2002 EDITION

STUDENT

Hazardous Materials Transportation Training Modules

MODULE 4
Placarding

U.S. Department of Transportation
Research and Special Programs
Administration

Script

Visual

Narrative

1

This module presents general placarding requirements, placarding exceptions, and placard placement and design. Placards are placed on bulk packagings, freight containers, transport vehicles, and rail cars to alert the public of the potential dangers of the product being transported and to guide emergency responders in the event of an incident or accidental release.

2

Unless the regulations tell you differently, each person who offers or transports a regulated hazardous material must comply with the placarding requirements. They are located in Subpart F of the HMR. Click on the buttons to learn more.

3

The placarding requirements do not apply to small quantities;

Limited Quantities;

Infectious substances;

Other Regulated Material;

Combustible liquids in non-bulk packaging; and

materials prepared according to 173.13.

Quick Review #1

Instructions: Select the best answer from the four choices provided.

Placards are not required for _____ , limited quantities, ORM-Ds, combustible liquids in non-bulk packagings, small quantities, and materials prepared in accordance with 173.13.

A. radioactive materials
B. hazardous wastes
C. infectious substances
D. chemical kits

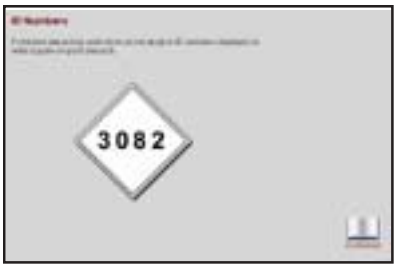
4

Placards may not be placed or displayed on a transport vehicle, portable tank, or freight container unless the transported material is a hazardous material; or the placard represents a hazard of the material; or the placarding conforms to the regulations.

5

Placards must clearly communicate the hazard of the material being transported. This is crucial in an emergency situation. Therefore, the required placard(s) must have no visual competition. In other words, do not use any sign or device that, by its color, shape, content or design, may be confused with a placard on a transport vehicle, portable tank, or freight container.

6



These restrictions do not apply to the display of an identification number on a white square-on-point configuration prescribed by 172.336(b).

7

There are exceptions to these prohibitions. They do not apply if the placards used are in conformance with the International Maritime Dangerous Goods Code (IMDG), the Transportation of Dangerous Goods (TDG) Regulations, or the UN Recommendations.

Quick Review #2

Instructions: Select the term that correctly completes the statement.

Terms:

A. identification number	B. TDG	C. ICAO	D. registration number
E. hazardous waste	F. placard	G. marking	H. hazardous material

Statements:

1. Do not placard a vehicle or freight container unless it is transporting a _____, and the placard correctly identifies the hazard.

2. Do not place a color, shape, or design on a vehicle or container that could be confused with a _____.

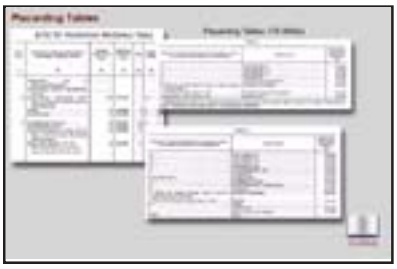
3. Restrictions do not apply to the display of an _____ on a white square-on-point configuration.

4. Placards in conformance with Canada's _____ Regulations, the IMDG Code, or the UN Recommendations may be used in place of the HMR placards.

8

Placards must be displayed on each end and each side of a bulk packaging, freight container, unit load device, transport vehicle, and rail car containing any quantity of a hazardous material, unless the HMR says otherwise.

9



There are two placarding tables in 172.504(e). Do not confuse these tables with the Hazardous Materials Table in 172.101. When determining which placards must be used and what options are available, both placarding tables must be considered. It is important to keep the two placarding tables separate when determining placarding requirements.

Quick Review #3

Instructions: Select the correct answer for each statement from the choices provided.

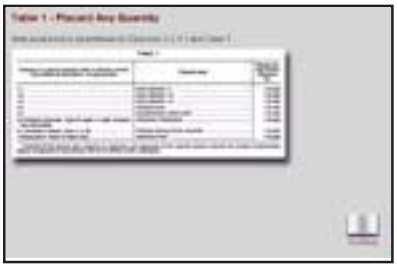
True False 1. Except as otherwise provided, each side and each end of a transport vehicle or freight container containing any quantity of a hazardous material, must be placarded.

True False 2. The Hazardous Materials Table is in 172.101, as well as the placarding tables, Table 1 and Table 2.

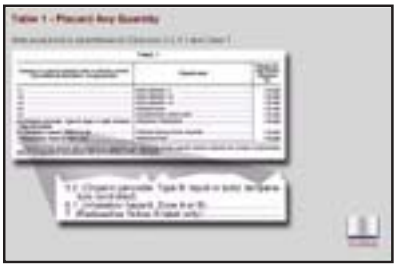
10

First, we'll look at the basic placarding requirements. Then, we'll look at some of the "unless otherwise provided" exceptions and options. Go ahead and click on the Table 1 button to find the first of the two placarding tables in 172.504(e).

11

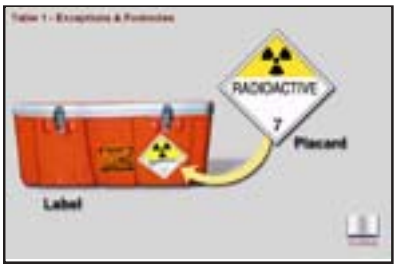


Placarding Table 1 is straightforward. Any quantity of any hazardous material listed in Table 1 requires placarding.



Pay attention to the limitations in parentheses for Divisions 5.2, 6.1 and Class 7.

12



For example, the exception for Class 7 in Table 1 states "Radioactive Yellow III label only." The footnote to Table 1, notes that a placard is also required for exclusive use shipments of low specific activity material and surface contaminated objects when shipped in accordance with 173.427(a).

If a shipment of radioactive material is labeled WHITE I or YELLOW II, placarding is not required.

13

Each motor vehicle used to transport a package of highway route controlled quantity Class 7 (radioactive) material, as defined in 173.403, must display a RADIOACTIVE placard on a square white background.

Quick Review #4

Instructions: Select the term that correctly completes the statement.
Terms:
A. Exemptions B. limitations
C. RADIOACTIVE YELLOW III D. RADIOACTIVE YELLOW II

Statements:
1. Always consult the _____ in parentheses to Table 1 when determining if placards are required.

2. A placard is required if the package has a _____ label on it. No placard is required if the package has a RADIOACTIVE WHITE I or _____ label on it.

14

The DANGEROUS placard may not be used on a cargo tank, portable tank, or tank car. Instead, the specific placard for each hazardous material must be applied. In addition, the DANGEROUS placard may not be used when placarding Table 1 materials.

15

Placarding Table 2 lists the remainder of the hazardous material classes that require placards. However, Table 2 materials require placarding only when the aggregate gross weight of all hazardous materials on the transport vehicle or in the freight container is 454 kg (1,001 lbs) or more. Transport vehicles and freight containers transporting less than 454 kg (1,001 lbs) aggregate gross weight of Table 2 materials may be placarded. Placards are not required, however. Additional placarding exceptions are provided in 172.504(f).

16

A vehicle containing both Division 1.1 and 1.2 explosives that is placarded with an EXPLOSIVES 1.1 placard as required, does not need to be placarded with an EXPLOSIVES 1.2 placard.

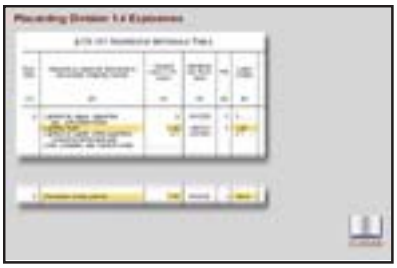
17

A FLAMMABLE placard may be used in place of a COMBUSTIBLE placard on a cargo tank or portable tank, or a compartmented tank car containing both flammable and combustible liquids.

18

Look at the entry for Division 1.4 explosives in Placarding Table 2. The required placard is EXPLOSIVES 1.4.

Now look at 172.504(f) (6). The EXPLOSIVES 1.4 placard is not required for those Division 1.4 materials in Compatibility Group S, when they are not required to be labeled 1.4S.



Let's compare a 454 kg (1,001 lbs) shipment of empty primed grenades and a 454 kg (1,001 lbs) shipment of fuse lighters. Both "Grenades, empty primed," and "Lighters, fuse," are listed in the HMT. Both are in compatibility Group S, but only "Lighters, fuse," require a 1.4S label per Column 6 of the HMT.

The "Lighters, fuse" shipment requires an EXPLOSIVES 1.4 placard since the package must be labeled Explosive 1.4S; and the shipment does not contain less than 454 kg (1,001 lbs) aggregate gross weight.

The "Grenades, empty primed," shipment does not require a placard even though it weighs 454 kg (1,001 lbs). That's because the material does not require a label.

19

If a transport vehicle or freight container carries non-bulk packages containing two or more hazard classes from Table 2 requiring different placards, the DANGEROUS placard may be used in place of the hazard class placards.
For example, a transport vehicle is carrying a combined shipment consisting of 454 kg (1,001 lbs) Class 3 (flammable liquid), 364 kg (800 lbs) of Class 8 (corrosives) and 136 kg (300 lbs) of nonflammable gas. Instead of the placards required for each class, the DANGEROUS placard may be used on the transport vehicle.

20

The specific Table 2 placard must be used when 1,000 kg (2,205 lbs) or more of one class of hazardous materials is loaded at one facility. In this case, the DANGEROUS placard may not be used for that material. Two shipments of hazardous materials loaded at one facility are displayed here. Each shipment is over 1,000 kg. The hazard classes are not the same. Therefore, the vehicle would require placarding specified for each hazard class. The DANGEROUS placard may not be used with these shipments. If the two shipments individually weighed less than 1,000 kg, you could use either the placards specified for the individual materials or the DANGEROUS placard. This is true whether loaded at the same or separate facilities. The 1,000 kg rule was enacted to provide more specific identification of potential hazards of materials in mixed loads. However, it only applies when the 1,000 kg of one hazard class are loaded at one facility.

21

No placard is required for Table 2 materials when the aggregate gross weight is less than 454 kg or 1,001 lbs; except that Table 2 materials must be placarded when shipped in bulk packages such as

tank cars;

cargo tanks;

portable tanks;

and other bulk packagings;

identified on a shipping paper as a “Poison-Inhalation Hazard;

shipped by air or water;

or the material has a subsidiary hazard of “DANGEROUS WHEN WET.” Poison or toxic-inhalation hazard materials will be discussed later in this module.

22

When determining placarding requirements, it is not necessary to include the weight of any non-bulk packaging that contains only residue of a Table 2 hazardous material.

We will now do Student Activity #1. Please open your manual to Student Activity #1, pages 26-28.

Quick Review #5

Instructions: Select the term that correctly completes the statement.
Terms:

A. 1,000 lbs.	B. 1,001 lbs.	C. gross weight	D. net weight
E. POISON	F. cargo tanks	G. chlorine tanks	H. DANGEROUS
I. Table 1	J. Table 2		

Statements:

1. Hazardous materials listed in Table 2 must have an aggregate gross weight of 454 kg _____ or more before a placard is required.

2. When placarding Table 2 hazardous materials affected by 172.504(f)(6), both labeling and aggregate _____ of 454 kg (1,001 lbs.) or more must be considered.

3. Use the specific placard from Table 2 when 1,000 kg (2,205 lbs.) or more of the hazard class are loaded at one facility. Do not use the _____ placard for these shipments.

4. The DANGEROUS placard may not be used for materials listed in placard Table 1. The Dangerous placard may not be used on _____, portable tanks, or tank cars.

5. No placard is required for less than 454 kg (1,001 lbs.) of _____ materials. Placards are required for all Table 2 materials shipped in bulk packaging, by air or water, and for poison-inhalation hazard materials.

23

When a shipper offers hazardous materials to a carrier for highway transportation, the shipper must also offer the required placards, unless the carrier's vehicle is already properly placarded for the materials. The motor carrier may not transport the hazardous materials unless the proper placards are affixed to the vehicle. Click on each button to learn about the placarding requirements for other types of containers.

24

A different approach is provided for placarding a hazardous materials shipment offered in a bulk package. The person offering the hazardous material must affix the required placards before the shipment is offered.

25

A portable tank of less than 3,785 liters or 1,000 gallons capacity needs to be placarded on only two opposite sides or labeled on at least two sides or two ends as provided in 175.514(c)(1).

26

Each bulk packaging, including a cargo tank, or portable tank that is required to be placarded when it contains a hazardous material, must remain placarded when it is empty unless it is sufficiently cleaned of residue and purged of vapors; or refilled with a material requiring different placards or no placards to such an extent that any residue remaining in the packaging is no longer hazardous. The placard must be removed if the bulk packaging is refilled with a nonregulated material or a hazardous material that requires a different placard. The placard must be removed once the bulk packaging is cleaned and purged of all potentially hazardous vapors.

Quick Review #6

Instructions: Select the correct answer from the choices provided.

The initial placard must remain on a bulk package container until the container is either sufficiently cleaned and purged or refilled with a nonregulated material or a hazardous material requiring a different placard.

A. True
B. False

27

For rail transportation, placards may be displayed on transport vehicles,

freight containers,

or portable tanks instead of the rail car itself. If none of the transport vehicles or freight containers require placarding, no placard is required on the rail car.

Quick Review #7

Instructions: Select the best answer from the four choices provided.

For transportation by _____, placards may be displayed on transport vehicles, freight containers, or portable tanks instead of the rail car.

A. water
B. air
C. rail
D. highway

28

Placarding also applies to freight containers and unit load devices. A freight container is a reusable container that has a volume greater than 1.8 cubic meters or 64 cubic feet, and is designed to be lifted with its contents intact. It is intended primarily for containment of packages during transportation.

29

A unit load device can be any type of freight container, including an aircraft pallet with a net or an aircraft pallet with a net over an igloo.

30

Placards are not required when these same containers and devices are transported by air only, provided that they meet the International Civil Aviation Organization (ICAO) Technical Instructions and is labeled in accordance with Subpart E, including 172.406(e).

31

If these containers or unit load devices are less than 18 cubic meters or 640 cubic feet capacity

and are offered and transported by air only, the person who offers or loads the hazardous materials may affix either

one placard or two labels on at least two ends or two sides.

32

When transported by air, a freight container or unit load device with a capacity less than 18 m^3 (640 cubic feet) of RADIOACTIVE YELLOW III-labeled material must display one RADIOACTIVE placard and two RADIOACTIVE YELLOW III labels, or be identified as containing a hazardous material by a label or tag, in accordance with the ICAO Technical Instructions.

Quick Review #8

Instructions: Select the best answer from the four choices provided.

When required, placard _____ of freight containers and unit load devices that have a capacity of 18 cubic meters (640 cubic feet) or more.

A. both ends
B. both sides
C. both ends and both sides
D. at least two surfaces

33

The required placard on the front of a motor vehicle may be on the front of a truck tractor instead of, or in addition to, the placard on the attached cargo body.

If visibility requirements are met, freight containers or portable tanks may be placarded instead of the motor vehicle.

But, if a portable tank or freight container requiring placarding is inside a closed transport vehicle, the van type trailer must also be placarded.

34

Each placard must be securely attached and maintained in good condition. Placards must be located clear of apparatuses and devices, away from dirt and water from wheels, and at least three inches from any detracting markings. The words and/or numbers on the placard(s) must be displayed horizontally.

35

There are some special placarding provisions that the shipper and the carrier must follow. The first special requirement pertains to any amount of certain poisonous or toxic materials.

When the shipping paper describes a material as a “Toxic-Inhalation Hazard” or a “Poison- Inhalation Hazard,” the POISON INHALATION HAZARD or POISON GAS placard must be displayed on each side and each end of the transport vehicle, portable tank, or freight container. The placard must be displayed in addition to any other required placard. If the primary hazard is Poison or Toxic, duplication of the Poison-Inhalation Hazard or Poison Gas placard is not required.

As an example, a Class 3 material (Flammable liquid) is offered for transportation. The shipping paper bears the notation, “Poison-Inhalation Hazard”. Therefore, the transport vehicle, freight container or portable tank must be placarded FLAMMABLE and POISON-INHALATION HAZARD.

Quick Review #9

Instructions: Select the correct answer from the choices provided.

A POISON – INHALATION HAZARD placard must appear on each side and each end of a transport vehicle, portable tank or freight container for any amount of "Poison – Inhalation Hazard" material.

A. True
B. False

36

When displayed on a railcar, the following placards must be displayed on a square white background: Division 1.1 Explosive; Division 1.2 Explosive; Division 2.3, Hazard Zone A; Division 6.1, PG I, Hazard Zone A; and Division 2.1 in DOT 113 tank cars.

Rail cars containing chemical ammunition that is both a Division 1.1 or 1.2 explosive and a Poison Inhalation Hazard material, must be placarded EXPLOSIVES 1.1 OR 1.2 AND POISON GAS or POISON-INHALATION HAZARD.

We will now do Student Activity #2. Please open your manual to Student Activity #2, pages 29-31.

37

Placards may be modified in certain instances. The word "GASOLINE" may be used in place of the word "FLAMMABLE" on the placard of a cargo or portable tank transporting gasoline by highway. As long as fuel oil is not classed as Flammable liquid, the words "FUEL OIL" may be used in place of the word "COMBUSTIBLE" on the placard. However, the fuel oil must be in a cargo or portable tank transported by highway.

38

Placarding is the joint responsibility of the shipper and the carrier. Those who offer, load, and/or transport hazardous materials must comply with the placarding regulations. If the required placard is missing or damaged, no matter what the reason, the shipment must not be transported.

39

If you are a shipper, make sure you offer or affix the required placards for the materials before you ship them. If you are a carrier, know what you are accepting for transportation. If the placards are not correct, do not accept the shipment!

Placarding Summary

Placards not required for

- Infectious substances, ORM-D materials and Limited Quantities; 172.500(b)(1)(2)(3)
- Combustible Liquids in non-bulk packagings; 172.500(b)(6)
- Non-bulk packagings with residue of Table 2 material; 172.504(d)
- Small Quantities; 173.4, 172.500(b)(5)
- Any material excepted from placarding in a packaging section. 173.159(e),173.320(a)

Placards required for

- Any amount of Table 1 material. Check limitations.
- Any amount of material identified on a shipping paper as "Poison-Inhalation Hazard." Placard "POISON-INHALATION HAZARD" in addition to any other required placard(s).
- Any shipment of 1,000 kg (2,205 lbs) or more of one class of Table 2 material loaded at one loading point. Use placard specified in table.
- Transport vehicle or freight containers with 454 kg (1,001 lbs) or more aggregate gross weight of Table 2 material. Use placard(s) specified in Table 2 or DANGEROUS placard, if authorized.

Note: Do not combine materials from Table 1 and Table 2 when determining placarding requirements.

Compliance Checklist

Placarding

Placards	Violations	49 CFR
1. Applicability		172.500
2. Prohibited Placarding		172.502
3. Basic Requirement		172.504
4. Poison Inhalation Hazard		172.505
5. Shipper Requirement		172.506(a)
6. Carrier Requirement		172.506(a)(1)
7. Highway Route Control Quantity (RAM)*		172.507(a)
8. Rail Basic Requirement		172.508
9. Rail Special Provisions		172.510
10. Freight Containers 18 cubic meters (640 cu ft) or more		172.512(a)
11. Freight Containers less than 18 cubic meters (640 cu ft)		172.512(b)
12. Cargo Tanks/Portable Tanks		172.514
13. Visibility and Display		172.516
14. General Specifications for Placards		172.519

* Radioactive Materials

Student Activity

Placarding Student Activity

Student Activity #1

To the Instructor

The objective of this student activity is to provide a practical placarding exercise. The student is provided with transportation situations where hazardous material may or may not require placarding.

Directions to the Student(s)

Student Activity #1 has seven situations relating to the transportation of hazardous material. Determine what placard(s), if any, **must** be displayed and/or offered. Following each placarding situation, there is a space to write in the name of the placard and the HMR reference. If no placards are required, write "none". The DANGEROUS placard may be used when appropriate.

Self-Evaluation

The student activity will evaluate your skill and facility in the use of the HMR to determine placarding requirements. When you have completed and checked your work for accuracy, review the student activity with the instructor.

Placarding Student Activity

Student Activity #1

1. A truck is transporting:

   - 204 kg (450 lbs) of Class 7 (radioactive material) labeled YELLOW-III;
   - 227 kg (500 lbs) of Benzene, a Class 3 (flammable liquid).

   Placard(s) Required _____

   Reference(s) _____

2. A truck is transporting:

   - 363 kg (800 lbs) of Class 8 (corrosive material),
   - 9.1 kg (20 lbs) of Division 2.2 (nonflammable gas),
   - 227 kg (500 lbs) of Class 3 (flammable liquid).

   Placard(s) Required _____

   Reference(s) _____

3. A rail car is transporting:

   - 2,359 kg (5,200 lbs) of Class 3 (flammable liquid), packaged and described as limited quantity;
   - fifty 208 liter (55 gallon) empty drums which have residue of Class 8 (corrosive material).

   Placard(s) Required _____

   Reference(s) _____

4. A truck is transporting:

   - 363 kg (800 lbs) of ORM-D;
   - 136 liters (300 lbs) of Class 3 (flammable liquid), packaged as small quantitie;
   - 680 kg (1,500 lbs) of Division 6.1 (poison), PG III.

   Placard(s) Required _____

   Reference(s) _____

5. A truck is transporting:

   - 2,722 kg (6,000 lbs) of Class 3 (flammable liquid), loaded at one facility;
   - 227 kg (500 lbs) of Division 4.3 DANGEROUS WHEN WET;
   - 91 kg (200 lbs) of Division 5.1 (Oxidizer).

   Placard(s) Required _____

   Reference(s) _____

6. A truck is transporting:

   - 2,722 kg (6,000 lbs) of Division 2.2 (Argon, compressed), packaged in 151 L (40 gallon) capacity cylinders, loaded at one facility;
   - 200 kg (440 lbs) of Division 6.1 (Poison), PG II;
   - 45 kg (99 lbs) of Class 8 (corrosive material).

   Placard(s) Required _____

   Preference(s) _____

7. A cargo tank is transporting:

   - 7,571 liters (2,000 gals) of Class 3 (flammable liquid);
   - 1,892 liters (500 gals) of Division 6.1 (Poison), PG I, liquid.

   Placard(s) Required _____

   Reference(s) _____

Placarding Student Activity

Student Activity #2

To the Instructor

The objective of this student activity is to provide a practical placarding exercise. The student is provided with transportation situations where hazardous material may or may not require placarding.

Directions to the Student(s)

Student Activity #2 has seven situations relating to the transportation of hazardous materials. Determine what placard(s), if any, must be displayed and/or offered. Following each placarding situation, there is a space to write in the name of the placard and the regulation reference. If no placards are required, write "none". The DANGEROUS placard may be used when appropriate.

Self-Evaluation

The student activity will evaluate your skill and facility in the use of the HMR to determine placarding requirements. When you have completed and checked your work for accuracy, review the student activity with the instructor.

Placarding Student Activity

Student Activity #2

1. A shipper offers to a motor carrier:

   - 182 kg (400 lbs) of Class 9 (miscellaneous hazardous materials),
   - 227 kg (500 lbs) of Division 2.2 (nonflammable gas),
   - 363 kg (800 lbs) of Division 5.1 (Oxidizer).

   Placard(s) Required _____

   Reference(s) _____

2. A rail car is loaded with a van-type trailer placarded FLAMMABLE containing 1,633 liters (431 gallons) of Class 3 (flammable liquid).

   Placard(s) Required _____

   Reference(s) _____

3. A cargo tank is returning empty from a delivery of 22,700 liters (5,997 gals) of gasoline, a Class 3 liquid.

   Placard(s) Required _____

   Reference(s) _____

4. A freight container with a capacity of less than 18 cubic meters (640 cubic feet) contains 23 kg (51 lbs) of Division 4.1 (flammable solid), and is being transported only by air.

   Placard(s) Required

   Reference(s)

5. A truck is transporting:

   - 363 kg (800 lbs) of Class 3 (flammable liquid), and
   - 23 kg (51 lbs) of Class 8 (corrosive material).

   The shipping paper description indicates the flammable liquid meets the Poison-Inhalation Hazard criteria.

   Placard(s) Required _____

   Reference(s) _____

6. A rail tank car is returning empty with a residue of Class 3 (flammable liquid) material.

   Placard(s) Required _____

   Reference(s) _____

7. A freight container of 19 cubic meters (670 cubic feet) capacity is transporting 159 kg (350 lbs) of Class 3 (flammable liquid) material loaded inside a 208 L (55 gallon) drum, by highway.

   Placard(s) Required _____

   Reference(s) _____

Module 4 Test

1. The Placarding requirements do not apply to _____.

A. infectious substances and/or hazardous materials classed as ORM-D
B. small quantities of certain hazard classes
C. limited quantities (Ltd. Qty.), when noted on shipping document
D. all of the above

2. The EXPLOSIVES 1.2 placard is not required if the transport vehicle or freight container contains Div. 1.2 and Div. 1.1 explosives and is placarded EXPLOSIVES 1.1.

A. True
B. False

3. Except for bulk packaging and hazardous materials subject to 172.505, placards are not required for Table 2 materials on a rail car loaded with vehicles or freight containers that don't require placards.

A. True
B. False

4. A Class 3 liquid [1,814 kg. (3,999 lbs.)] is loaded into a freight container with a capacity of 18 cubic meters (640 cubic feet) or more. The freight container must be placarded _____.

A. DANGEROUS
B. FLAMMABLE
C. FLAMMABLE LIQUID
D. no placard required

5. For the shipment of three hundred packages of Division 5.1 (Oxidized-labeled) material weighing 272 kg (600 lbs.) total and 318 kg (700 lbs.) of Division 6.1 (poison-labeled), PG III, material, the carrier may affix which of the following placards?

A. POISON and DANGEROUS
B. OXIDIZER and DANGEROUS
C. POISON and OXIDIZER
D. Any of the above

6. A transport vehicle containing packages labeled "Radioactive Yellow III" being transported with packages labeled "Division 1.3 (explosives)" must be placarded _____.

A. DANGEROUS
B. RADIOACTIVE
C. RADIOACTIVE AND EXPLOSIVE 1.3
D. EXPLOSIVE 1.3

7. A Class 8 (corrosive) material [4,000 kg. (8,800 lbs.)] and a Class 3 (flammable liquid) material, [3629 liters (958 gals.)] are loaded at one loading facility. What placard(s) must be displayed on the transport vehicle?

A. CORROSIVE
B. FLAMMABLE
C. DANGEROUS
D. CORROSIVE and FLAMMABLE

8. Shipper "B" offers 318 kg (700 lbs.) of Division 6.1 (Poison-labeled), PG III, material for transportation by motor vehicle. Shipper "B" must offer the appropriate placards.

A. True
B. False

9. No placard is required for an 18 cubic meter (640 cubic feet) capacity or less freight container of hazardous material not offered for air transportation. However, the container must be labeled on _____.

A. one end
B. one side
C. both sides or both ends
D. no label required

10. Each person who offers for transportation a cargo tank containing a hazardous material shall _____.

A. offer the required placards
B. affix the required placards
C. require the carrier to affix the required placards
D. require the carrier to have a supply of placards in the power unit

11. A truck containing 2,721 kg. (5,986 lbs.) of Class 2.2 (Non-flammable gas) loaded at one facility, 227 kg. (500 lbs.) of Div. 1.3 Explosives and 4,536 kg. (10,000 lbs.) of ORM-D must be placarded _____.

A. NON-FLAMMABLE GAS, EXPLOSIVES 1.3, and ORM
B. NON-FLAMMABLE GAS, AND EXPLOSIVES 1.3
C. NON-FLAMMABLE GAS, AND DANGEROUS
D. DANGEROUS

12. The prohibited placarding requirements can be found in _____.

A. 172.505
B. 172.502
C. 172.504
D. 172.506

13. A non-bulk packaging that contains only residue of a Class 3 liquid _____.

A. must be considered when determining Placarding requirements
B. must not be transported
C. may be transported only after being cleaned and purged
D. need not be considered in determining Placarding requirements

14. A rail carrier may not accept a rail car containing a hazardous material requiring Placarding unless the placards for the hazardous material are affixed as required.

A. True
B. False

15. The POISON placard would not be appropriate for hazardous materials classed:

A. Division 2.3
B. Class 3, Poison Inhalation
C. Division 6.1
D. a and b

16. You are the shipper. Your shipping paper reflects 10,000 kg (22,046 lbs.) of Class 3 (flammable liquid) material in case lots noted as "Ltd. Qty". What placard must be offered for this shipment?

A. FLAMMABLE placard
B. No placard is required
C. DANGEROUS placard
D. COMBUSTIBLE placard

17. A cargo tank used to transport 30,283 liters (8,000 gals.) of gasoline, Class 3 (flammable liquid) material, is returning "empty". The cargo tank must be placarded _____.

A. FLAMMABLE LIQUID
B. DANGEROUS
C. FLAMMABLE
D. RESIDUE

18. A transport vehicle carrying a Class 3 (flammable liquid) material and described on a shipping paper, as "Poison-Inhalation Hazard" must be placarded _____.

A. DANGEROUS
B. POISON-INHALATION HAZARD
C. FLAMMABLE AND POISON-INHALATION HAZARD
D. FLAMMABLE

19. What placard is required for a 0.45 kg (one-pound) package of Division 1.1 explosives?

A. DANGEROUS
B. None required – less than 454 kg (1,001 lbs.)
C. EXPLOSIVES 1.1
D. DANGEROUS WHEN WET

20. A truck that contains 4.5 kg. (10 lbs.) of Class 7 (radioactive material, n.o.s.), labeled Yellow-II in non-bulk packaging; 2,722 kg. (6,000 lbs.) of Acetone, Class 3 liquid, loaded at one point; and 9.1 kg. (20 lbs.) of Potassium cyanide solid, Division 6.1 (Poison), PG I, must be placarded _____.

A. FLAMMABLE
B. RADIOACTIVE and FLAMMABLE
C. RADIOACTIVE, FLAMMABLE and POISON
D. FLAMMABLE and either POISON or DANGEROUS

21. Three hundred packages of Division 5.1 (Oxidizer-labeled) material weighing 272 kg (600 lbs.) total are being offered by shipper "A" for transportation by motor vehicle. The shipper must offer the appropriate placards.

A. True
B. False