Small Quantities Packaging

Requirements and Exceptions

Presented to: The Office of Security and Hazardous Materials Safety, ASH

By: ADG

Date: August 2014

Structure

This presentation will review shipping methods, characteristics, and regulatory requirements for:

- ✓ Excepted Quantities
- ✓ De Minimis Exceptions
- ✓ Limited Quantities and
- ✓ Consumer Commodity

✓ Each of the above methods will outline PHMSA's recent rulemaking for each of the shipping methods above

✓ ICAO/IATA similarities are noted with each method

Excepted Quantities

Excepted Quantities - Part 173.4a

<u>Definition</u>: Small quantities of hazardous materials meeting the provisions of 49 CFR 173.4a are not subject to **any additional requirements of this SUBCHAPTER** except for the information that is contained in this section.

Reminder: The term <u>"SubChapter</u> means Subchapter C and includes Parts 171-180

Excepted Quantities - Part 173.4a

Recent Rule Making Changes

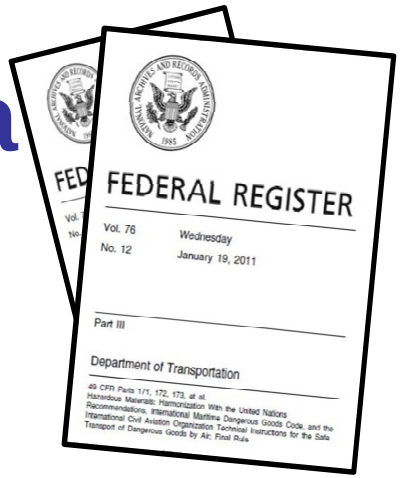
Jan 2009 HM 215J - Final Rule

- ✓ Renames Small Quantity Exceptions to Excepted Quantities
- ✓ Adds New Excepted Quantity Marking

Jan 14, 2010 HM 215J - Final Rule

- ✓ Clarified quantity limits for class 6.1
- ✓ Clarified Excepted Quantity Marking size

Excepted Quantities - Part 173.4a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Part III

Department of Transportation

Recent Rule Making Changes

Jan 2011 HM 215K - Final Rule

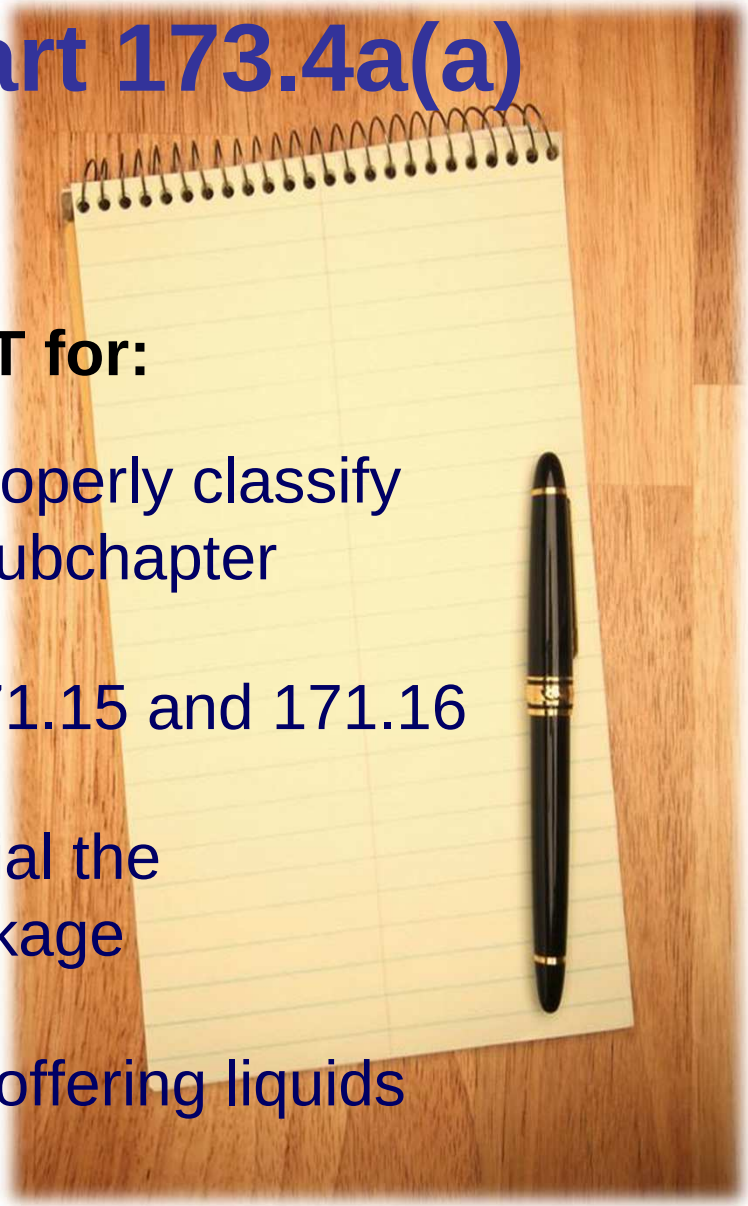
- ✓ Requires liquid Excepted Quantities to be capable of withstanding without leakage the pressure differential specified in 173.27(c)
- ✓ Exclusion of aerosols in class 2.2 (Final Rule – Alternately, aerosols can be shipped as Limited Quantities)
- ✓ Adds Polyester Resin Kits to the types of Division 5.2 (organic peroxide) material authorized as an excepted quantity
- ✓ Correcting the outer packaging aggregate quantity limit for Division 5.2 liquids from 250 mL to 500 mL
- ✓ Specific Overpack requirements (additional Excepted Quantity marking instead of the word “Overpack”)

Excepted Quantities - Part 173.4a(a)

Shipper's Responsibilities

No additional requirements EXCEPT for:

1. The shipper's responsibilities to properly classify their material IAW 173.22 of this subchapter
2. Reporting of incidents Sections 171.15 and 171.16
3. For a Class 7 (Radioactive) material the requirements for an excepted package
4. Comply with Part 173.27(c) when offering liquids



Excepted Quantities - Part 173.4a(b)

Authorized Materials

Only materials authorized for transport aboard passenger aircraft and appropriately classed as:

1. 2.2 (does not include aerosols), 3, 4 PG II & III (no self reactive), 5.1 PG II & III, 5.2 (kits only), 6.1 (no PG I), 7 (Radioactive Material in Excepted Packages), 8 PG II & III (except for UN2803 (Gallium) and UN2809 (Mercury))" and 9 (except for UN1845, Lithium Batteries/cells).

2. Prohibited classes 1 and 2.1

Excepted Quantities - Part 173.4a(c)

Inner Packaging Limits

Quantity limits apply to:

1. Toxic Materials with a 6.1 primary or subsidiary risk
   1 gram for solids and 1 mL for liquids
2. Other than Toxic Materials except class 2
   (30 grams for solids or 30 mL or liquids)
3. For Gases - a water capacity of 30 mL
   (This means the cylinder's holding capacity)

Excepted Quantities - Part 173.4a(d)

Outer Packaging Aggregate Quantity Limits

1. The maximum *aggregate quantity of hazardous material contained in each outer packaging (other than 2.2 or 5.2) must not exceed

- ✓PG I - 300g for solids or 300 mL for liquids
- ✓PG II - 500g for solids or 500 mL for liquids
- ✓PG III - 1 kg for solids or 1L for liquids
- ✓Class 2.2 - 1L (61 cubic inches)
- ✓5.2 - 500 grams for solids or 500 mL for liquids

* The term Aggregate applies to the combined total of all inner packagings

Excepted Quantities – ICAO/IATA

Inner & Outer Packaging Quantity Limits

5.1.2 Dangerous goods which may be carried as excepted quantities in accordance with this chapter are shown in column 9 of the dangerous goods list by means of an alphanumeric code as indicated in Table 3-3 below:

Table 3-3. Excepted quantity codes for Table 3-1

Code	*Maximum quantity per inner packaging*	*Maximum quantity per outer packaging*
E0	Not permitted as Excepted Quantity	
E1	30 g/30 mL	1 kg/1 L
E2	30 g/30 mL	500 g/500 mL
E3	30 g/30 mL	300 g/300 mL
E4	1 g/1 mL	500 g/500 mL
E5	1 g/1 mL	300 g/300 mL

5.1.2.1 For gases, the volume indicated for inner packagings refers to the water capacity of the inner receptacle and the volume indicated for outer packagings refers to the combined water capacity of all inner packagings within a single outer package.

5.1.3 Where dangerous goods in excepted quantities for which different codes are assigned are packaged together, the total quantity per outer packaging must be limited to that corresponding to the most restrictive Code.

ICAO indicates Excepted Quantities in the table of Dangerous Goods using column “9”. The column indicates E-0 E-1 E-2 E-3 E-4 E-5, these codes match up to the table 3-3 in Part 3; Chapter 5.

Excepted Quantities - Part 173.4a(d)

Outer Packaging Aggregate Quantity Limits

2. For outer packaging's containing more than one hazardous material, the aggregate quantity of hazardous material must not exceed the lowest permitted maximum aggregate quantity

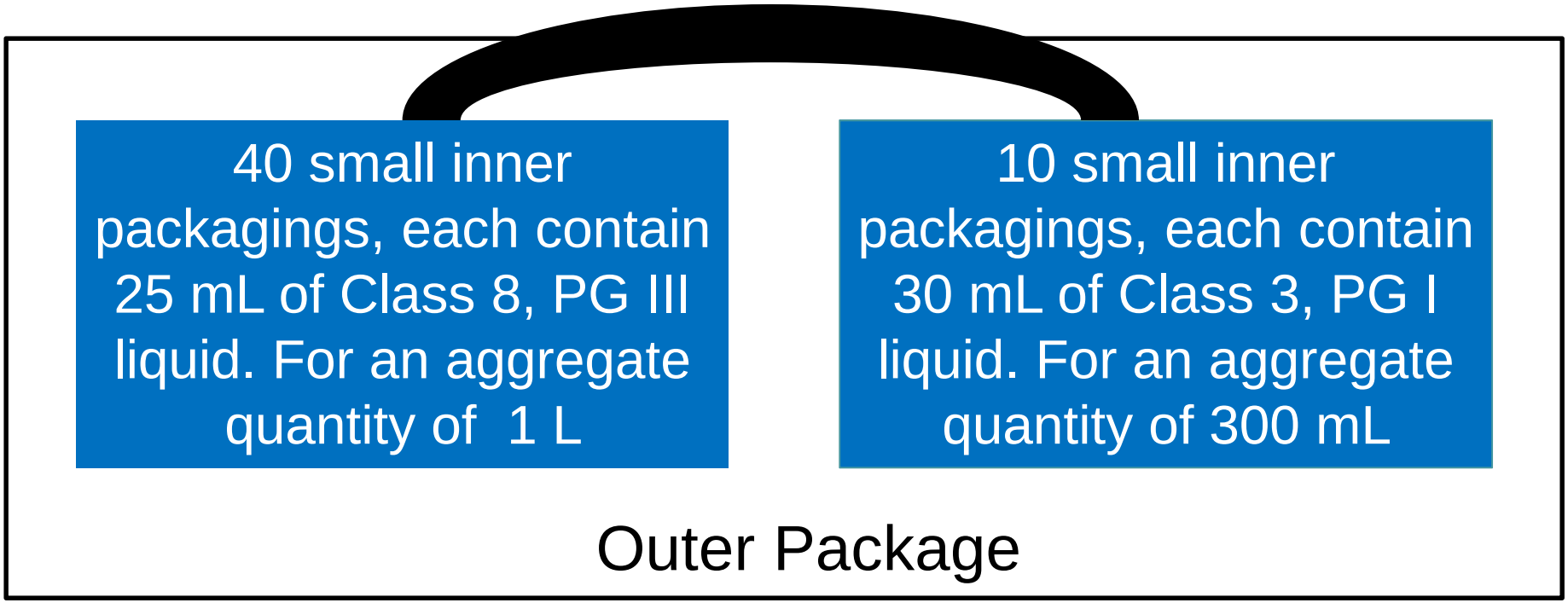
Example:

Class 8 Packing Group III maximum aggregate quantity – 1L
Class 3 Packing Group I maximum aggregate quantity – 300 mL

lowest permitted maximum aggregate quantity of 300 mL

Practical Examples – See next two slides

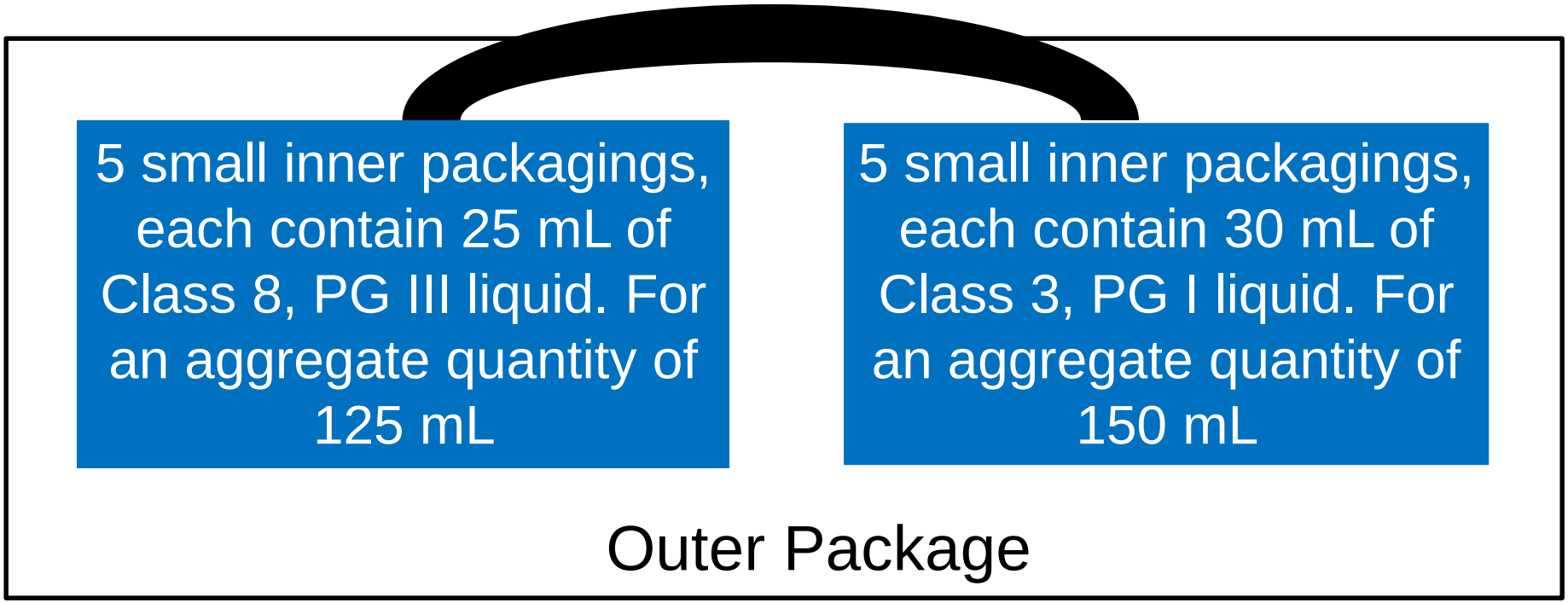
Example: Lowest permitted maximum aggregate quantity exceeded and not in compliance



Class 8 Packing Group III maximum aggregate quantity – 1L
Class 3 Packing Group I maximum aggregate quantity – 300 mL

Lowest permitted maximum aggregate quantity = 300 mL

Example: Lowest permitted maximum aggregate quantity in compliance



Class 8 Packing Group III maximum aggregate quantity – 125 mL
Class 3 Packing Group I maximum aggregate quantity – 150 mL

Lowest permitted maximum aggregate quantity = 300 mL

Excepted Quantities - Part 173.4a(e)

Packagings Materials

Packagings used for the transport of Excepted Quantities must meet the following requirements:

1. Construction of plastic, glass, porcelain, stoneware, earthenware or metal
2. Closure held securely in place with wire, tape or other positive means

The closure must not react chemically with the material

Excepted Quantities - Part 173.4a(e)

Packaging Materials (continued)

3. Intermediate packaging with cushioning material that avoids breakage, puncturing or leakage

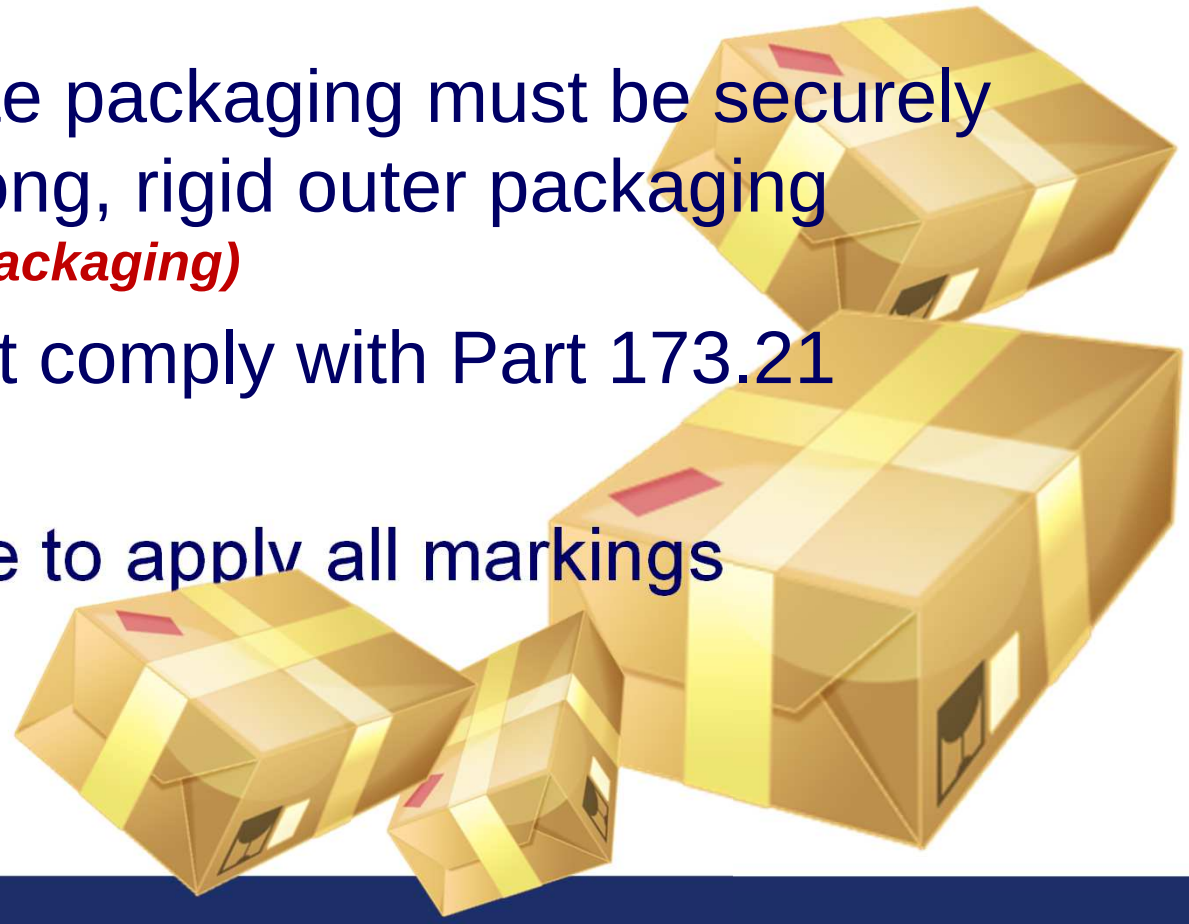
For liquid hazardous materials, the intermediate packaging must contain absorbent material that:

- ✓ Will absorb the entire contents
- ✓ Will not react dangerously with the material
- ✓ The absorbent material may be the cushioning material

Excepted Quantities - Part 173.4a(e)

Packaging Materials (continued)

4. The intermediate packaging must be securely packed in a strong, rigid outer packaging
   (Non specification packaging)
5. Placement must comply with Part 173.21 (Compatibility)
6. Adequate space to apply all markings



Excepted Quantities - Part 173.4a(e)

Packaging Material(s)

Package is not opened or otherwise altered until it is no longer in commerce

Overpacks Permitted – Requires additional Excepted Quantity Marking instead of the requirements of Part 173.25

Excepted Quantities - Part 173.4a(f)

Package Testing - The completed package prepared for transport (Filled) must be capable of withstanding as demonstrated by testing which is appropriately documented, without breakage or leakage

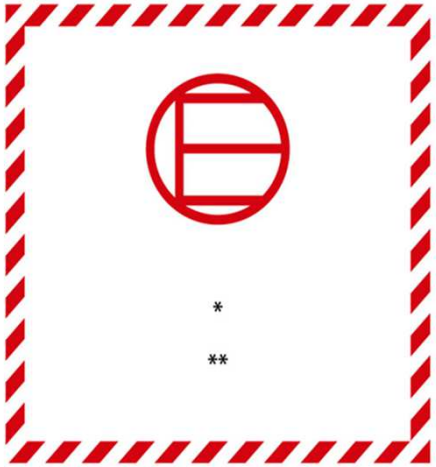
1. Drop testing at 1.8 meters
2. Compression testing IAW Part 178.606(c)

Note: Consult the packaging manufacture to verify

Excepted Quantities - Part 173.4a(g)

Marking - Durably and legibly marked with the Excepted Quantity Marking

* replaced with Hazard class/division
** replaced with name of shipper/consignee
if not shown else where on box

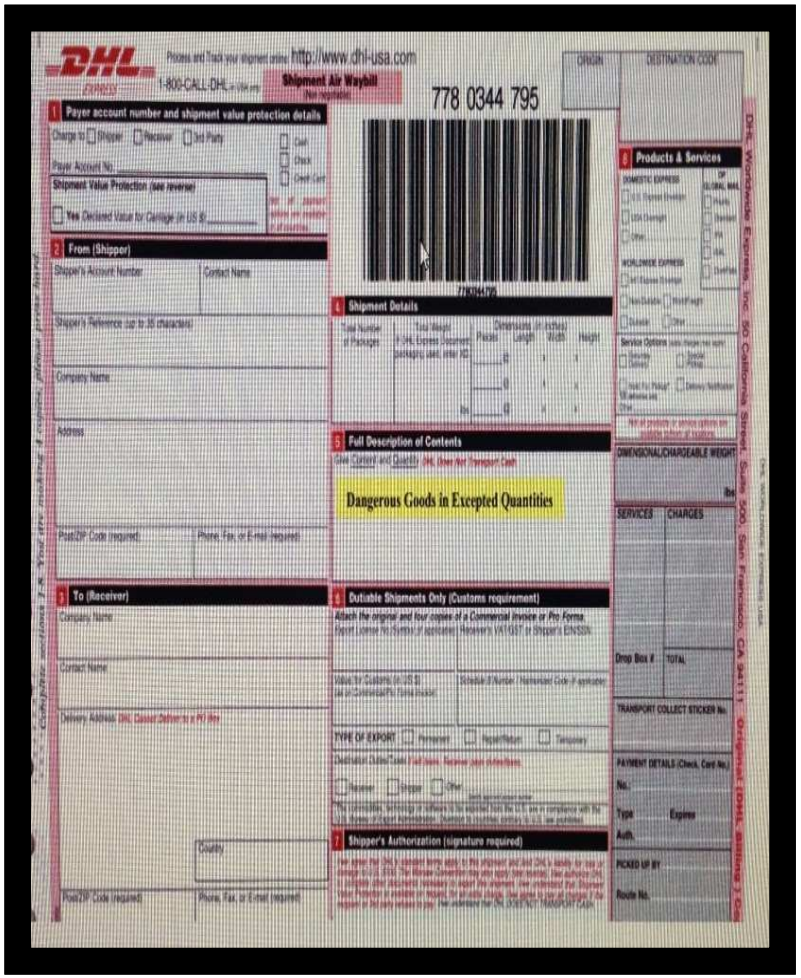


1. No less than 100 X 100 mm
2. Overpack Requirements - marked in the same manner as the package
   - Use an Excepted Quantity Marking instead of the word "Overpack"

Excepted Quantities - Part 173.4a(h)

Documentation for Excepted Quantities

Shipping paper not required if accompanied by a document, it must include **"Dangerous Goods in Excepted Quantities"** and indicate the number of packages



Excepted Quantities - Part 173.4a(i)

Training

- ✓ No formal training required
- ✓ Must know about the requirements of this section

Note: When the package is prepared improperly all requirements of a fully regulated shipment apply. This includes training.

Note: PHMSA Interpretation: Ref. No.: 09-0266

Concerns training, "although 172.700 training is not required most who use the exception find basic hazmat training useful to understand the exception's requirements"

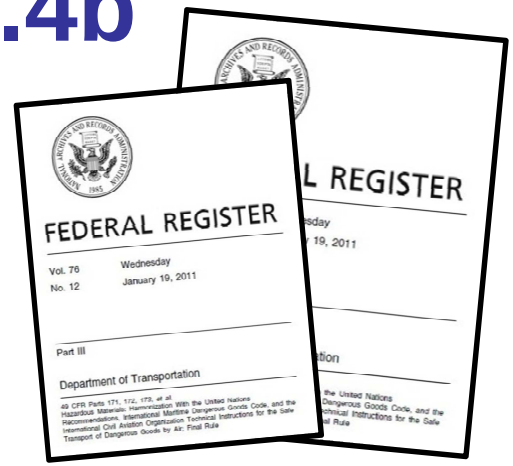
Excepted Quantities - Part 173.4a(j)

Restrictions

May not be carried in checked or carry-on baggage

De Minimis Exceptions

De Minimis Exceptions -173.4b



Rule Making History

Jan 2009 HM 215J

- ✓ Introduces De Minimis Exception

Feb 2010 HM 231

- ✓ The Term “Strong Outside Packaging” changed to “Strong Outer Packaging”

Jan 2011 HM215K Final Rule

- ✓ Added 173.4b(b) for Non-infectious specimens

Jan 2013 HM215L

- ✓ 173.4b(b) Non-infectious specimens permitted in carry-on and checked baggage

De Minimis Exceptions -173.4b(a)

Packing Group II and III materials

In Classes 3, 4.1, 4.2, 4.3, 5.1, 6.1, 8, and class 9 do not meet the definition of a hazardous material in part 171.8 of this subchapter when packaged in accordance with this section and are not subject to the requirements of this subchapter

1. The maximum quantity per inner receptacle or article is limited to: 1 mL for liquids and 1 g for solids
2. Each inner receptacle with a removable closure has its closure held in place by positive means

De minimis Exceptions -173.4b(a)

3. Cushioning and absorbent material required
   - ✓ Must not react with the material
   - ✓ Capable of absorbing the entire contents (if a liquid)

4. The inside packaging is securely packed in a strong outer packaging

5. The completed package is capable of sustaining a 1.8 drop test

De Minimis Exceptions -173.4b(a)

6. Placement of the material in the package or packing different materials in the package does not result in a violation of 173.21

7. The Aggregate quantity per package does not exceed 100 g for solids or 100 mL for liquids

8. The gross mass of the completed package does not exceed 29 kg

De minimis Exceptions -173.4b(a)

9. The package is not opened or otherwise altered until it is no longer in commerce

10. For transportation by aircraft

- ✓Authorized to be carried aboard passenger-carrying aircraft
- ✓Material packed IAW this section may not be carried in checked or carry-on baggage

Note: There is no requirement for Documentation, Marking or Labeling

De minimis Exceptions -173.4b(b)

Non-Infectious Specimens

Such as specimens of birds, reptiles, fish, and insects containing small quantities of Ethanol (UN1170), Formaldehyde solution, flammable (UN1198), Alcohols, n.o.s. (UN1987) and Isopropanol (UN1219) are not subject to the requirements of this subchapter provided the following are met:

De minimis Exceptions -173.4b(b)

1. The Specimens are:

- ✓ Wrapped in a paper towel or cheesecloth moistened with alcohol or an alcohol solution and placed in a plastic bag that is heat-sealed. Free liquid in the bag must not exceed 30 mL

- ✓ Placed in vials or other rigid containers with no more than 30 mL of alcohol or alcohol solution. The containers are placed in a plastic bag that is heat-sealed

De minimis Exceptions -173.4b(b)

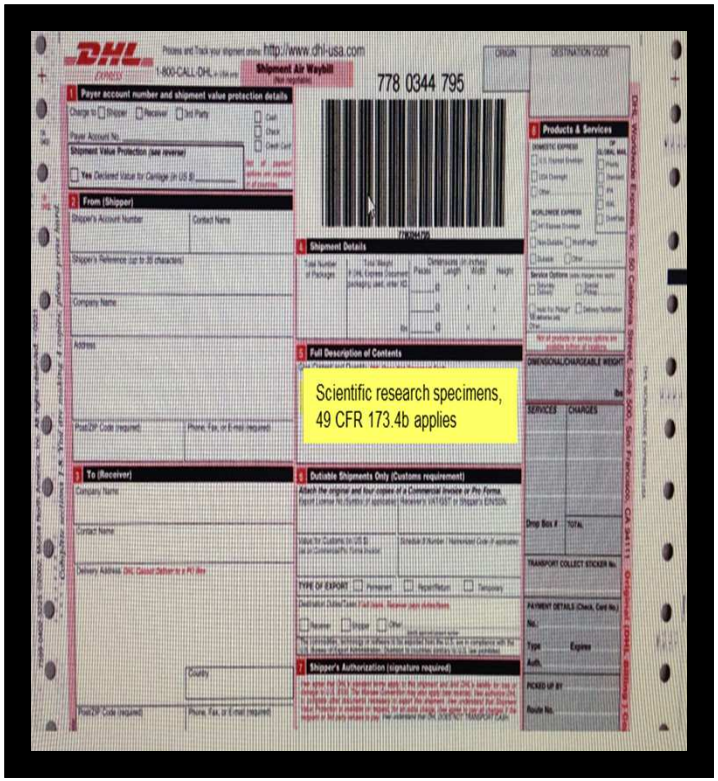
7. Training – Each person who offers or transports excepted quantities of hazardous materials must know about the requirements of this section.

8. Restrictions – Except as provided in 175.10*, for transportation by aircraft, hazardous materials packaged in accordance with this section may not be carried in checked or carry-on baggage by a passenger or crew member.

Additional Information: 175.10(a)(23) does allow non-infectious specimens transported in accordance with 173.4b(b) to be carried in baggage.

De minimis Exceptions -173.4b(b)

6. Documentation - For transport by air, a shipping paper is not required, except that, if a document such as an air waybill accompanies a shipment of specimens containing hazardous materials excepted under the terms of this section, the document must include the statement:



[“Scientific research specimens, 49 CFR 173.4b applies” and the number of packages indicated.]

De minimis Exceptions -173.4b(b)

7. Training - Each person who offers or transports excepted quantities of hazardous materials must know about the requirements of this section.

8. Restrictions - Except as provided in 175.10*, for transportation by aircraft, hazardous material packaged in accordance with this section may not be carried in checked or carry-on baggage by a passenger or crew member

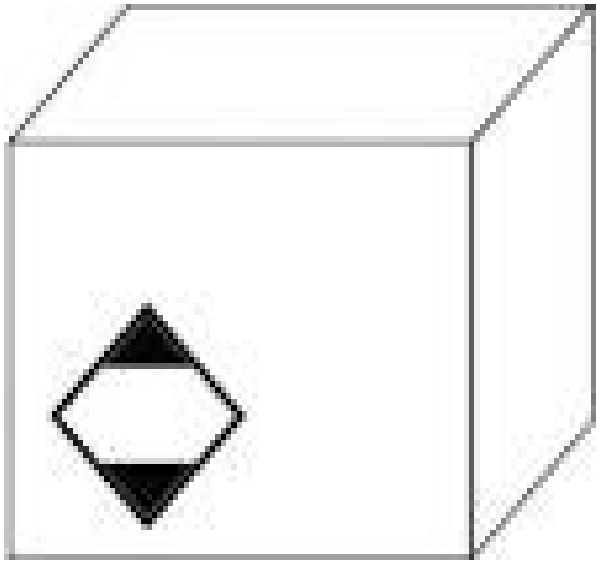
Additional Information: 175.10(a)(23) does allow non-infectious specimens transported in accordance with 173.4b(b) to be carried in baggage.

Limited Quantities

Limited Quantities

Definition:

Limited Quantity. When specified as such in a section applicable to a particular material, means the maximum amount of a hazardous material for which there is a specific labeling or packaging exception.



Limited Quantities

Rule Making History

Jan 19, 2011 HM 215K - Final Rule

- ✓ Limited Quantities restricted to PG II and III
- ✓ Creates 173.27(f) Table 3 for inner and outer quantity limits
- ✓ Introduces “Y” Marking requirement
- ✓ Details elimination of ORM-D-AIR in air mode
- ✓ “Cartridge, power devices” must be successfully tested under the UN Test Series 6(d) criteria for reclassification as limited quantity material
- ✓ Affords limited quantities and excepted quantities relief from 175.75 inaccessible loading restrictions

Limited Quantities

Rule Making History

December 30, 2011 HM 215K - Final Rule

- ✓ Clarifies the display of a "Y" marking on limited quantity packages that are not intended for transportation by aircraft (authorized)
- ✓ Clarifies Part 173.27(f) table 3 requirements for Class 1.4S explosives and class 7 radioactive materials IAW 173.63(b)

For example, packages of Class 7 are not marked with the limited quantity "Y" mark prescribed in 172.315 but rather as prescribed in 173.421 through 173.425, as appropriate

Limited Quantities

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Part III

Department of Transportation

49 CFR Parts 171, 172, 173, et al. Hazardous Materials; Harmonization with the United Nations Recommendations, International Maritime Dangerous Goods Code, and the International Civil Aviation Organization Technical Instructions for the Safe Transport of Dangerous Goods by Air; Final Rule

Rule Making History

Oct 2, 2013 HM 215K Corrections - Final Rule

- ✓ Updates Class 8 list of articles and substances not authorized limited quantity status
- ✓ Corrected the Class 9 entries to include the identification numbers "UN3334" and "UN3335

Oct 31, 2013 HM 215K, 215L, 215G - Final Rule

- ✓ Modified175.75(c) & (e) to indicate no inaccessible quantity limits for articles of Identification Numbers UN0012, UN0014

March 18, 2014 HM 233C - Final Rule

- ✓ This rule making incorporated several Special Permits and Competent Authority Approvals into the HMR

Limited Quantities

Starting point for preparing a Limited Quantity

- 172.101 Table of Hazardous Materials
- The packaging exceptions for most limited Quantities can be found 173.150 - 173.155, 173.63, and 173.306
  - All the above sections refer to Part 173.27, Specifically 173.27(f)(2)
  - General requirements for Packagings and Packages (173.24/24a) apply unless otherwise excepted

Limited Quantities

172.101 Table of Hazardous Materials

Sym-bols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Code	Special provisions (§172.102)	(8) Packaging (§173.***) Exceptions	Non-bulk	Bulk	(9) Quantity limitations (see §§173.27 and 175.75) Passenger aircraft/rail	Cargo aircraft only
1	2	3	4	5	6	7	8A	8B	8C	9A	9B
	Acetone	3	UN1090	II	3		150	202	242	5 L	60 L
	Methylal	3	UN1234	II	3		None	202	242	5 L	60 L

Column 8A indicates packaging exceptions - A “None” in this column indicates there are no packaging exceptions

Limited Quantities

ICAO Dangerous Goods List

Name	UN No.	Class or Division	Sub Risk	Labels	State Variations	Special Provi-sions	UN PG	Excepted Quantity	Passenger Aircraft		Cargo Aircraft	
									Pack-aging Instr	Max. Net QTY per package	Pack-aging Instr	Max. Net QTY per package
1	2	3	4	5	6	7	8	9	10	11	12	13
Acetone	1090	3		Flam Liq	US		II	E2	353	5 L	364	60 L
									Y341	1 L		

ICAO identifies Limited Quantities under passenger aircraft columns 10 and 11 with an additional packing instruction that has a "Y" Prefix

Limited Quantities

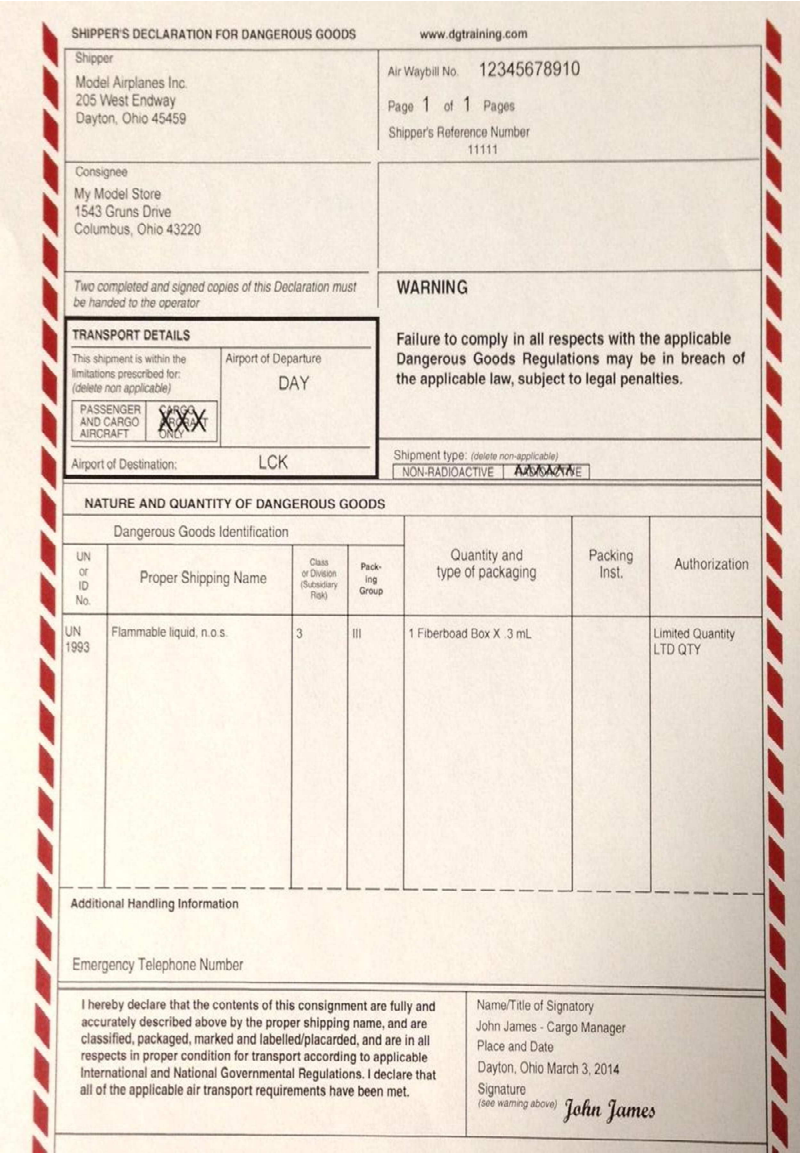
172.203(b) Additional Descriptions

When a shipping paper is required; the description for a material offered for transportation as “limited quantity,” must include the words “Limited Quantity” or “Ltd Qty” following the basic description.

UN 1263, Paint 3, PGIII, LTD QTY

Limited Quantities

ICAO/IATA indicates Limited Quantities on the declaration by using the “Y” prefix in the Packing Instruction



SHIPPER'S DECLARATION FOR DANGEROUS GOODS www.dgtraining.com

Shipper
Model Airplanes Inc.
205 West Endway
Dayton, Ohio 45459

Air Waybill No. 12345678910
Page 1 of 1 Pages
Shipper's Reference Number
11111

Consignee
My Model Store
1543 Gruns Drive
Columbus, Ohio 43220

Two completed and signed copies of this Declaration must be handed to the operator

WARNING

Failure to comply in all respects with the applicable Dangerous Goods Regulations may be in breach of the applicable law, subject to legal penalties.

TRANSPORT DETAILS

This shipment is within the limitations prescribed for: *(delete non applicable)*
PASSENGER AND CARGO AIRCRAFT | ~~CARGO AIRCRAFT ONLY~~

Airport of Departure: DAY

Airport of Destination: LCK

Shipment type: *(delete non-applicable)*
NON-RADIOACTIVE | ~~RADIOACTIVE~~

NATURE AND QUANTITY OF DANGEROUS GOODS

Dangerous Goods Identification				Quantity and type of packaging	Packing Inst.	Authorization
UN or ID No.	Proper Shipping Name	Class or Division (Subsidiary Risk)	Packing Group			
UN 1993	Flammable liquid, n.o.s.	3	III	1 Fiberboad Box X .3 mL		Limited Quantity LTD QTY

Additional Handling Information

Emergency Telephone Number

I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labelled/placarded, and are in all respects in proper condition for transport according to applicable International and National Governmental Regulations. I declare that all of the applicable air transport requirements have been met.

Name/Title of Signatory
John James - Cargo Manager
Place and Date
Dayton, Ohio March 3, 2014
Signature *(see warning above)* John James

Limited Quantities

172.315(a) Limited Quantity Marking (modes other then air)

172.315(b) Limited Quantity Air Marking “Y” in Label center

- ✓ Placement – Square-on-point
- ✓ Description/Size - “Y” in Label center 100 mm X 100 mm or 50 mm X 50 mm
- ✓ Contrast - color sufficiently contrasts the entire marking (the border, the “Y” and the inner black triangles)

Note: ICAO Reference for Limited Quantity Air Marking is - Part 3 Chapter 4

Limited Quantities

173.27 General requirements for transportation by aircraft

173.27(f)(2) - Limited Quantities

i. Unless otherwise specified in this part, or in subpart **C** of part 171 of this subchapter, when a limited quantity of hazardous material packaged in a combination packaging is intended for air transportation

- ✓ The inner and outer packagings must conform to the quantity limitations set forth in Table 3

Example: 173.27(f)(3) - Table 3

Maximum net quantity of each inner and outer packaging for materials authorized for transportation as limited quantities

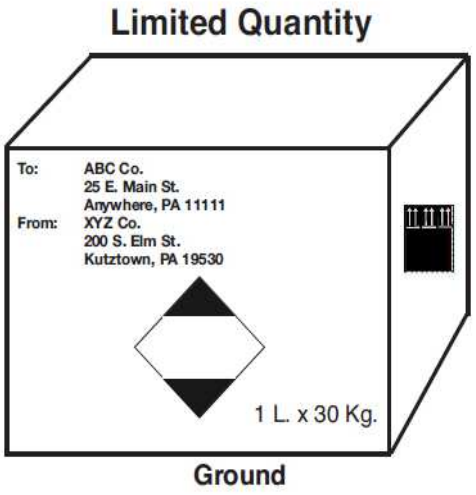
Example indicates limitations for Class 8 Liquids and solids

Hazard Class or Division	Maximum authorized net Quantity of each packaging		Maximum authorized net quantity of each outer package	Notes
	Glass, earthen-ware or fiber inner packagings	Metal or plastic inner packagings		
Class 8	PG I: Forbidden			
Class 8 (Liquid Material)	PG II: 0.1L	PG II: 0.1L	PG II: 0.5L	For "Fuel cell cartridges containing corrosive substances" (UN3477), see §173.230 of this part.
	PG III: 0.5L	PG III: 0.5L	PG III: 1L	
Class 8 (Solid Material)	PG II: 0.5 kg	PG II: 0.5 kg	PG II: 5 kg	*Maximum net quantity per outer package for UN2430 is 1.0 kg. UN2794, UN2795, UN2803, UN2809, UN3028 are not authorized as limited quantity.
	PG III: 1.0 kg	PG III: 1.0 kg	PG III: 5.0 kg	

Limited Quantities

173.27(f)(2) - Limited Quantities

- ✓ Must be authorized for transportation aboard a passenger-carrying aircraft
- ✓ Unless otherwise excepted, packages must be marked and labeled in accordance with this section and any additional requirements in subparts D and E of part 172



Limited Quantities

173.27(f)(2) - Limited Quantities

✓ Materials or articles not authorized as limited quantity by aircraft

A. Those in Packing Group I

B. Classes 1 & 7, other than those exceptions in Part 173.63(b) & Part 173.421- 426

C. 2.1 Flammable Gas (*except* aerosols (UN1950)) and 2.3 Toxic Gas

Limited Quantities

- ✓ Materials or articles not authorized as limited quantity by aircraft (continued)

D. 4.1, 4.2 and 4.3,

E. 5.2 , Except for Chemical, First Aid or Polyester Resin kits, (Types, D, E, and F non-temperature controlled only).

F. Class 8 – UN2794, UN2795, UN2803, UN2809, UN 3028,UN3029 and UN3506.

G. All Class 9 (miscellaneous) materials except for UN1941, UN1990, UN2071, UN3077, UN3082, UN3316, UN3334, UN3335, and ID8000, Consumer Commodities.

Limited Quantities

173.27(f)(2) Limited Quantities- by Aircraft

ii. Must be marked with the Limited Quantity "Y" Marking

iii. Strong Outer Packaging - 30 kg weight limit

iv. A secondary means of closure or leak proof form of containment (liner)

v. 1.2 m Drop Test

vi. Stack Test with identical packages – 3 meters high including sample

vii. Pressure differential test (ICAO Part 4;1.1.3)

Note: Consult packaging manufacture to verify package testing

Limited Quantities

173.63 Packaging Exceptions (1.4s explosives exceptions)

Limited quantities of:

- “Cartridges, small arms”
- “Cartridges, power device”
- “Cartridges for tools, blank” and
- “Cases, cartridge, empty with primer”

Limited Quantities

Radioactive Material Exceptions – Parts 173.421-426

- ✓ Marked with UN Number
- ✓ Reporting of Incidents
- ✓ Must be Trained (172.700)
- ✓ 173.425 Table 4 requirements

Limited Quantities

173.156 Exceptions for Limited Quantity and ORM
(Provides little guidance for air shipments)

a. Exceptions for hazardous materials shipments in the following paragraphs are permitted only if this section is referenced for the specific hazardous material in the 172.101 Table or in a packaging section in this part

b. Packagings for limited quantity and ORM-D are specified according to hazard class in Part173.150 through 173.155, and173.306

✓173.156(b)(2)(iv) The package conforms to the general packaging requirements of subpart B of this part

Limited Quantities

49 CFR Part 173.150(g)

Limited quantities of retail products containing Ethyl Alcohol to include:

Beverages, food, cosmetics and medicines, medical screening solutions, and concentrates sold as retail products.

Two categories:

1. Containing **not more** than 70% ethyl alcohol by volume/weight

2. Containing **more than** 70% ethyl alcohol by volume/weight

49 CFR Part 173.150(g) - continued

1. Containing not more than 70% ethyl alcohol by volume/weight

i. Non Glass Packagings

A. Volume does not exceed 16 fluid ounces for liquids

B. Volumes greater than 16 fluid ounces but not exceeding 1 gallon the company name and the words “Contains Ethyl Alcohol” are marked on the package

C. Solids containing ethyl alcohol may be packaged in non-glass inner packagings not exceeding 1 pounds capacity;

D. Weights greater than one pound up to 8 pounds the company name and the words “Contains Ethyl Alcohol” are marked on the package.

Contains Ethyl Alcohol

49 CFR Part 173.150(g) - continued

1. Containing not more than 70% ethyl alcohol by volume/weight

ii. For Glass Packagings

A. Volume does not exceed 8 fluid ounces in capacity for liquids

B. Volumes greater than 8 fluid ounces to 16 fluid ounces the company name and the words “Contains Ethyl Alcohol” are marked on the package

C. Solids containing ethyl alcohol may be packaged in glass inner packagings not exceeding 1⁄2 pound

Contains Ethyl Alcohol

D. Weights greater than 1⁄2 pound up to 1 pound the company name and the words “Contains Ethyl Alcohol” are marked on the package

49 CFR Part 173.150(g)- continued

iii. Outer Packaging Quantities and Other requirements

✓The net liquid contents of all inner packagings in any single outer packaging may not exceed 192 fluid ounces

✓The net solid contents of all inner packagings in any single outer packaging may not exceed 32 pounds

✓The gross weight of any single outer package shipped may not exceed 65 pounds

✓Inner packagings must be secured and cushioned to prevent breakage, leakage, and movement.

49 CFR Part 173.150(g) - continued

1. **Containing more than 70% ethyl alcohol by volume/weight**
   i. Inner packagings containing liquids the volume does not exceed 8 fluid ounces
   ii. Solids containing ethyl alcohol are not packed in inner packagings exceeding 1⁄2 pound in weight

49 CFR Part 173.150(g) - continued

iii. Outer Packaging Quantities and Other requirements

- ✓ The net liquid contents of all inner packagings in any single outer packaging May not exceed 192 fluid ounces
- ✓ The net solid contents of all inner packagings in any single outer packaging may not exceed 32 pounds
- ✓ The gross weight of any single outer package shipped may not exceed 65 pounds
- ✓ Inner packagings must be secured and cushioned to prevent breakage, leakage, and movement.

49 CFR Part 173.150(g) -continued

3. Specific Air Transportation Requirements (Passenger and Cargo Aircraft)

- ✓No outer package may be transported which contains an inner packaging net quantities exceeding:

16 fluid ounces of Flammable Liquid

OR

1 pound of solids containing flammable liquid

Consumer Commodities

Consumer Commodities

Defined -171.8 and ICAO PI 963

Consumer Commodity - Means a material that is packaged and distributed in a form intended or suitable for sale through retail sales agencies or instrumentalities for consumption by individuals for purposes of personal care or household use. This term also includes drugs and medi

Consumer Commodities

Recent Rule Making

Jan 19, 2011HM 215K – Final Rule

- ✓ Outlines December 31, 2012 transition from ORM-D-Air to ID 8000 Consumer Commodities
- ✓ Created section - 173.167 Consumer Commodities
- ✓ Limited Quantity "Y" Marking requirement for Consumer Commodities
- ✓ Restricts hazmat classes for reclassification to Consumer Commodities

Consumer Commodities

Recent Rule Making

Jan 7, 2013 HM 215K – Final Rule

- ✓ Corrected inconsistencies between ICAO Packing instruction Y963 and 173.167 (testing and absorbent material requirements)
- ✓ Clarifies friction type closures must be secured by positive means not secondary means

Oct 31, 2013 HM–215K/L – Final Rule

- ✓ Revised 173.24(i) and173.167

Consumer Commodities

Sym-bols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Code	Special provisions (§172.102)	(8) Packaging (173.***) Exceptions	Non-Bulk	Bulk	(9) Quantity limitations (see 173.27 and 175.75) Passenger aircraft/rail	Cargo aircraft only
1	2	3	4	5	6	7	8A	8B	8C	9A	9B
	Consumer Commodity	9	ID8000		9		167	167	None	30 kg gross	30 kg gross
	Consumer Commodity	ORM-D			None	222	156, 306			30 kg gross	30 kg gross

Consumer Commodities

173.167(a) Effective January 1, 2013, a "Consumer Commodity

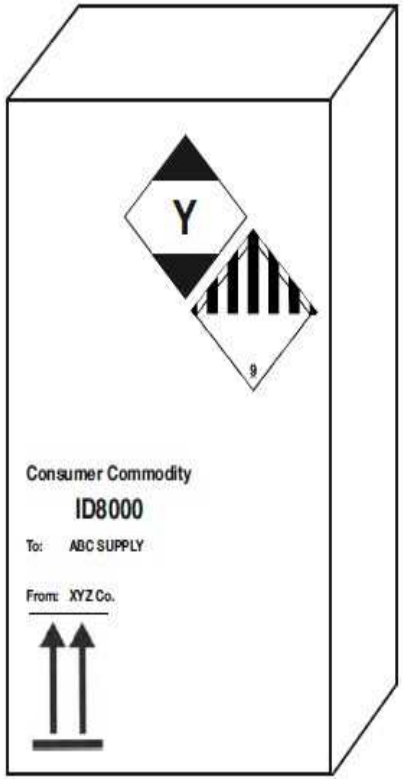
a. When offered for air transportation limited to
   - Class 2 (non toxic aerosols), 3 (PG II & III), 6.1 (PG III) & UN3077, UN3082, and UN3175 UN3334, and UN3335

✓No subsidiary risk

✓Authorized aboard a passenger-carrying aircraft

✓ICAO/IATA - Special Provision A112 (Similar information)

Consumer Commodities



173.167(a) - Continued

- ✓ Consumer Commodities are excepted from the specification packaging requirements
- ✓ Consumer Commodities prepared for Air
  - ✓ **Shipping papers required**
  - ✓ **Labeled appropriately**
- ✓ Except as indicated the completed package must conform to 173.24 and 173.24a
- ✓ Except for the pressure differential requirements in 173.27(c), the requirements of 173.27 do not apply

Consumer Commodities

173.167(a) – Continued

1. Inner and outer packaging quantity limits
   i. Non-toxic aerosols constructed in accordance with 173.306 of this part
      - ✓ In non-refillable, non-metal containers not exceeding 120 mL
      - ✓ In non-refillable metal containers not exceeding 820 mL
      - ✓ Flammable aerosols may not exceed 500 mL
   ii. Liquids in inner packagings not exceeding 500 mL
   iii. Solids in inner packagings not exceeding 500 g
   iv. Any combination thereof not to exceed 30 kg gross weight (outer packaging limits)

Consumer Commodities

173.167(a)

2. Closures

- ✓ Friction-type closures must be secured by positive means
- ✓ The body and closure must be constructed to adequately resist the effects of temperature and vibration
- ✓ The closure device must be so designed that it is unlikely that it can be incorrectly or incompletely closed

Consumer Commodities

173.167(a) - Continued

3. Absorbent material

- ✓ Inner packagings must be tightly packaged in strong outer packagings
- ✓ Absorbent and cushioning material must not react dangerously with the contents of inner packagings
- ✓ Glass or earthenware inner packagings containing liquids of Class 3 or Division 6.1, sufficient absorbent material must be provided to absorb the entire contents

Consumer Commodities

173.167(a) - Continued

3. Absorbent material

- Absorbent material is not required if the glass or earthenware inner packagings are sufficiently protected as packaged for transport that it is unlikely a failure would occur, and

➢If a failure did occur, that it would be unlikely that the contents would leak from the outer packaging

Consumer Commodities

173.167(a) - Continued

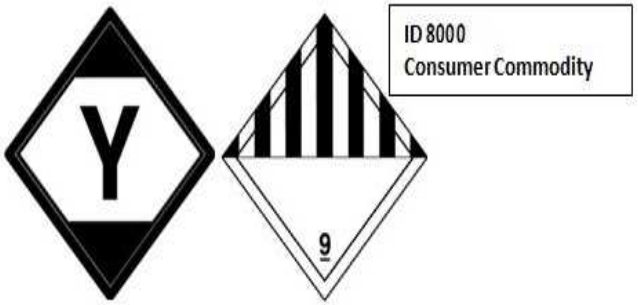
4. Drop test capability
   - ✓ Packages of consumer commodities must be capable of withstanding a 1.2 m drop on solid concrete
5. Stack test capability
   - ✓ Capable of withstanding, without failure or leakage of any inner packaging a force applied to the top surface for a duration of 24 hours

Consumer Commodities

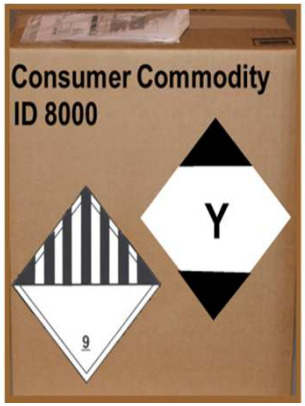
173.167(b)

When offered for transportation by aircraft:

1. Marking & Label Requirements
   - ✓ Marked as a limited quantity in accordance with 172.315(b)(1)
   - ✓ Labeled as Class 9



2. Pressure differential capability
   - ✓ Except for UN3082, inner packagings intended to contain liquids must be capable of meeting the pressure differential requirements



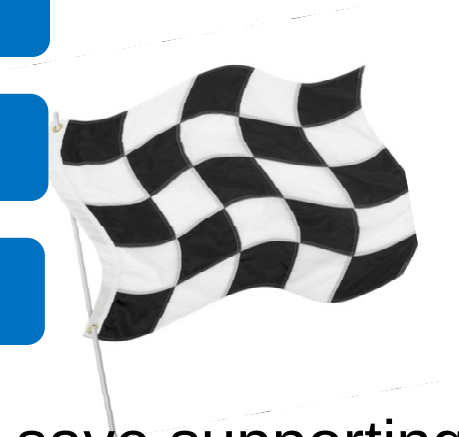
Hazmat Questions?

For questions about hazardous materials (chemicals, batteries, battery-powered devices, gases, aerosols, flammables, etc.) you may contact the FAA Office of Hazardous Materials Safety via e-mail at hazmatinfo@faa.gov. Please allow 1-2 business days for answers to e-mail questions.

This Concludes the Small Quantities Packaging brief.

To Review, this briefing discusses:

- ✓ Excepted Quantities
- ✓ De Minimis Exceptions
- ✓ Limited Quantities and
- ✓ Consumer Commodity



Visit the attachments tab to view, find and save supporting documentation related to this briefing. .

You may now exit the course.