

AD-667388

JOINT MILITARY PACKAGING TRAINING CENTER

**MILITARY PACKAGING
REFERENCE GUIDE**

TO

SPECIFICATIONS - MATERIALS
PROCESSES - PROCEDURES
AND METHODS

This document has been approved
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 TECHNICAL SERVICES	NEW ARMY COMMANDS AND ACTIVITIES
CODE	CODE
CM Chemical Corp	MU Munitions Command
CE Corps of Engineers	Surgeon General
	* See below
MD Army Medical Corps	GL US Army Natick Laboratories
OR Ordnance Corps	EL Electronics Command
QM Quartermaster Corps	MO Mobility Command
SC Signal Corps	WC Weapons Command
TC Transportation Corps	MR Materials 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 Command
NAVORDSYSCOM	Naval Ordnance Systems Command
NAVFACENCOM	Naval Facilities Engineering 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 Office, Quality Control Branch
25	AFLC, MCSP	Air Force Provisioning Policy and Procedures Office
26	AFLC, MCSI	Cataloging and Standardi- zation Division
28	AFLC, MCH	Staff Chaplain
43	AFLC, MCTE	Packaging and Materials Handling Division
69	AFLC, SGTE	Air Force Packaging Evaluation Agency
70	OJAMA, OONSS	Ogden Air Materiel Area
71	OCAMA, OCNSB	Oklahoma City Air Materiel Area
79	SAAMA, SAWRCS	San Antonio Air Materiel 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 (DSOC-3)	USAF Security Service, 6936 Communications Security 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
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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-236b, 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 Preven-
tive 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 IIf - 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 Substance 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), Polyethylene

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-555(2)	Boxes, Paperboard, Metal Stayed (Including Stay Material)
PPP-B-676C	Boxes, Set-Up
MIL-B-38721 USAF	Boxes, Consolidation, Fiberboard
MIL-B-40642(2)	Box, Fiberboard, Corrugated, Triple-Wall, 1,000 lb. Capacity
MIL-B-43014A (MO)	Boxes, Water-Resistant, Paperboard, Folding, Set-Up and Metal Stayed
MIL-B-43291 (GL)	Boxes, Fiberboard, Corrugated, Doublewall, Weather-Resistant

BOXES - WOOD AND METAL

PPP-B-576c	Box, Wood, Cleated Veneer, Paper- 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 Supp 5 Steam Cleaning

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 (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 Int. Amd. 3(69) 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, Dunnage,
(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)

PALLETS

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 Engine, Preservative
MIL-G-23827A	Grease, Aircraft and Instrument Gear and Actuator Screw
MIL-P-46046A	Preservative Fluid, Automotive Brake System and Components

STRAPPING (SEE PACKAGING HARDWARE)

TAPES

L-T-90c(1) Int. Amd. 2 (GSA-FSS)	Tape, Pressure-Sensitive, Adhesive, (Cellophane and Cellulose Acetate)
L-T-99a	Tape, Pressure-Sensitive, Adhesive, Identification (Acetate Fibers)
JU-T-101e	Tape, Gummed, Mending and Rein- forcing (Paper & Cloth)
UU-T-106c	Tape, Pressure-Sensitive Adhesive, Masking, Paper
PPP-T-42a	Tape, Pressure-Sensitive Adhesive (General Packaging Application)
PPP-T-45b Amd. 1	Tape, Gummed, Paper, Reinforced, and Plain for Sealing and Securing
PPP-T-60b(2)	Tape, Pressure-Sensitive Adhesive, 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 (Ch. Not. 2)	Packaging Requirements Code
MIL-STD-731	Quality of Wood Members for Containers and Pallets
MIL-STD-834A (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 Ch. 1	Military Standard Transportation and Movement Procedures (MILSTAMP)
DSAM 4145.2 TM 38-230/ NAVEXOS P-938 AFP 71-1-6/ MCO P4030.21/ (Ch. Not. 4)	Preservation, Packaging and Packing of Military Supplies and Equipment. ("The Packaging Manual")
DSAM 4145.6 FM 38-40 NAVSANDA P451 AFP 71-1-7 MCO P4030.24	Packaging Administration

MISCELLANEOUS PUBLICATIONS (CONTINUED)

TM 55-601	Troop Movements Guide
TM 743-200/ Change 1-16 NAVSANDA Pub 284/ AFM 67-3 NAVMC 1101/ DSAM 4145.1/ (Change 15)	Storage and Materials Handling
SB 38-100	Preservation, Packaging, and Packing Materials, Supplies and Equipment Used by the Army
DSAR 4145.7	Packaging, Packing and Marking of DSA Items of Supply
AR 55-35 Ci	Utilization of Cargo Trailers in Roll-On/Roll-Off Service
AR 700-15 Change 1	Preservation, Packaging and Packing
AR 700-58 NAVSUP PUB 378/ AFR 71-4 MCO P4030.29 DSAR 4145.8	Report of Packaging and Handling Deficiencies
AR 725-50 Change 1-16	Requisitioning, Receipt and Issue 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 CAB No. 82 Rev 1-57	Official Air Transport Restricted Articles Tariff No. 6D
ICC 16	Agent T. C. George's Water Carrier Tariff No. 16
ICC 19	Agent T. C. George's Tariff No. 19: Transportation of Explosives and Other Dangerous Articles by Land and Water in Rail Freight Service and by Motor Vehicle (high Way) and Water
ICC-8200/ Sup 43, 44	Official Express Classification No. 36 (RLA Express rules)
MF ICC 7 FMC 6, Sup 7, 9, 10, 11, 12, 13, 14	National Motor Freight Classifi- cation A-E
MF ICC-13 FMC 11/ Sup 3, 4, 5	Motor Carriers' Explosives and Dangerous Articles Tariff No. 12
ASTM-D-775-61	Methods of Prep Test for Shipping Containers
ASTM-D-880-63T	Incline Impact Test for Shipping 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 (S&A)	Preparation of Household Goods and Personal Effects for Local Transfer
MIL-STD-212C(1)	Preparation of Household Goods for Shipment and Storage and Related Services
AR 55-356 NAV SUP PUB 455 AFR 75-17 MCO P4050.34A DSAR 4500.1	Uncrated Household Goods Traffic
DSAR 4500.2/ AR 55-48/ AFR 75-35/ MCO P4600.12/	house Trailer
DOD 4145.16-R AR 743-455 NAVSANDA PUB/ 297/ AFR 67-61A/ NAVMC 1133/ (Rev 1-60) C1	Department of Defense Commercial Warehousing and Related Services for Household Goods of Military and Civilian Personnel

EQUIPMENT PRESERVATION FOR SHIPMENT AND STORAGE

0-A-548a(1) 0-A-00548b	Antifreeze, Ethylene Glycol, Inhibited
0-L-760b(2)	Ethyl Alcohol, Denatured Alcohol and Proprietary Solvent
0-I-490A	Inhibitor, Corrosion, Liquid Cooling Systems
0-S-576c	Sodium Bicarbonate, Technical
PT-P-664b	Primer Coating, Synthetic, 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; Tractor, Wheeled, Agriculture; and Tractor, Wheeled, Industrial, and their Attachments, Packaging Of
MIL-E-10062b(1)	Engines: Preparation for Shipment 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 Ch. Not. 1	Materials Handling Equipment Preparation for Shipment, Storage, Cyclic Maintenance, Routine Testing and Process
MIL-STD-171B (MR) Charge 1	Finishing of Metal and Wood Surfaces
MIL-STD-281A (Ch. Notice 1)	Automobiles, Trucks, Truck-Tractor, Trailers and Trailer Dollies; Preservation and Packaging Of
MIL-STD-642F	Identification Marking of Admin- istrative, Combat and Tactical Transport Vehicles
TB-9-299/1 Ch 1-3	Processing of Unboxed, Self- Propelled and Towed Class II Ordnance General Supplies and Related Material for Shipment and Storage
TB 740-93-2	Preservation of USAMEC Mechanical Equipment for Shipment and Storage
T.O. 2J-1-18 Change 10	Corrosion Control of Gas Turbine 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 MIL-C-0025769F (84)	Cleaning Compound, Aircraft, Surface, Alkaline Waterbase
TM 1-L19-S 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- 10 - Ch 1	Operators' Manual: Army Model UH-1D Helicopter
TM 55-1520-210- 20	Organizational Maintenance Manual: Army Model UH-1D Helicopter
TB AVN 23-65	Aircraft Components Requiring Maintenance and Historical Data

IA

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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