

FAA Flammable Liquids Shipping Guidance



Disclaimer: This guidance does not replace any regulation and is not considered training.

The carrier can be more restrictive than the regulation; therefore, we recommend contacting the carrier before shipping Hazardous Materials.

This document is for general guidance only and does not create any legally-enforceable rights or obligations.



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How to use this guide:



1. First – obtain a Safety Data Sheet and check Section 14 for United Nations (UN) Number.

1. Look up the UN number in the [49 CFR 172.101 table](#) or ICAO-TI Table 1-3.
2. Scroll to page #3 of this guide and click on the icon corresponding to how you plan to ship your hazardous materials, i.e., limited quantities, excepted quantities, cargo, or passenger aircraft.
3. Click on Maximum authorized net capacity of each inner packaging from column 9a (passenger aircraft) or 9b (cargo aircraft) of the 101 Table or column 10/11 of ICAO-TI, Table 1-3.
4. Lastly - you will be directed to the packaging authorization and packaging demonstration.

*Note: Some packages will need to include a [hazardous substance](#) marking per Table 1 to Appendix A—Hazardous Substances Other Than Radionuclides.



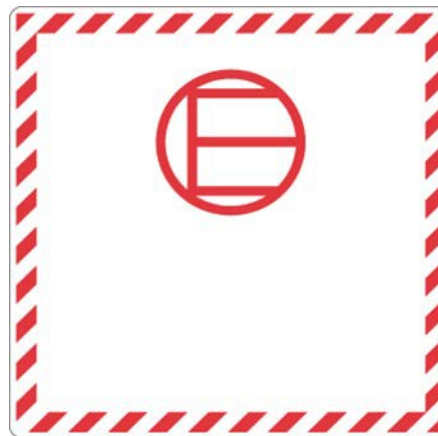
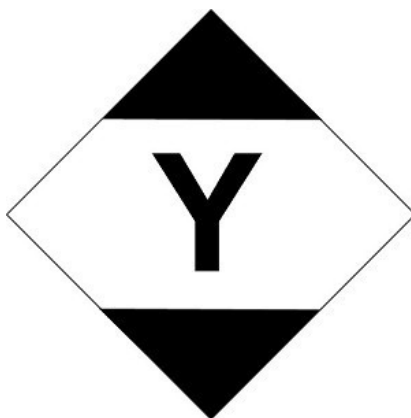
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Step 1: Select how you plan to ship the item, i.e., Passenger Aircraft, Cargo Aircraft, as a limited quantity, or as an excepted quantity.



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Passenger Aircraft

Step 2: Select the maximum net quantity per package from Column 9a of the 172.101 table.

Maximum net quantity per package from Column 9a of the [§172.101](#) table:

[Not greater than 0.5L](#)

[Greater than 0.5L, not greater than 1L](#)

[Greater than 1L, not greater than 5L](#)

[Greater than 5L, not greater than 60L](#)

[Greater than 60L, not greater than 220L](#)

[Greater than 220L](#)







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Maximum authorized net capacity of each inner packaging	
Glass, earthenware or fiber inner packagings	Metal or plastic inner packagings
0.5L	0.5L
Label(s)	
<p>*Check for subsidiary labels Column (6) of §172.101, Hazardous Materials Table.</p>	
	
Markings: UN & *Orientation Arrows (two opposing sides)	
<p>*Inner packages >120 mL (4 fluid oz.)</p> 	<p>*if applicable</p>  <p>UN Code for Fiberboard Box (4G) and Variable inner-container material and configuration (V) Solids or inner Packagings State/country authorizing mark</p> <p>  4GV/X13/S/08/USA/+AQ2121 </p> <p> United Nations Packaging Symbol Packing Group tested and max. gross mass (kg) Last two digits of the year of manufacture Manufacturer certifying package </p>



**See Completed
Package**



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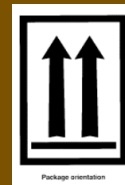




UN ID number, Proper Shipping Name,
Technical Name, and Consignee /
consignor name and address.



4GV/Y13/S/2020/USA/+FAA






**Required Text Markings: UN ID number, Proper Shipping Name,
Technical Name, and Consignee/Consignor Name and Address.**



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Maximum authorized net capacity of each inner packaging*	
Glass, earthenware or fiber inner packagings	Metal or plastic inner packagings
0.5L	IL
Label(s)	
<p>*Check for subsidiary labels Column (6) of §172.101, Hazardous Materials Table.</p>	
	
Markings	
<p>*Inner packages >120 mL (4 fluid oz.)</p> 	<p>*if applicable</p>  <p>UN Code for Fiberboard Box (4G) and Variable inner-container material and configuration (V)</p> <p>Solids or inner Packagings</p> <p>State/country authorizing mark</p> <p>United Nations Packaging Symbol</p> <p>Packing Group tested and max. gross mass (kg)</p> <p>Last two digits of the year of manufacture</p> <p>Manufacturer certifying package</p> <p>4GV/X13/S/08/USA/+AQ2121</p>



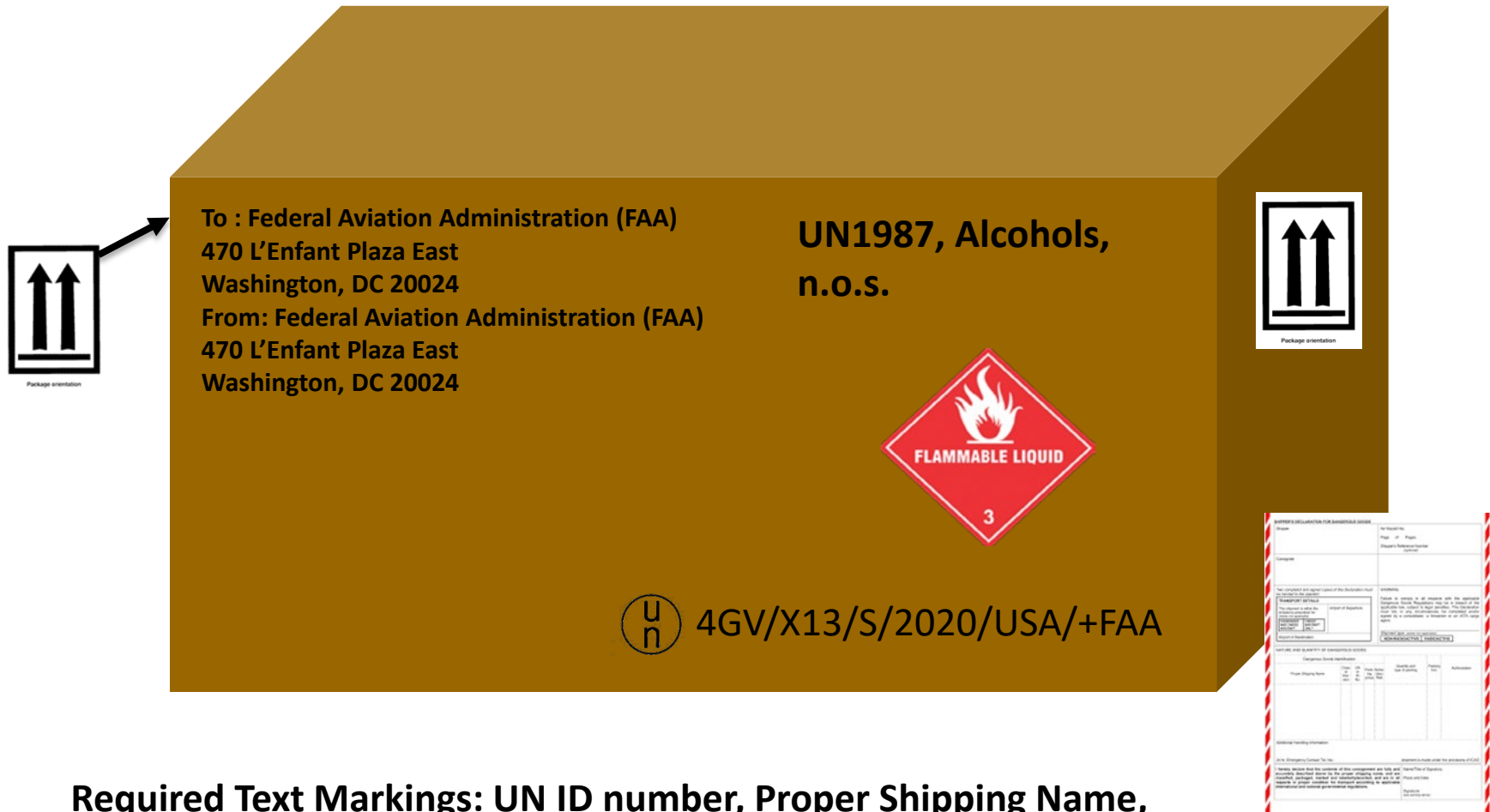
See Completed
Package



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PGI Flammable Liquids:






Required Text Markings: UN ID number, Proper Shipping Name, Technical Name, and Consignee/Consignor Name and Address.



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Maximum authorized net capacity of each inner packaging	
Glass, earthenware or fiber inner packagings	Metal or plastic inner packagings
1L	5L
Label	
<p>*Check for subsidiary labels Column (6) of §172.101, Hazardous Materials Table.</p>	
	
Markings	
<p>*Inner packages >120 mL (4 fluid oz.)</p> 	<p>*if applicable</p>  <p>UN Code for Fiberboard Box (4G) and Variable inner-container material and configuration (V)</p> <p>Solids or inner Packagings</p> <p>State/country authorizing mark</p> <p>United Nations Packaging Symbol</p> <p>Packing Group tested and max. gross mass (kg)</p> <p>Last two digits of the year of manufacture</p> <p>Manufacturer certifying package</p> <p>4GV/X13/S/08/USA/AQ2121</p>



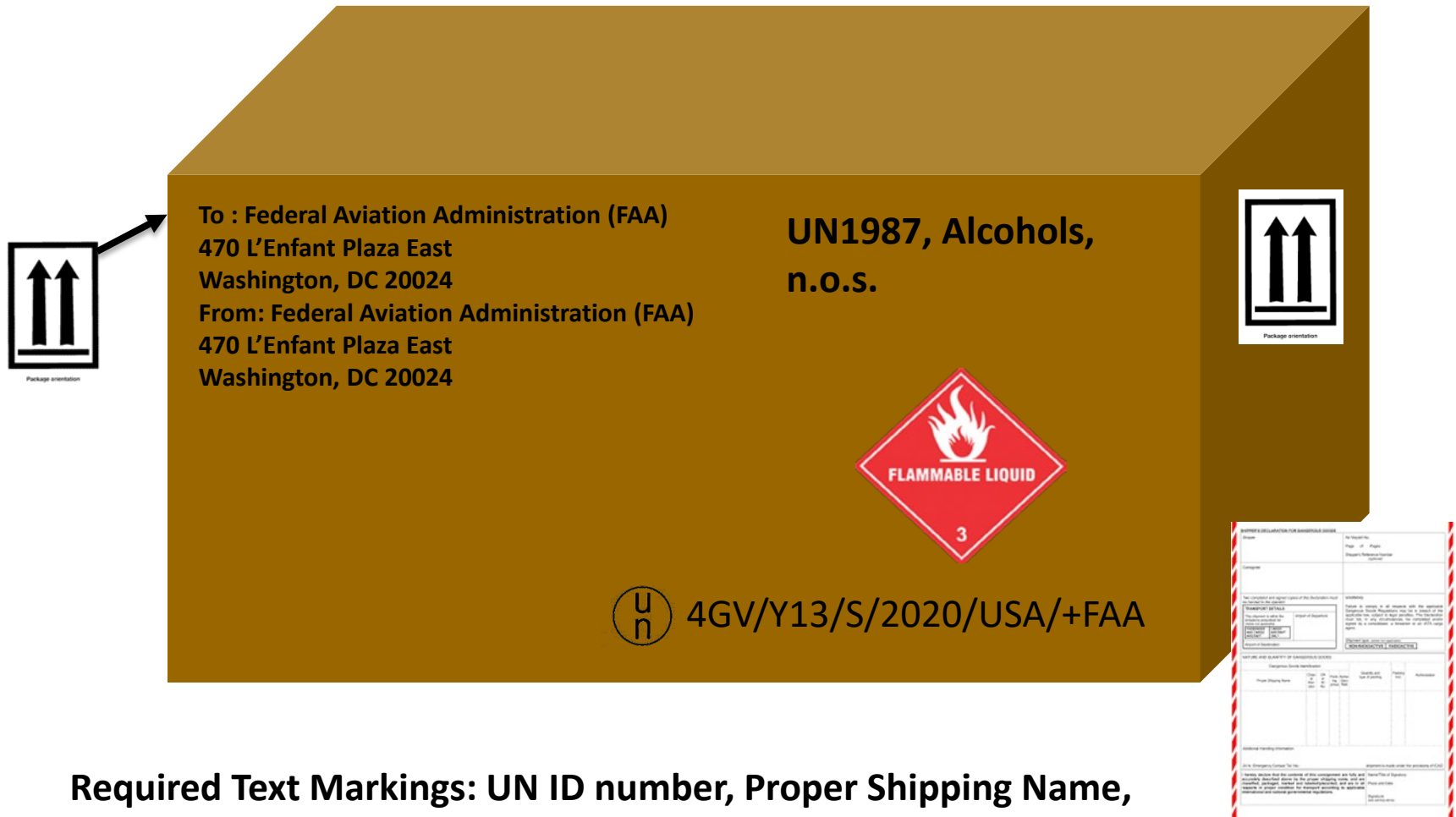
**See Completed
Package**



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PGII Flammable Liquids:



Required Text Markings: UN ID number, Proper Shipping Name, Technical Name, and Consignee/Consignor Name and Address.



Maximum authorized net capacity of each inner packaging	
Glass, earthenware or fiber inner packagings	Metal or plastic inner packagings
2.5L	10L
Label	
<p>*Check for subsidiary labels Column (6) of §172.101, Hazardous Materials Table.</p>	
	
Markings	
<p>*Inner packages >120 mL (4 fluid oz.)</p> 	
<p>UN Code for Fiberboard Box (4G) and Variable inner-container material and configuration (V)</p> <p>Solids or inner Packagings</p> <p>State/country authorizing mark</p> <p> *if applicable</p> <p>United Nations Packaging Symbol</p> <p>Packing Group tested and max. gross mass (kg)</p> <p>Last two digits of the year of manufacture</p> <p>Manufacturer certifying package</p> <p>4GV/X13/S/08/USA/+AQ2121</p>	



**See Completed
Package**



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PGII Flammable Liquids:


Package orientation

UN3272, Esters, n.o.s.



FLAMMABLE LIQUID
3

To : Federal Aviation Administration (FAA)
470 L'Enfant Plaza East
Washington, DC 20024
From: Federal Aviation Administration (FAA)
470 L'Enfant Plaza East
Washington, DC 20024


Package orientation

 4GV/Y13/S/2020/USA/+FAA







Required Text Markings: UN ID number, Proper Shipping Name, Technical Name, and Consignee/Consignor Name and Address.



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Maximum authorized net capacity of each inner packaging	
Glass, earthenware or fiber inner packagings	Metal or plastic inner packagings
5L	25L
Label	
<p>*Check for subsidiary labels Column (6) of §172.101, Hazardous Materials Table.</p>	
	
Markings	
<p>*Inner packages >120 mL (4 fluid oz.)</p>  <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  United Nations Packaging Symbol </div> <div style="text-align: center;"> UN Code for Fiberboard Box (4G) and Variable inner- container material and configuration (V) ↓ 4GV/X13/S/08/USA/+AQ2121 </div> <div style="text-align: center;"> Solids or inner Packagings ↓ 4GV/X13/S/08/USA/+AQ2121 </div> <div style="text-align: center;"> State/country authorizing mark ↓ 4GV/X13/S/08/USA/+AQ2121 </div> <div style="text-align: center;">  *if applicable </div> </div> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 10px;"> <div style="text-align: center;"> ↑ Packing Group tested and max. gross mass (kg) </div> <div style="text-align: center;"> ↑ Last two digits of the year of manufacture </div> <div style="text-align: center;"> ↑ Manufacturer certifying package </div> </div>	



See Completed
Package



Federal Aviation
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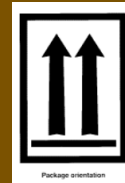
PGIII Flammable Liquids:



To : Federal Aviation Administration (FAA)
470 L'Enfant Plaza East
Washington, DC 20024

From: Federal Aviation Administration (FAA)
470 L'Enfant Plaza East
Washington, DC 20024

UN1987, Alcohols, n.o.s.






4GV/Y13/S/2020/USA/+FAA

[illegible]

Required Text Markings: UN ID number, Proper Shipping Name, Technical Name, and Consignee/Consignor Name and Address.



Maximum authorized net capacity <i>of each inner packaging</i>	
Glass, earthenware or fiber inner packagings	Metal or plastic inner packagings
No Limit	No Limit
Label	
<p>*Check for subsidiary labels Column (6) of §172.101, Hazardous Materials Table.</p>	
	
Markings	
<p>*Inner packages >120 mL (4 fluid oz.)</p>	
<div>  <div> <p>UN Code for Fiberboard Box (4G) and Variable inner-container material and configuration (V)</p> <p>Solids or inner Packagings</p> <p>State/country authorizing mark</p> <p>4GV/X13/S/08/USA/+AQ2121</p> <p>United Nations Packaging Symbol</p> <p>Packing Group tested and max. gross mass (kg)</p> <p>Last two digits of the year of manufacture</p> <p>Manufacturer certifying package</p> </div> <div>  <p>*if applicable</p> </div> </div>	




**See Completed
Package**



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PGIII Flammable Liquids:



Package orientation

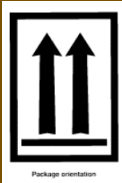
UN3528, Engine, internal combustion, flammable liquid powered


**To : Federal Aviation Administration (FAA)
470 L'Enfant Plaza East
Washington, DC 20024**

**From: Federal Aviation Administration (FAA)
470 L'Enfant Plaza East
Washington, DC 20024**


FLAMMABLE LIQUID
3

 **4GV/Y13/S/2020/USA/+FAA**


Package orientation



Required Text Markings: UN ID number, Proper Shipping Name, Technical Name, and Consignee/Consignor Name and Address.



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Cargo Aircraft

Maximum net quantity per package from Column 9b of the [§172.101](#) table:

[Not greater than 2.5L](#)

[Greater than 2.5L. not greater than 30L](#)

[Greater than 30L, not greater than 60L](#)

[Greater than 60L, not greater than 220L](#)

[Greater than 220L](#)



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Maximum authorized net capacity of each inner packaging

Glass, earthenware or fiber inner packagings

Metal or plastic inner packagings

1L

1L

Label

*Check for subsidiary labels
Column (6) of §172.101,
Hazardous Materials Table.



Markings

*Inner packages
>120 mL (4 fluid
oz.)



UN Code for Fiberboard Box
(4G) and Variable inner-
container material and
configuration (V)

Solids or inner
Packagings

State/country
authorizing mark

*if applicable



United Nations
Packaging Symbol

4GV/X13/S/08/USA/+AQ2121

Packing Group
tested and
max. gross
mass (kg)

Last two digits
of the year
of manufacture

Manufacturer certifying
package



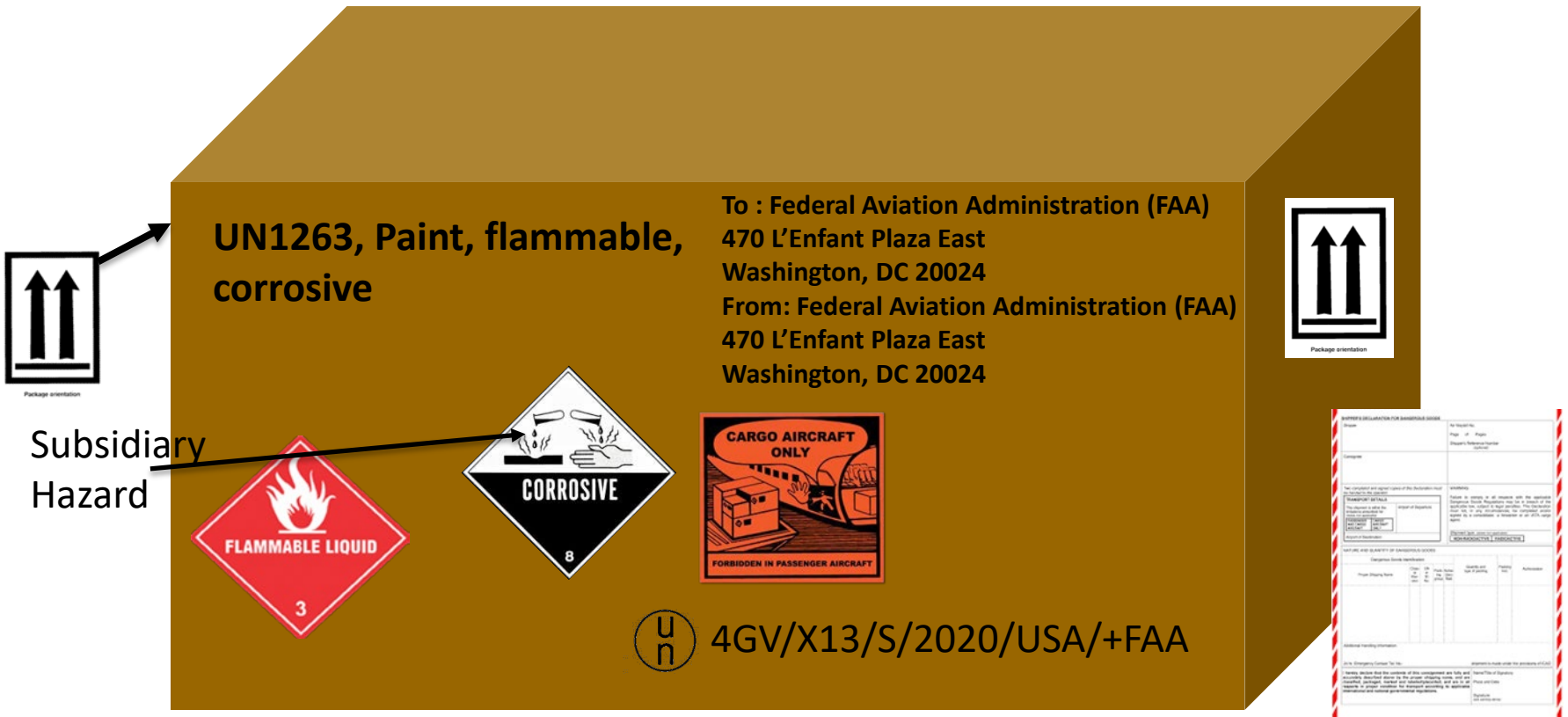
See Completed
Package



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PGI Flammable Liquids with Subsidiary Hazard and Cargo Aircraft Only Label:



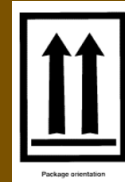
Required Text Markings: UN ID number, Proper Shipping Name, Technical Name, and Consignee/Consignor Name and Address.









Package orientation

UN1263, Paint



4GV/X13/S/2020/USA/+FAA

[illegible]

Maximum authorized net capacity of <i>each inner packaging</i>	
Glass, earthenware or fiber inner packagings	Metal or plastic inner packagings
5L	10L
Label	
<p>*Check for subsidiary labels Column (6) of §172.101, Hazardous Materials Table.</p>	
 	
Markings	
<p>*Inner packages >120 mL (4 fluid oz.)</p>	
<div>  <div> <p>UN Code for Fiberboard Box (4G) and Variable inner-container material and configuration (V)</p> <p>Solids or inner Packagings</p> <p>State/country authorizing mark</p> </div> <p>4GV/X13/S/08/USA/+AQ2121</p> <div> <p>United Nations Packaging Symbol</p> <p>Packing Group tested and max. gross mass (kg)</p> <p>Last two digits of the year of manufacture</p> <p>Manufacturer certifying package</p> </div> </div> <div> <p>*if applicable</p>  </div>	



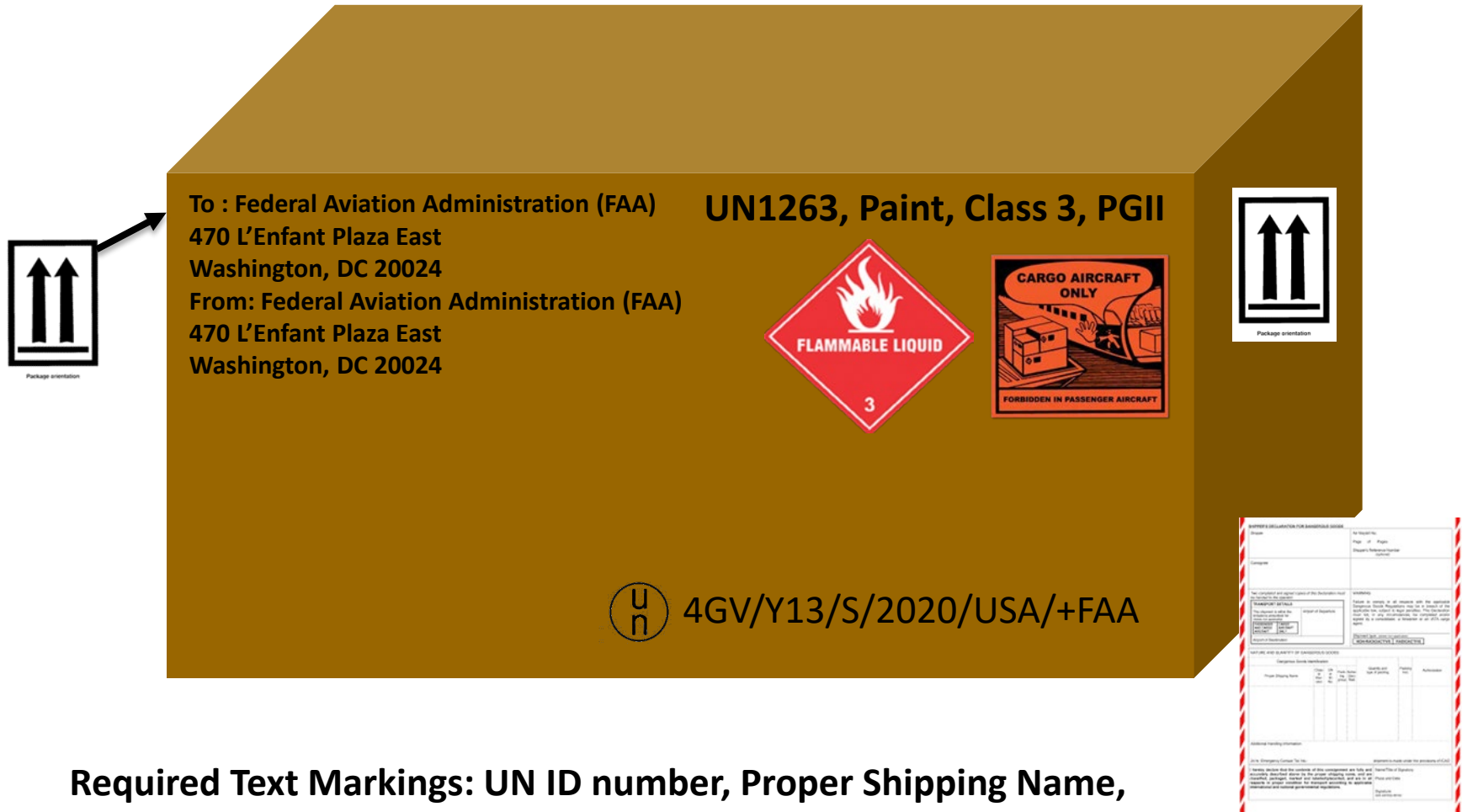
**See Completed
Package**



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PGII Flammable Liquids Cargo Aircraft Only:



Maximum authorized net capacity of each inner packaging	
Glass, earthenware or fiber inner packagings	Metal or plastic inner packagings
5L	25L
Label	
<p>*Check for subsidiary labels Column (6) of §172.101, Hazardous Materials Table.</p>	
Markings	
<p>*Inner packages >120 mL (4 fluid oz.)</p>	
<div> </div> <div> <p>UN Code for Fiberboard Box (4G) and Variable inner-container material and configuration (V)</p> <p>Solids or inner Packagings</p> <p>State/country authorizing mark</p> <p>*if applicable</p> </div> <div> <p>4GV/X13/S/08/USA/+AQ2121</p> </div> <div> <p>United Nations Packaging Symbol</p> <p>Packing Group tested and max. gross mass (kg)</p> <p>Last two digits of the year of manufacture</p> <p>Manufacturer certifying package</p> </div>	



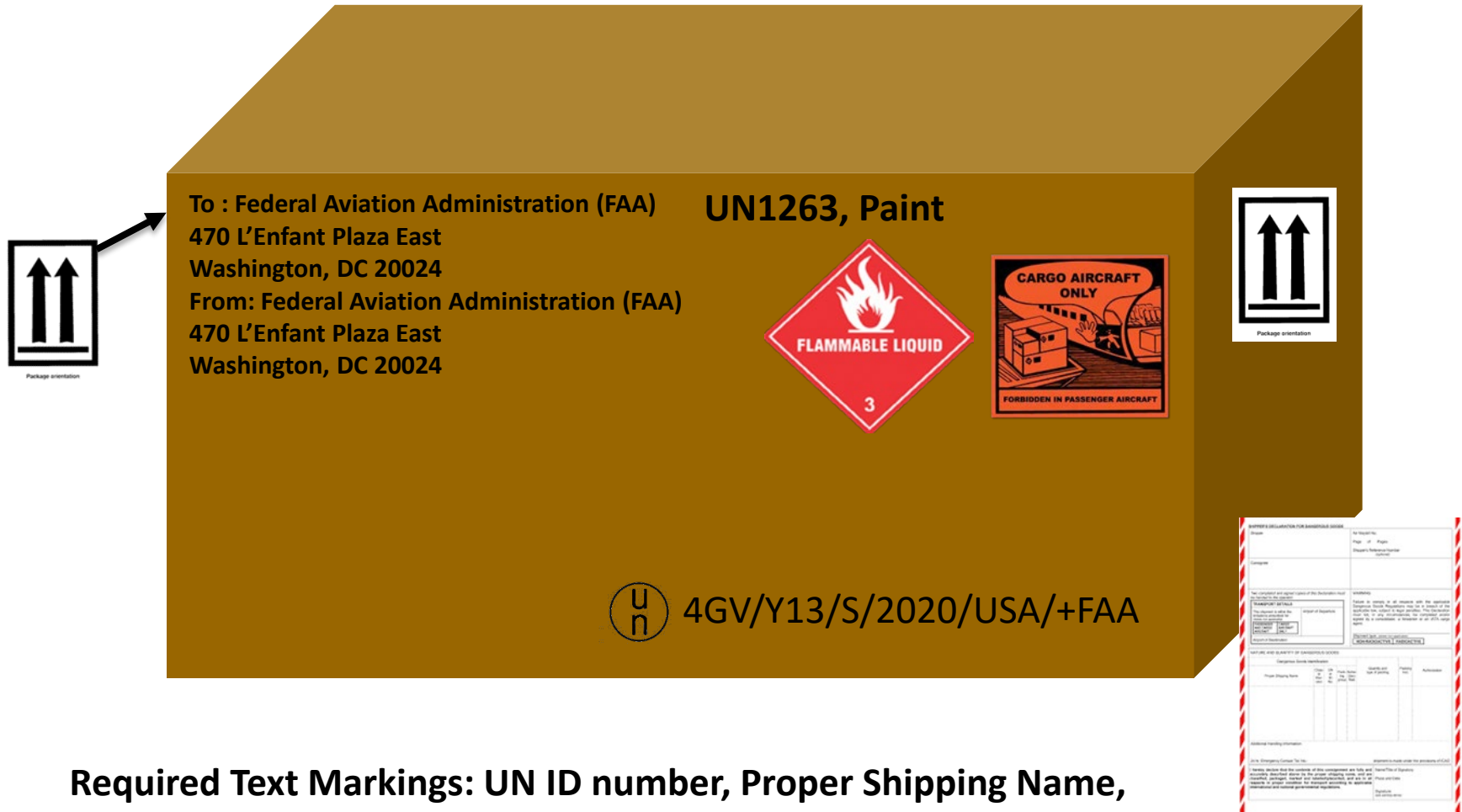
**See Completed
Package**



**Federal Aviation
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PGIII Flammable Liquids Cargo Aircraft Only:



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Maximum authorized net capacity of <i>each inner packaging</i>	
Glass, earthenware or fiber inner packagings	Metal or plastic inner packagings
No Limit	No Limit
Label	
<p>*Check for subsidiary labels Column (6) of §172.101, Hazardous Materials Table.</p> <div style="display: flex; justify-content: space-around; align-items: center;">   </div>	
Markings	
<div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 25%;"> <p>*Inner packages >120 mL (4 fluid oz.)</p>  </div> <div style="width: 50%; text-align: center;"> <p>UN Code for Fiberboard Box (4G) and Variable inner-container material and configuration (V) Solids or inner Packagings State/country authorizing mark</p> <div style="display: flex; align-items: center; justify-content: center;">  4GV/X13/S/08/USA/+AQ2121  </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="text-align: center;"> <p>↑</p> <p>United Nations Packaging Symbol</p> </div> <div style="text-align: center;"> <p>↑</p> <p>Packing Group tested and max. gross mass (kg)</p> </div> <div style="text-align: center;"> <p>↑</p> <p>Last two digits of the year of manufacture</p> </div> <div style="text-align: center;"> <p>↑</p> <p>Manufacturer certifying package</p> </div> </div> </div> <div style="width: 25%; text-align: right;"> <p>*if applicable</p> </div> </div>	



**See Completed
Package**



**Federal Aviation
Administration**





**UN3528, Engine, internal
combustion,
flammable liquid powered**

**To : Federal Aviation Administration (FAA)
470 L'Enfant Plaza East
Washington, DC 20024
From: Federal Aviation Administration (FAA)
470 L'Enfant Plaza East
Washington, DC 20024**



4GV/Y13/S/2020/USA/+FAA



**Required Text Markings: UN ID number, Proper Shipping Name,
Technical Name, and Consignee/Consignor Name and Address.**



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Limited Quantities

Select Packing Group:



Packing Group	PG I	PG II	PG III
Danger	GREAT	MEDIUM	MINOR
Drop Test	1.8m	1.2m	.8m
Flashpoint/ Boiling Point	FP NA BP $\leq 35^{\circ}\text{C}$	FP $\leq 23^{\circ}\text{C}$ BP $\geq 35^{\circ}\text{C}$	FP $23-60^{\circ}\text{C}$ BP $\geq 35^{\circ}\text{C}$



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Packing Group I Flammable Liquids Are Forbidden



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Glass, earthenware or fiber inner packagings	Metal or plastic inner packagings	authorized net quantity of each outer package	Total Gross Mass Per Package
PG II: 0.5L	PG II: 0.5L	PG II: 1L*	30 kg

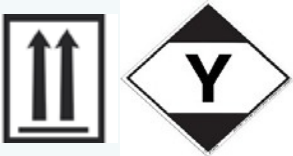
*Maximum net quantity per outer package with corrosive subsidiary risk (e.g., UN2924, UN3286) is 0.5L. For Class 3 base materials as part of a Polyester resin kit (UN3269), see §173.165 of this part for additional requirements, as applicable. Inner packaging limit for UN3269 base material is 1.0 L. For Fuel cell cartridges *containing flammable liquids* (UN3473), see §173.230 of this part.

Labels

*Check for subsidiary



Markings



Proper Shipping Name, Technical Name, and UN ID number Consignee / consignor name and address.
 **Orientation arrows are not required on packages containing liquid hazardous materials in inner packagings of 120 mL (4 fluid oz.) or less when packed with sufficient absorption material between the inner and outer packagings to completely absorb the liquid contents.

PGII Flammable Liquids, Limited Quantity:



Required Text Markings: UN ID number, Proper Shipping Name, Technical Name, and Consignee/Consignor Name and Address.



Glass, earthenware or fiber inner packagings	Metal or plastic inner packagings	authorized net quantity of each outer package	Gross Mass Per Package
PG III: 2.5L*	PG III: 5.0L*	PG III: 10L*	30 kg
*Corrosive subsidiary risk (e.g., UN2924) or toxic (e.g., UN1992) is 1L	*Corrosive subsidiary risk (e.g., UN2924) or toxic (e.g., UN1992) is 1L		

*Maximum net quantity per outer package with corrosive subsidiary risk (e.g., UN2924) is 1L and toxic subsidiary risk (e.g., UN1992) is 2L. For Class 3 base materials as part of a Polyester resin kit (UN3269), see §173.165 of this part for additional requirements, as applicable. Inner packaging limit for UN3269 base material is 1.0 L.

Labels

*Check for subsidiary.



Markings



Proper Shipping Name, Technical Name, and UN ID number Consignee / consignor name and address.

**Orientation arrows are not required on packages containing liquid hazardous materials in inner packagings of 120 mL (4 fluid oz.) or less when packed with sufficient absorption material between the inner and outer packagings to completely absorb the liquid contents.




**See Completed
Package**





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PGIII Flammable Liquids, Limited Quantity:



Package orientation


UN1263, Paint, Class 3, PGIII



To : Federal Aviation Administration (FAA)
470 L'Enfant Plaza East
Washington, DC 20024

From: Federal Aviation Administration (FAA)
470 L'Enfant Plaza East
Washington, DC 20024


Package orientation



Required Text Markings: UN ID number, Proper Shipping Name, Technical Name, and Consignee/Consignor Name and Address.



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Excepted Quantities	Inner packaging limits	authorized net quantity of each outer package (liquids)	authorized net quantity of each outer package (solids)
Packing Group I	30 g (1 ounce) or 30 mL (1 ounce) for solids or liquids	300 mL (0.08 gallons)	300 g (0.66 pounds)
Packing Group II		500 mL (0.1 gallons)	500 g (1.1 pounds)
Packing Group III		1 L (0.2 gallons)	1 kg (2.2 pounds)

Training

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

Shipping Papers

For transport by air, a shipping paper is not required, except that, if a document such as an airwaybill accompanies a shipment, the document must include the statement “Dangerous Goods in Excepted Quantities” and indicate the number of packages.

Marking



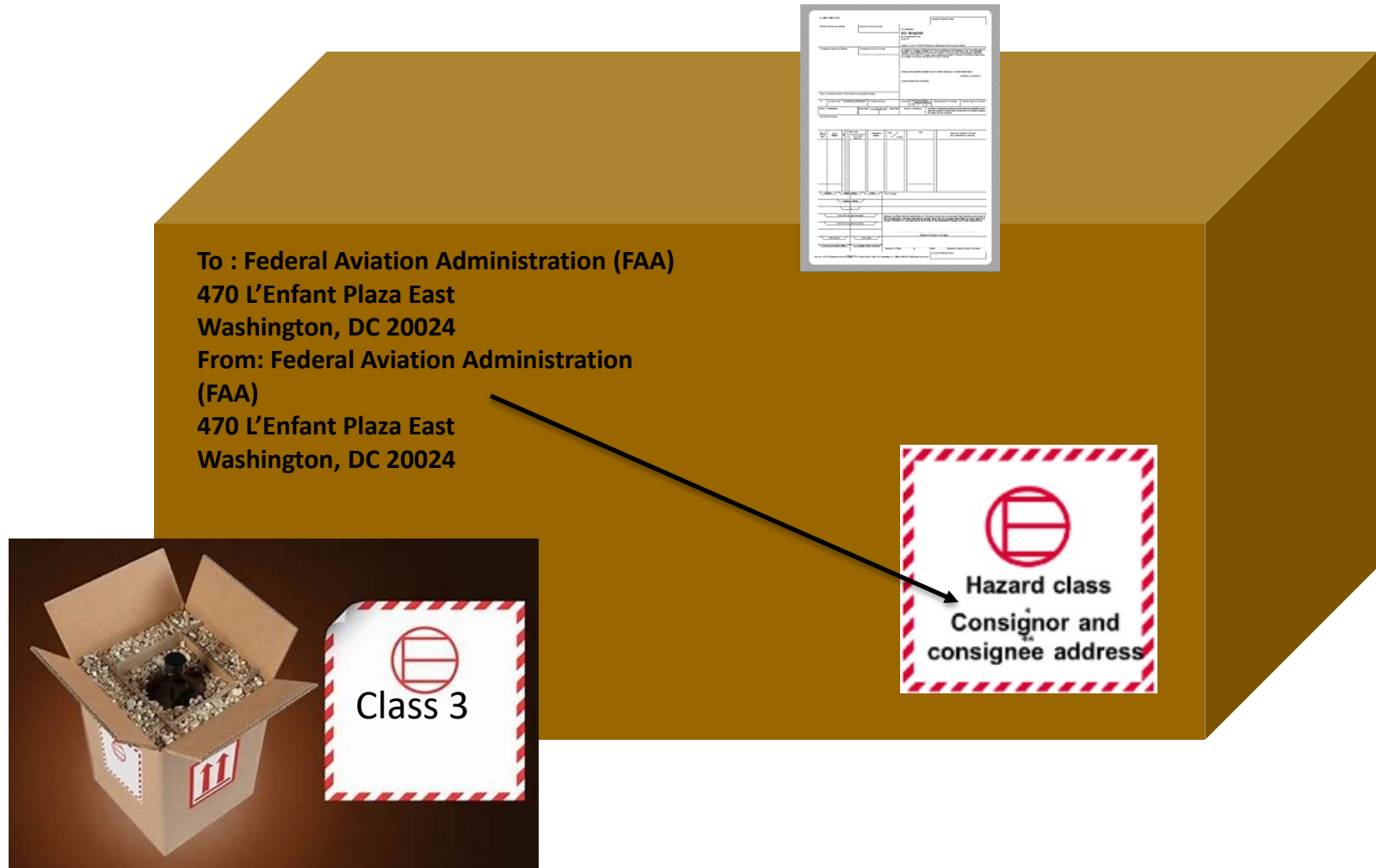
See Completed Package



Federal Aviation Administration



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



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