



Package Closure Requirements

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Field Operations

<http://phmsa.dot.gov/hazmat>

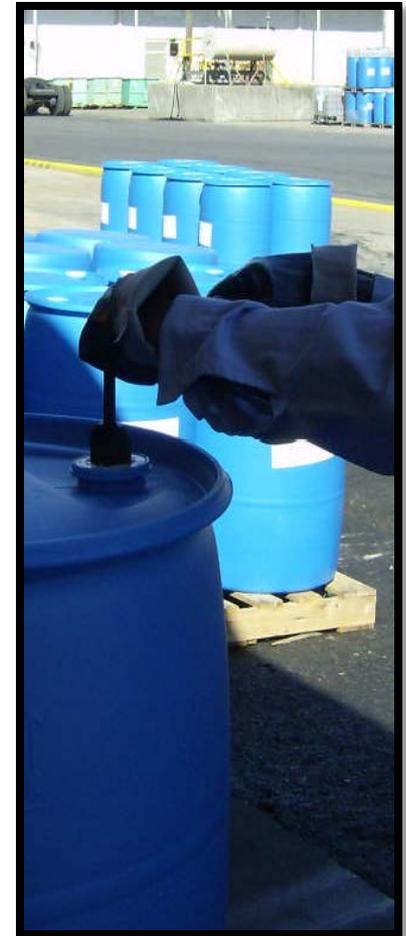
July 2014





Objectives

- **DESCRIBE** UN packaging
- **DESCRIBE** types of UN Packaging
- **DESCRIBE** UN Packaging Testing Requirements
- **DEFINE** the Manufactures Responsibility
- **DESCRIBE** Closure Instructions
- **DEFINE** the Shippers Responsibility
- **DISCUSS** Tools Used for Closure





UN Specification Packaging

- What is UN specification packaging
- What does the UN marking mean
- Why do I need UN specification packaging





Single Packaging

- Steel 1A1, 1A2
- Poly 1H1, 1H2, 3H2
- Fiber 4G





Combination Packaging

- 4G is the most popular
- Two packages tested as one package
- Both packages have separate closure instructions
- Variations
- Not an OVERPACK





1A1 Steel Drum

- Closed Head Steel Drum
- Typically two 2 inch bung openings
- Bungs typically have a set torque value





1A2 Steel Drum

- Open Head Steel Drum
- No typical closure used by all manufactures





1H1 Poly Drum

- Closed Head Poly Drum
- Typically have two 2inch bung openings
- Bungs typically have a set torque value





1H2 Poly Drum

- Open Head Poly Drum
- Closure is typically a tensioner on the drum head band





3H1 Head Jerrican

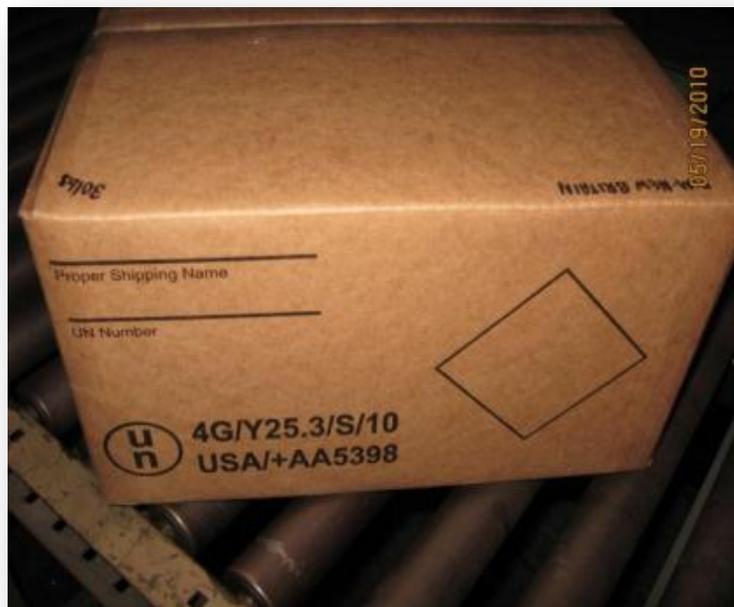
- Polly closed head jerrican
- Typically have a single 2 inch bung opening
- Closure has a set torque value





4G Packaging

- Fiberboard Box
- Typical closure is 2 inch 3m tape
- Can be used as both single and combination packaging





Intermediate Bulk Containers

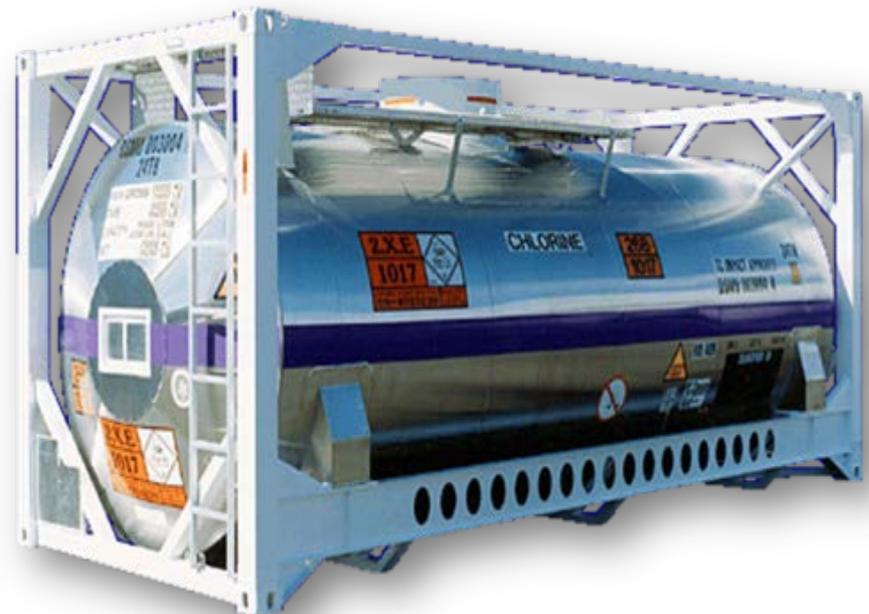
- Commonly referred to as IBCs or Totes
- 31H
- Different closures procedures for all manufactures





Portable Tanks

- DOT 51, 56, 57 & 60 tanks
- IM 101 & 102
- UN Portable Tanks





Why Testing?

- Qualification Testing
- Tests Performed
 - Drop
 - Leakproofness
 - Hydrostatic pressure
 - Stack
 - Vibration Standard
- Tested to conditions “normal” to transportation





Test Report

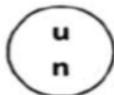
DEPARTMENT OF TRANSPORTATION
PERFORMANCE ORIENTED PACKAGE TESTING CERTIFICATION

Testing performed by:
SOUTHEAST TESTING & ENGINEERING
1325 Suite A-1 Capital Circle, Lawrenceville, GA 30043
(678) 886.4864

Testing performed for:
IMPORT COMPANY
Atlanta, GA 30360
Attn:
Phone:

Tested Item:
CORRUGATED SHIPPER WITH LIGHTERS
LARGE BRIO CLIPPER, 18 INNER CARTONS WITH DISPLAY IN SHIPPER
REPORT NUMBER: SETE 1057
THIS IS A DESIGN QUALIFICATION TEST!
Date Report Printed: August 31, 2011

MARKING: This package was tested at the maximum gross weight of 15.7 kg, or (34.5) lbs,
at Packing Group II level and is qualified to be marked:



4G/Y15.7/S/11/USA/+BZ0602

This package IS certified for shipment by ground! This package IS NOT certified for shipment by air!





Manufactures Responsibility

§178.2(c) *paraphrased*

...the manufacturer...of that packaging must:

specifying the type(s) and dimensions of the closures, including gaskets and any other components needed to ensure that the packaging is capable of successfully passing the applicable performance tests.





Manufactures Responsibility Continued

§178.2(c) *paraphrased*

This information must include any procedures to be followed, including closure instructions for inner packagings and receptacles, to effectively assemble and close the packaging for the purpose of preventing leakage in transportation.

Closure instructions must provide for a consistent and repeatable means of closure that is sufficient to ensure the packaging is closed in the same manner as it was tested.





Closure Notifications

- Types of Notifications:
 - Written
 - Embossed
 - Printed on the Package



Closure Instructions

- SEAL PAINT CANS:**
FOR GROUND SHIPMENTS ONLY, ATTACH 6 CAN CLIPS.
FOR AIR OR GROUND SHIPMENTS, SEAL WITH LOCKING RING.
(LOCKING RING REQUIRED FOR AIR SHIPMENTS)
- IF SHIPPING 1 UNIT, SEAL 1 CAN AND ASSEMBLE SINGLE SHIPMENT CORRUGATED BOX.
IF SHIPPING 2 UNITS, SEAL 2 CANS AND ASSEMBLE 2 PACK CORRUGATED BOX.
IF SHIPPING 4 UNITS, SEAL 4 CANS AND ASSEMBLE 4 PACK CORRUGATED BOX.
- PLACE EPS FOAM CAP INSERTS INTO BASE OF BOX.
- PUT FILLED CANS IN EPS FOAM CAP INSERTS.
- PLACE EPS FOAM CAP INSERTS ON TOP OF CANS.
- TAPE BOX CLOSED WITH 3" REINFORCED GUMMED TAPE OR MINIMUM 2 MIL 2" CLEAR CARTON SEALING TAPE.

ATTENTION

To seal can:
Apply downward pressure to lid until seated completely into grooves on can.
Air: Apply downward pressure to locking ring until contacting top of can.
Ground: Lock clips into grooves on can in an evenly spaced pattern.

Outer flaps meet. Use center seam tape pattern 2.5" min. overlap

SINGLE KIT CONTAINS: ONE SINGLE SHIPMENT CARTON AND 2 EPS FOAM CAPS.
2 PACK KIT CONTAINS: ONE 2 PACK CARTON AND 4 EPS FOAM CAPS.
4 PACK KIT CONTAINS: ONE 4 PACK CARTON AND 8 EPS FOAM CAPS.

***LPS WILL ASSUME RESPONSIBILITY FOR PACKAGE INTEGRITY AND COMPLIANCE WITH ICAQIATA, IMO AND UN STANDARDS, "ONLY", IF ALL PACKAGE COMPONENTS ARE ASSEMBLED AND PURCHASED AS A SINGLE INTEGRATED UNIT.





Closure Instructions

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TOP OPENINGS IN GREIF UN-IBC'S MUST BE FITTED WITH 6" COVERS AND GASKETS SUPPLIED BY GREIF INC. 6" COVERS MUST BE TIGHTENED 1/2 TURN AFTER GASKET CONTACT WITH THE TOP OF THE BOTTLE AND TO AT LEAST 45 FT. LBS TORQUE. FITTINGS IN THE COVER MUST BE TIGHTENED TO A TORQUE OF 20 FT-LBS FOR 2" NPT FITTINGS AND 9 FT-LBS FOR 3/4" BUNGS, IF INSTALLED.

meet UN performance standards. MAUSER is prepared to provide this training in addition to supplying closing instructions. It has been the practice of MAUSER to send closing instructions attached to the shipping documents with each shipment of drums. This document provides specific information on closing MAUSER packagings.

These closing instructions must be given to the individuals responsible for closing the packagings prior to shipment. A hard copy (printed) must be maintained by the filler or offeror for shipment. Copies should be immediately available at the fill lines.

The following tables and text give examples of the parts and closing torque required to prepare the drum or IBC for shipment so

PACKAGING CLOSURE INFORMATION

CLOSURE SPECIFICATIONS FOR TIGHT HEAD DRUMS

PLUGS MUST BE TORQUED TO THE FOLLOWING TORQUE

IBC Type	Gasket Type	Torque
A Bulkdrum® II	EPDM/FKM	70 ft.-lbs.
B MAUSER® SM series 275/330 gallon	EPDM	70 ft.-lbs.
C MAUSER® SM series 275/330 gallon	FKM/FPM	70 ft.-lbs.
D 2" plug in 150 mm lid, vented and solid	EPDM/FKM	20-25 ft.-lbs.
E 56 mm plug in 150 mm lid vented and solid	EPDM/FKM	20-25 ft.-lbs.

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All UN 31HA1 and 31 H01 Composite IBC's 40CFR § 178.707 (a) (5) that are supplied with lids, cages, pallets and service equipment must be closed for shipment using only the components supplied and specified in the design qualification tests for that IBC.

remove this plug. Fitting should be done through the 6" or 3" opening.)

VALVE NUT - 55 FT LBS
 note: caps, valves, and plugs must have gaskets to seal

CLOSURE SPECIFICATIONS FOR IBC'S

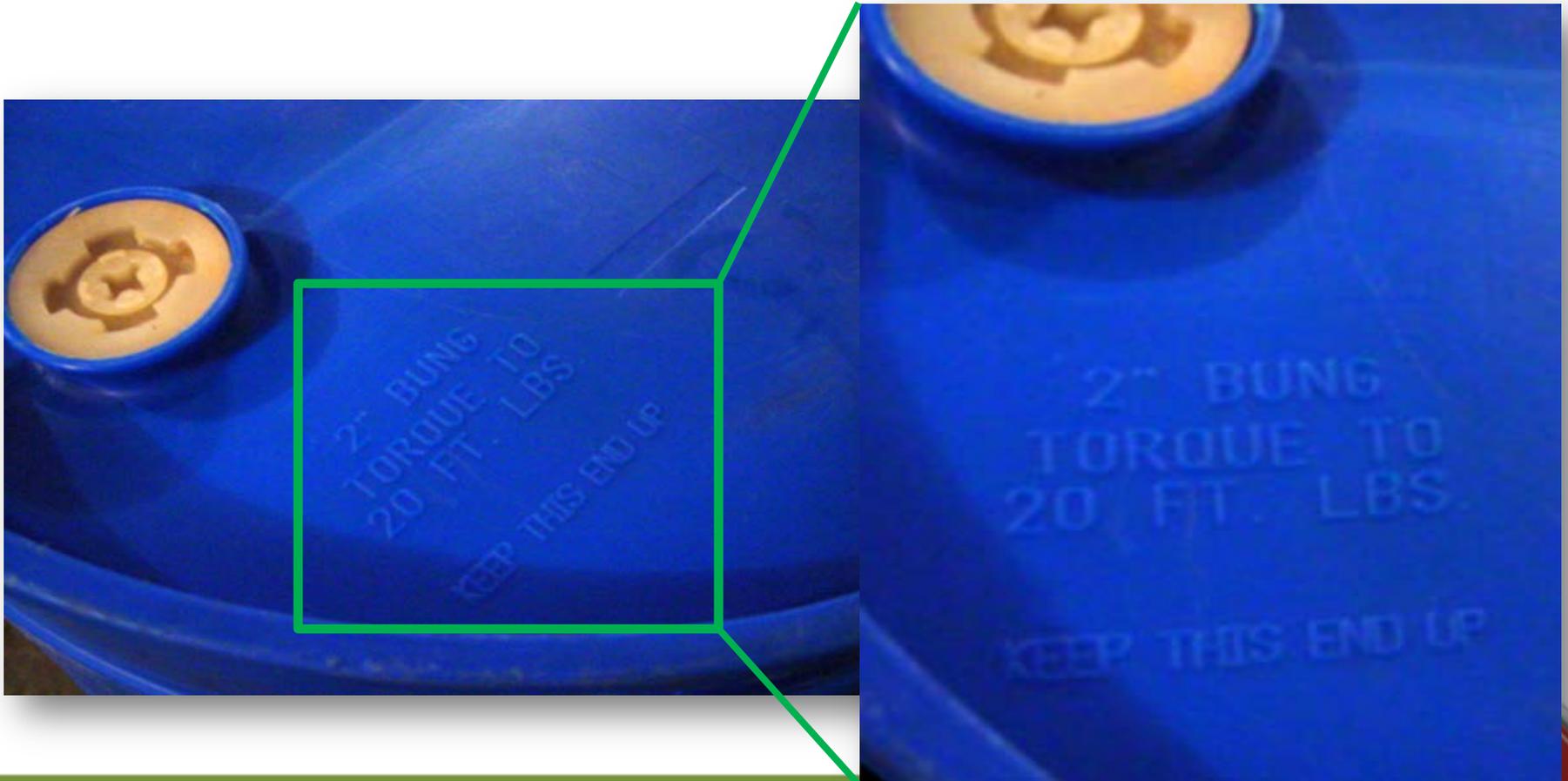
FILL PORT CAP AND VALVE MUST BE TORQUED TO THE FOLLOWING:

6" AND 9" FILL PORT CAP - 75 FT LBS



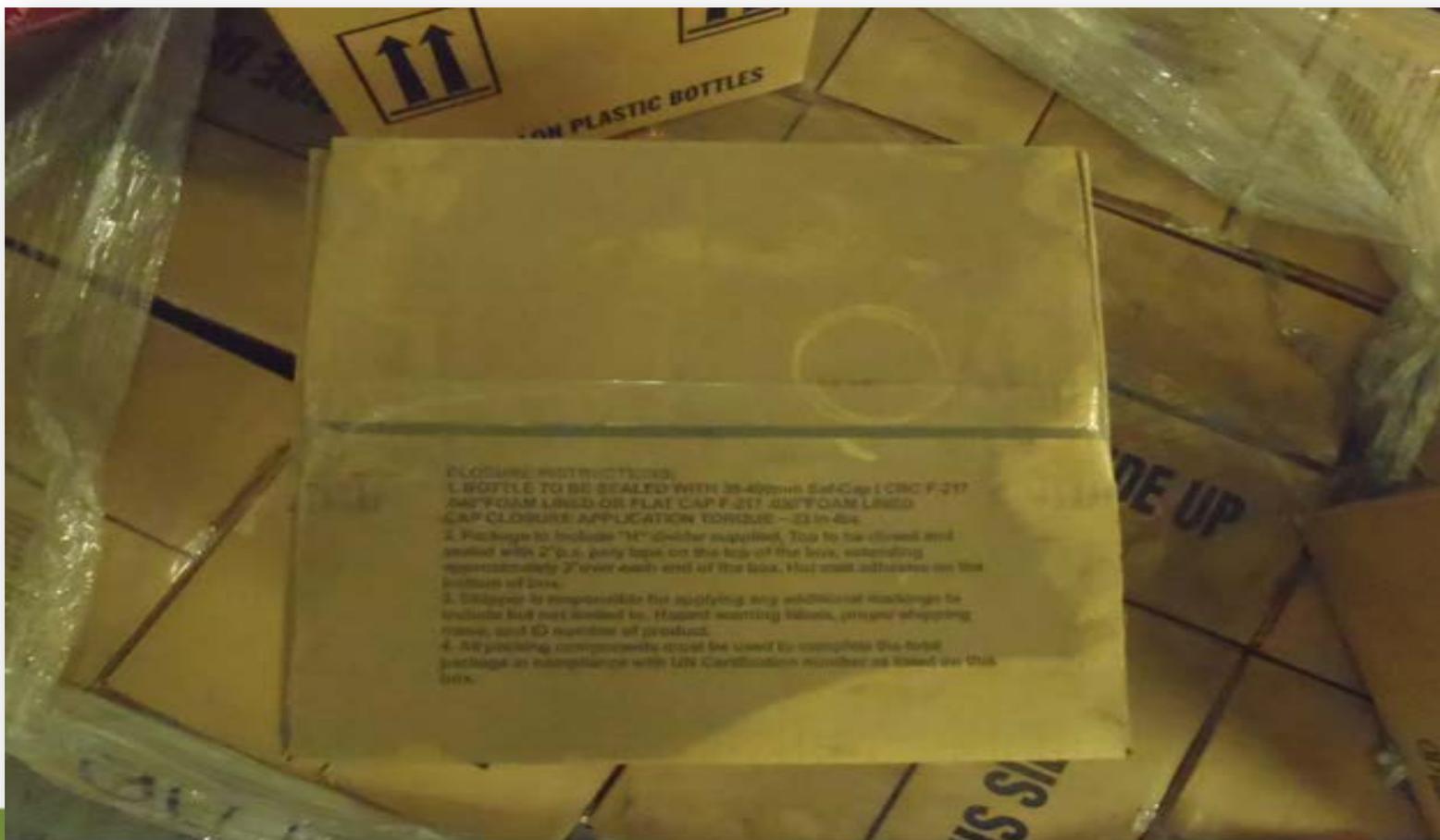


Embossed





Printed on Package





Shipper Responsibility

- § 173.22(a)(4)
 - For a DOT Specification or UN standard packaging subject to the requirements of part 178 of this subchapter, **a person must perform all functions necessary to bring the package into compliance** with parts 173 and 178 of this subchapter, **as identified by the packaging manufacturer or subsequent distributor** (for example, applying closures consistent with the manufacturer's closure instructions) in accordance with §178.2 of this subchapter...





Shipper Responsibility

- § 173.22(a)(4)
 - A person must maintain a copy of the manufacturer's notification, including closure instructions (see §178.2(c) of this subchapter) unless permanently embossed or printed on the packaging.

- § 173.27
 - General requirements for transportation by aircraft





Why Do I Need to Properly Close My Package

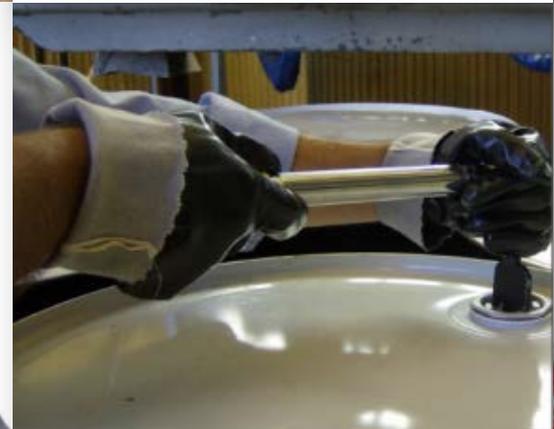
- Voiding the manufactures certification
- Preventing leaks
- Keeping the public safe
- Avoiding penalties





Tools Used

- Torque Wrench
- Bung Wrench
- Tape





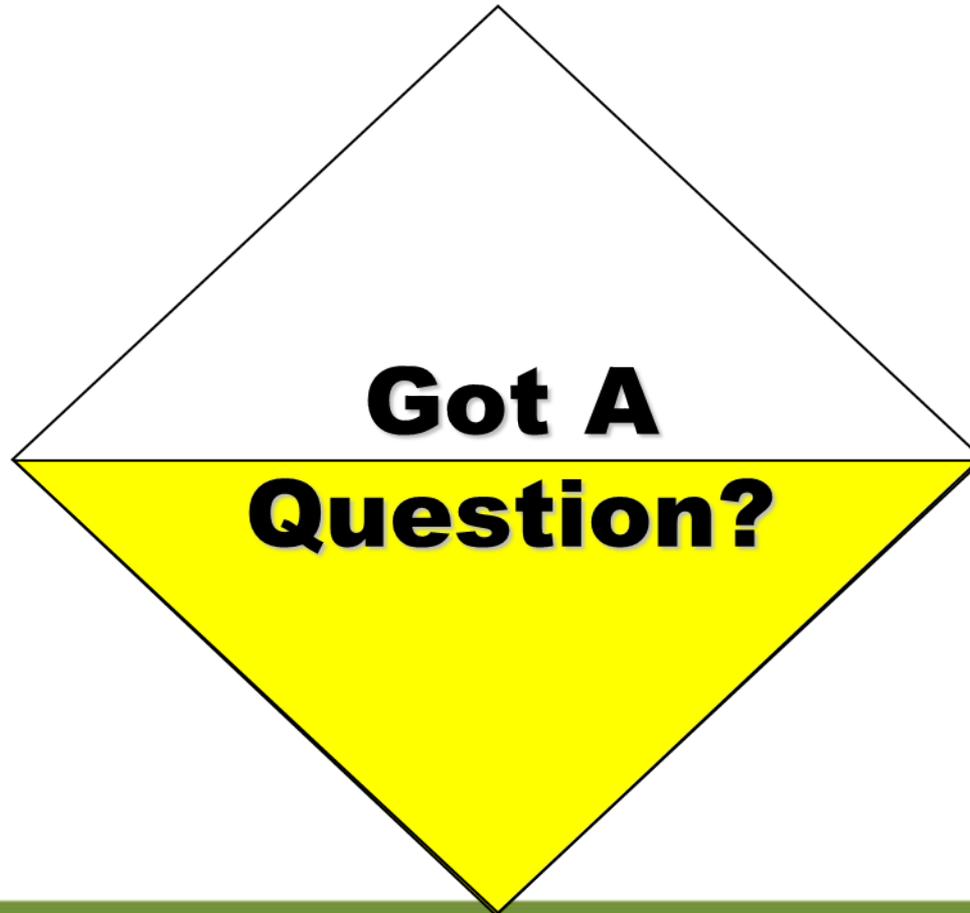
Reuse, Reconditioning and Remanufacturing of Packagings.

- § 173.28
 - states in part “Packagings and receptacles used more than once must be in such condition, including closure devices and cushioning materials, that they conform in all respects to the prescribed requirements of this subchapter”





Questions & Comments





Where to Find More Information...

PHMSA
Pipeline and Hazardous Materials
Safety Administration

U.S. Department of Transportation

Contact Us | FAQs | Site Map

PHMSA Home | Pipeline Safety | Hazardous Materials Safety

Go Advanced Search

Hazmat News | Most Viewed Info

Safety Advisories

- PHMSA Continues Push to Clarify & Update Hazmat Rules
- 2011 Hazmat Penalty Action Report
- Hazmat Harmonization Rule on Air Packaging Issued
- PHMSA seeks comment on transportation of lithium batteries
- PHMSA Proposes Updating Hazmat Rules to Better Balance Safety Standards and Regulatory Requirements

2012 EMERGENCY RESPONSE GUIDEBOOK
A Guidebook for First Responders During the Initial Phase of a Dangerous Goods/Hazardous Materials Transportation Incident

DOT Distributes Over 2 Million New Hazardous Materials Emergency Guidebooks to Nation's First Responders

1 2 3 4 5

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Key Officials
Regional Offices

PHMSA/Hazmat Resources

- Regulations & Rulemakings**
PHMSA regulates and ensures the safe movement of hazardous materials.
- Data & Reports**
PHMSA tracks data on the frequency of failures, incidents and accidents.
- Permits & Approvals**

<http://hazmat.dot.gov>





Hazardous Material Info-Center

1-800-HMR-4922

(1-800-467-4922)

E-mail: infocntr@dot.gov

Hours of Operation: 9 am – 5 pm ET



- Obtain answers to HMR questions
- Request copies of Federal Register, special permits or training materials
- Report HMR violations
- Fax on Demand





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Field Operations - Southern Region**

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