Items of Supply                                      |
| AR 55-35 Ci   | Utilization of Cargo Trailers in<br>Roll-On/Roll-Off Service                                  |
| AR 700-15<br>Change 1   | Preservation, Packaging and Packing   |
| AR 700-58<br>NAVSUP PUB 378/<br>AFR 71-4<br>MCO P4030.29<br>DSAR 4145.8                                   | Report of Packaging and Handling<br>Deficiencies  |
| AR 725-50<br>Change 1-16  | Requisitioning, Receipt and Issue<br>System (MILSTRIP)  |
| AR 740-20   | Preparation for Shipment  |

MISCELLANEOUS PUBLICATIONS (CONTINUED)

AMCR 350-4 Utilization and Operation of Joint  
Military Packaging Training Center

AMCR 746-2 Marking and Packing of Supplies and  
Equipment, Packaging of Army Mate-  
rial

AMCR 746-5 Marking and Packing of Supplies  
Change 1 and Equipment, Use of Standard Plywood  
Consolidation Containers in Conex  
Shipments to Southeast Asia

AMCF 706-121 Packaging and Pack Engineering  
Handbook

AFR 71-6 Preservation, Packaging, Packing,  
and Marking Policy

BUSANDA 4030.17 Preservation, Packaging, Packing  
and Marking, Navy Policy For

MCO 4030.14C Marine Corps Policy and Basic  
Operating Procedures for Preserva-  
tion, Packaging, Packing, and  
Marking of Materials

T.O. 00-25-203 Standards and Guidelines for the  
Design and Operation of Clean  
Rooms and Clean Work Stations

T.O. 42C-1-11 Cleaning and Inspection Procedures  
for Rocket Propellant Systems  
(Liquid and Gaseous)

MISCELLANEOUS PUBLICATIONS (CONTINUED)

|   |  |
|---|--|
| ATB No. 37<br>CAB No. 82<br>Rev 1-57                  | Official Air Transport Restricted<br>Articles Tariff No. 6D  |
| ICC 16  | Agent T. C. George's Water Carrier<br>Tariff No. 16  |
| ICC 19  | Agent T. C. George's Tariff No. 19:<br>Transportation of Explosives and<br>Other Dangerous Articles by Land<br>and Water in Rail Freight Service<br>and by Motor Vehicle (high Way)<br>and Water |
| ICC-8200/<br>Sup 43, 44                               | Official Express Classification No. 36<br>(RLA Express rules)  |
| MF ICC 7<br>FMC 6, Sup 7,<br>9, 10, 11, 12,<br>13, 14 | National Motor Freight Classifi-<br>cation A-E   |
| MF ICC-13<br>FMC 11/<br>Sup 3, 4, 5                   | Motor Carriers' Explosives and<br>Dangerous Articles Tariff No. 12   |
| ASTM-D-775-61   | Methods of Prep Test for Shipping<br>Containers  |
| ASTM-D-880-63T  | Incline Impact Test for Shipping<br>Containers   |

MISCELLANEOUS PUBLICATIONS (CONTINUED)

- ASTM-D-895-62T Method of Test for Watervapor  
Permeability of Packages
- AAK Rules Regulating the Safe Loading  
of Freight in Closed Cars, Pamphlet  
No. 14
- AAR General Rules for Loading Commodi-  
ties in Closed Cars, Circular No.  
42-C
- AAR Rules Governing the Loading of  
Commodities on Open Top Cars,  
Section 1-6

VIII

SPECIAL SUBJECT PUBLICATIONS

SHIPMENT AND STORAGE OF HOUSEHOLD GOODS

|   |   |
|---|---|
| PPP-B-580a  | Boxes, Wood, household Goods  |
| MIL-P-22084<br>(S&A)  | Preparation of Household Goods and<br>Personal Effects for Local Transfer   |
| MIL-STD-212C(1)   | Preparation of Household Goods for<br>Shipment and Storage and Related<br>Services  |
| AR 55-356<br>NAV SUP PUB 455<br>AFR 75-17<br>MCO P4050.34A<br>DSAR 4500.1                           | Uncrated Household Goods Traffic  |
| DSAR 4500.2/<br>AR 55-48/<br>AFR 75-35/<br>MCO P4600.12/  | house Trailer   |
| DOD 4145.16-R<br>AR 743-455<br>NAVSANDA PUB/<br>297/<br>AFR 67-61A/<br>NAVMC 1133/<br>(Rev 1-60) C1 | Department of Defense Commercial<br>Warehousing and Related Services<br>for Household Goods of Military<br>and Civilian Personnel |

EQUIPMENT PRESERVATION FOR SHIPMENT AND STORAGE

|                           |  |
|---------------------------|--|
| 0-A-548a(1)<br>0-A-00548b | Antifreeze, Ethylene Glycol,<br>Inhibited  |
| 0-L-760b(2)               | Ethyl Alcohol, Denatured Alcohol<br>and Proprietary Solvent  |
| 0-I-490A                  | Inhibitor, Corrosion, Liquid<br>Cooling Systems  |
| 0-S-576c                  | Sodium Bicarbonate, Technical  |
| PT-P-664b                 | Primer Coating, Synthetic,<br>Rust-Inhibiting, Lacquer-Resisting   |
| VV-F-800                  | Fuel Oil, Diesel   |
| JJJ-C-86(1)               | Castor Oil, Technical  |
| NNN-P-40                  | Paper, Lens Issue  |
| MIL-G-762b                | Graders, Road, Packaging Of  |
| MIL-I-3351B(1)            | Tractor, Full Tracked, Low Speed;<br>Tractor, Wheeled, Agriculture;<br>and Tractor, Wheeled, Industrial,<br>and their Attachments, Packaging<br>Of |
| MIL-E-10062b(1)           | Engines: Preparation for Shipment<br>and Storage Of  |

EQUIPMENT PRESERVATION FOR SHIPMENT AND STORAGE  
(CONTINUED)

MIL-C-3580B(2) Cranes and Crane-Shovels, Truck,  
Int. Amd. 3(MO) Crawler, and Wheel Mounted, Full  
Revolving and Their Attachments,  
Packaging Of

MIL-C-3600A(1) Compressors, Air and Gas (Except  
Oxygen), Packaging Of

MIL-C-10597C(1) Cleaning Compound With Conditioner  
and Inhibitor for Engine Cooling  
Systems

MIL-C-11755A Compound, Antifreeze, Arctic Type

MIL-O-12841A On Van Equipment (OVE) for Military  
(MO) Vehicles, Packaging Of

MIL-P-14232C Parts, Equipment and Tools for  
Amt. 2 (AT) Ordnance Materiel, Packaging Of

MIL-T-45052 Tank, Combat, Full-TrackeD, 90mm.  
(MO) Gun, M48A2: Preparation for Storage  
and Shipment Of

MIL-T-45309B Tank, Combat, Full-TrackeD, 105mm.  
Gun, M60 and M60E1; Processing  
for Storage and Shipment Of

EQUIPMENT PRESERVATION FOR SHIPMENT AND STORAGE  
(CONTINUED)

|                                |   |
|--------------------------------|---|
| MIL-STD-162C<br>Ch. Not. 1     | Materials Handling Equipment<br>Preparation for Shipment, Storage,<br>Cyclic Maintenance, Routine Testing<br>and Process                      |
| MIL-STD-171B<br>(MR) Charge 1  | Finishing of Metal and Wood Surfaces  |
| MIL-STD-281A<br>(Ch. Notice 1) | Automobiles, Trucks, Truck-Tractor,<br>Trailers and Trailer Dollies;<br>Preservation and Packaging Of   |
| MIL-STD-642F                   | Identification Marking of Admin-<br>istrative, Combat and Tactical<br>Transport Vehicles  |
| TB-9-299/1<br>Ch 1-3           | Processing of Unboxed, Self-<br>Propelled and Towed Class II<br>Ordnance General Supplies and<br>Related Material for Shipment and<br>Storage |
| TB 740-93-2                    | Preservation of USAMEC Mechanical<br>Equipment for Shipment and Storage   |
| T.O. 2J-1-18<br>Change 10      | Corrosion Control of Gas Turbine<br>Engines   |

EQUIPMENT PRESERVATION FOR SHIPMENT AND STORAGE  
(CONTINUED)

T.O. 35G1-3-11 Handbook, Operation and Service  
Instructions. Type MA-2 Multi-  
Purpose Unit

T.O. 35E9-10-1 Air-Conditioner, Type MA-7

T.O. 36G1-2-2- Generating and Charging Plant,  
11 Type A1-A

T.O. 36A10-3- Aircraft Towing Tractor, Type  
5-1 MB-2

T.O. 36A12-8- Crash Fire and Rescue Truck,  
12-1 Type O-11B

PREPARATION OF FREIGHT FOR AIR SHIPMENT

MIL-S-4473C Shielding of Magnetron Tubes and  
Magnets and Components Containing  
Magnetron Tubes or Magnets for Air  
Shipment

MIL-A-8421B Air Transportability Requirements,  
(USAF) General Specification For

MIL-M-19590C Marking of Commodities and  
Containers to Indicate Radio-  
active Materials

PREPARATION OF FREIGHT FOR AIR SHIPMENT (CONTINUED)

MIL-P-22562 Pallet, Materials Handling  
(MC)

MIL-A-25175A Air Transport, Nontactical,  
Packing For

MIL-P-4318 (GL) Platform Components, Air Delivery,  
(Amend 2) Modular (Dual Rail System) Type II

AR 705-3 DOD Engineering for Transport-  
NAVMATINST/ ability Program  
4600.5A  
AFR 80-18/  
MCO 4610.14/

DSAM 4145.3/ Packaging and Handling of Dangerous  
Change 3/ Materials for Transportation by  
AFM 71-4/ Military Aircraft  
TM 38-250/  
NAVWEPS 15-03-500/  
MCO P4030.19/

JSAM 4145.7 Preparation of Freight For Air  
TM 38-236 Shipment  
NAVAIR 15-01-3  
AFP 71-8  
MCO P4030.30

PREPARATION OF FREIGHT FOR AIR SHIPMENT (CONTINUED)

TM 10-500/      Air Drop of Supplies and Equipment,  
Change 1/      General  
T.O. 36A5-1/  
301/

TM 10-500-91-1/ Air Drop of Supplies and Equipment;  
T.O. 13C7-8-31 Rigging Engineer Tool Outfit,  
Pioneer, Portable, Electrical  
Tools With Accompanying Load on  
6,000 Pound Cargo Platform (Honey  
Comb)

T.O. 00-85-8      Interior Blocking, Bracing, and  
Cushioning

T.O. 00-85-9      Preparation of Freight for Air  
Shipment

T.O. 1C-124B-9      Cargo Loading C-124

T.O. 1C-130A-9      Cargo Loading C-130

T.O. 1C-133A-9      Loading Instructions C-133  
Change 18

T.O. 1C-141-9      Cargo Loading C-141  
Change 15

T.O. 13C4-1-1      General Principles of Packaging  
and Rigging Air Delivery Con-  
tainers

PREPARATION OF FREIGHT FOR AIR SHIPMENT (CONTINUED)

AFM 67-1            USAF Supply Manual, Vol 1, Part 4  
Amd. 30

AFLCM 76-1A        LOGAIR Traffic Manual

PRESERVATION FOR SHIPMENT OR STORAGE OF FIXED-  
AND ROTARY-WING AIRCRAFT

G-C-303b            Chromium Trioxide, Technical  
(Chromic Acid)

TT-N-95a            Naptha, Aliphatic

TT-P-666B           Primer Coating, Zinc Yellow, for  
Aluminum and Magnesium Surfaces

MIL-C-4339C        Corrosion Preventive, Soluble Oil,  
for Water Injection Systems

MIL-B-5612A        Brush, Cleaning, Aircraft

MIL-L-6081C(2)    Lubricating, Oil Jet Engine

MIL-C-8188C        Corrosion Preventive Oil, Gas  
Turbine Engine, Aircraft,  
Synthetic Base

PRESERVATION FOR SHIPMENT OR STORAGE OF FIXED-  
AND ROTARY-WING AIRCRAFT (CONTINUED)

|  |   |
|--|---|
| MIL-C-18187A                           | Coating, Protective, Application to Fabric Surfaces of Aircraft |
| MIL-W-18723C                           | Wax, Aircraft, Waterproof, Solvent Type                         |
| MIL-C-25769E<br>MIL-C-0025769F<br>(84) | Cleaning Compound, Aircraft, Surface, Alkaline Waterbase        |
| TM 1-L19-S<br>Change 1                 | Preparation for Shipment of L-19 Aircraft                       |
| TM 1-UH1-S                             | Preparation for Shipment of UH-1A and UH-1B                     |
| TM 1-L20-S                             | Preparation for Shipment of L-20 Aircraft                       |
| TM 55-1520-210-<br>10 - Ch 1           | Operators' Manual: Army Model UH-1D Helicopter                  |
| TM 55-1520-210-<br>20                  | Organizational Maintenance Manual: Army Model UH-1D Helicopter  |
| TB AVN 23-65                           | Aircraft Components Requiring Maintenance and Historical Data   |

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FORMULAS

Formula for Determining Barrier Size.

1. Measure length of the item or container.
2. Measure width of the item or container.
3. Measure depth of the item or container.
  - a. Length of barrier equals 2 times width, plus 2 times depth, plus 5 inches (or 3 inches).
  - b. Width of barrier equals length, plus width, plus 3 inches (or 5 inches).

Note. - Multiply totals of a. and b. together; divide by 144 to arrive at number of square feet displacement within the barrier.

Formula for Determining Volume of Round Rigid Metal Container (Sealed)  $V = \pi r^2 h$

Measure diameter of container (Example: 12 inches). Measure inside height of container (Example: 30 inches).

FORMULAS (CONTINUED)

- a. After diameter has been determined (Example: 12 inches), multiply 1/2 the diameter times the other half. (Example: 6 inches times 6 inches equals 36 square inches).
- b. Multiply answer (Example: 36 inches) times 3.1416 (Example: 36 inches times 3.1416 equals 113.0976 square inches or 114 square inches).
- c. Multiply answer of b. (Example: 114 square inches times height of container (Example: 20 inches) thus 20 inches times 114 square inches equals 2280 cubic inches).
- d. To convert cubic inches into cubic feet, divide 1728 into answer (Example: 2280 cubic inches) thus 2280 divided by 1728 equals 1.3 cubic feet).

Desiccant Formula I: To find units of desiccants for use within barrier which is other than a sealed rigid metal barrier:  $U = CA + XD$

General:

The proper amount of desiccant in a package is very important and should never be guessed. Current directives call for desiccant in units instead of ounces or pounds.

Desiccant Formula I (Continued)

U = Number of units of desiccant to be used.

C = 0.011 when area of barrier is given in square inches.

C = 1.6 when area of barrier is given in square feet.

A = Area of barrier in square inches or square feet.

X = A numerical factor, varying with the type of dunnage used:

X = 8 for Hair, felt, cellulosic material, wood, and other materials not shown below.

X = 6 for Bound fiber (animal hair, synthetic fiber or vegetable fiber bound with rubber).

X = 2 for Glass fiber.

X = 0.5(½) for Synthetic foams and rubber.

D = Pounds of dunnage other than metal within barrier.

Desiccant Formula I (Continued)

- a. Multiply the factor of .011 or 1.6 times the number of square inches or square feet, respectively.
- b. To determine amount of desiccant required for each pound of cushioning or blocking (dunnage) used by Type, see X. Multiply number of pounds times applicable factor. (Example: 4 pounds wood) thus 4 times 8 equals 32 units).
- c. Add unit totals of a. and b. together. This answer will equal the total number units of desiccant required within the package.

Desiccant Formula II: To find units of desiccant for use within a sealed rigid metal container:

$$U = KV + XD$$

U = Number of units of desiccant to be used.

K = 0.0007 when volume is given in cubic inches

K = 1.2 when volume is given in cubic feet.

V = Volume within carrier in cubic inches or cubic feet.

Desiccant Formula II: (Continued)

X = A numerical factor, varying with the type of dunnage used. (See Formula I.)

D = Pounds of dunnage other than metal within barrier.

- a. Multiply number of cubic feet of container (Example: 1.3) times the factor of 1.2 (0.0007 if answer is cubic inches). Thus  $1.3 \times 1.2 = 1.56$  units or  $2280 \times 0.0007 = 1.59$  units). This answer is the number of units required for the container itself.
- b. To determine amount of desiccant required for each pound of cushioning or blocking (dunnage) used by type, see X, Formula I. Multiply number of pounds times applicable factor (Example: 4 pounds wood, thus  $4 \times 8 = 32$  units).
- c. Add unit total of a. and b. together (Example:  $1.56$  plus  $32 = 33.56$  or 34 units). This answer will equal the total number of units of desiccant required within the packages.

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