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HAZMAT Transportation Part 5:
Labeling and Placarding

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Labeling and placarding requirements can change periodically. To ensure that you have the latest information, refer to the current version of the Hazardous Materials Regulations (HMR) in Title 49 of the Code of Federal Regulations (CFR).

Note that these requirements may differ from those of the United Nations (UN), the International Maritime Dangerous Goods (IMDG) Code, the International Civil Aviation Organization (ICAO) guidance, the International Air Transport Association (IATA) requirements and the Transport Dangerous Goods (TDG) regulations. Use the most stringent, applicable regulations that apply for your needs.

Labeling Requirements

Shippers affix labels to packaging containing hazardous materials before offering it for transportation. Carriers inspect HAZMAT packages, accept HAZMAT packages labeled per the HMR, label HAZMAT packages when reshipping them, and replace labels that are missing or damaged during transportation.

Labels are usually 100 millimeters (3.9 inches) on each side. Consider the size of the label and package when determining what to affix and where. Label non-bulk packaging with one label.

Place the label on the same surface as the proper shipping name and in close proximity. If the package's surface is too small, irregular or you cannot affix the label to the surface, display the label on a tag and secure it to the package. Subsidiary labels must be within 150 millimeters (6 inches) of the primary label.

Labels communicate vital information to carriers and emergency responders – you have a responsibility to only use them when:

- The material is a hazardous material
- They accurately represent the hazards of the materials
- They conform with the HMR
 - Restricts us from displaying any mark, label, sign or device that could be confused with a hazard warning label
 - Exceptions: Biohazard, "HOT" or identification number markings

You should not offer or accept the non-hazardous material until the label has been removed or the material has been repackaged.

Labels must be **durable** and **weather-resistant**. They should be able to withstand environmental conditions for 30 days without deteriorating or substantially changing color. Sections 172.407 and 172.519 of the HMR detail labeling specifications for:

- Strength and durability
- Design
- Form identification
- Specification exceptions

Unless an exception applies, you cannot offer or transport hazardous materials without the appropriate labels. Labeling exceptions are found in Section 172.400, Subchapter A and Section 172.500.

Labeling exceptions include, but are not limited to:

- Cylinders containing Division 2.1, 2.2 or 2.3 that are not in an overpack and are marked in accordance with the HMR
- Compressed gas cylinders permanently mounted to a transport vehicle
- Overpacks or unit load devices when the labels of the hazardous materials are visible

In some instances, the HMR allows you to **modify** labels and placards. You can:

- Change "POISON" to "TOXIC"
- Use "PG III" for Division 6.1 PG III materials instead of "POISON" or "TOXIC"
- Display labels without hazard text (for example, "OXYGEN"), provided the hazard class or division number appears on the label
 - Not applicable for Classes 7 and 9 materials
- When a package contains compressed oxygen or refrigerated liquid oxygen, you can:
 - Modify the "OXIDIZER" label to read "OXYGEN"
 - Replace the Division 5.1 number with the Class 2 number

Using Tables to Select Labels

To select the proper labels and placards for a hazardous material, you can use the Hazardous Materials Table (HMT) and the labeling and placarding tables in the **Hazardous Materials Regulations (HMR)**.

1. Use column 6 of the HMT to identify the primary and subsidiary hazards for each material as represented by the applicable hazard class or division numbers.
2. Locate the name of the label by looking up the hazard class or division number on the labeling tables in the HMR.
3. Match the corresponding hazard class or division number with the one appearing at the bottom of the label.

You may need **additional information** from the HMR to label and placard materials correctly:

- Subsidiary Hazard Labels table (Section 172.402)
 - **X** = Display the primary and subsidiary hazard labels for all modes of transportation
 - ***** = Class 3 PG III materials require a subsidiary hazard label – except when the material has a flashpoint at or above 38 °C (or 100 °F) and is being transported by rail or highway
 - ******* = PG I materials cannot have subsidiary hazards of 4.1 or 4.2
- Radioactive Materials table (Section 172.403): The two measures for determining the safety of radioactive materials are the transport index (TI) and maximum surface radiation level. When comparing these, always select the label that represents the highest category required:
 - "RADIOACTIVE WHITE-I" labels identify materials with the lowest or least severe TI and maximum surface radiation levels
 - "RADIOACTIVE YELLOW-II" labels represent materials with a moderate level of radiation
 - "RADIOACTIVE YELLOW-III" labels represent materials with the highest or most severe hazard levels
 - Required on highway route-controlled quantities of Class 7 radioactive materials

Placarding Requirements

Shippers affix placards to packaging, freight containers, unit load devices and rail cars containing hazardous materials before offering them for transportation and provide motor carriers with the appropriate placards so the carrier can affix them to the transport vehicle.

Carriers inspect HAZMAT packages, accept HAZMAT packages placarded per the HMR, placard HAZMAT packages when reshipping them, and replace any placards that are missing or damaged during transportation.

Placards communicate important information about a material's hazards. Placards are usually 273 mm (10.8 in) on each side. Consider the size of the placard and container when determining what to affix and where. Based on HAZMAT and package size:

- Placard each side and each end of:
 - Bulk packaging
 - Freight containers
 - Unit load devices
 - Transport vehicles
 - Rail cars
- Placard the following on two opposing sides:
 - Portable tanks with a capacity less than 3,785 liters (1,000 gallons)
 - DOT 106 or 110 multi-unit tank car tanks
 - Bulk packaging other than portable tanks, cargo tanks or tank cars with a volumetric capacity less than 18 cubic meters
 - Overpacks, freight containers or unit load devices with a capacity less than 18 cubic meters (636 cubic feet)

Placards communicate vital information to carriers and emergency responders – you have a responsibility to only use them when:

- The material is a hazardous material
- They accurately represent the hazards of the materials
- They conform with the HMR
 - Restricts us from displaying any mark, label, sign or device that could be confused with a hazard warning label or placard
 - Exceptions: Biohazards, HOT or identification number markings

You should not offer or accept the non-hazardous material until the placard has been removed or the material has been repackaged.

Placards must be **durable** and **weather-resistant**. They should be able to withstand environmental conditions for 30 days without deteriorating or substantially changing color. Sections 172.407 and 172.519 of the HMR detail labeling and placarding specifications for:

- Strength and durability
- Design
- Form identification
- Specification exceptions

Unless an exception applies, you cannot offer or transport hazardous materials without the appropriate placards. Labeling and placarding exceptions are found in Section 172.400, Subchapter A and Section 172.500.

The following hazardous materials are excepted from placarding requirements:

- Infectious substances

- Combustible liquids in non-bulk packaging
- Hazardous materials packaged as limited and small quantities
- Class 3, Divisions 4.1, 4.2, 4.3, 5.1, 6.1, and Class 8, 9 materials packaged per the exceptions outlined in Section 173.13 of the HMR

You must placard each side and each end of an **empty** HAZMAT package, unless:

- It is cleaned of residue and purged of vapors
- The remaining residue is no longer hazardous
- The residue of a Class 9 hazardous substance is less than the reportable quantity and it conforms to applicable requirements in Section 173.29 of the HMR

In some instances, the HMR allows you to modify placards. You can:

- Change POISON to TOXIC
- Use PG III for Division 6.1 PG III materials instead of POISON or TOXIC
- Display placards without hazard text (for example, OXYGEN), provided the hazard class or division number appears on the label or placard
 - Not applicable for Classes 7 and 9 materials
- For a Class 3 placard, you can:
 - Replace FLAMMABLE with GASOLINE
 - Replace COMBUSTIBLE with FUEL OIL
 - Display the identification number in place of FLAMMABLE or COMBUSTIBLE
- When a package contains compressed oxygen or refrigerated liquid oxygen, you can:
 - Modify the OXIDIZER label to read OXYGEN
 - Replace the Division 5.1 number with the Class 2 number

Placarding Tables

To select the proper placards for a hazardous material, you can use the **Hazardous Materials Table (HMT)** and the labeling and placarding tables in the **Hazardous Materials Regulations (HMR)**.

1. Use column 6 of the HMT to identify the primary and subsidiary hazards for each material.
2. Locate the name of the placard by looking up the hazard class or division number on the placarding tables in the HMR.
3. Match the corresponding hazard class or division number with the one appearing at the bottom of the placard.

You may need **additional information** from the HMR to placard materials correctly:

- Placarding for Subsidiary Hazards guidelines (Section 172.505)
 - Materials defined as a POISON INHALATION HAZARD
 - RADIOACTIVE materials
 - Materials with the subsidiary hazard DANGEROUS WHEN WET when contained in a transport vehicle, portable tank, freight container or unit load device

DANGEROUS Placard

You can display the DANGEROUS placard on freight containers, unit load devices, transport vehicles or rail cars containing two or more categories of Table 2 hazardous materials in non-bulk packages instead of displaying multiple placards, provided the following:

- No one category of these materials (loaded at one loading point) has an aggregate gross weight equal to or greater than 1,000 kilograms (2,205 pounds)
- The shipment does not contain any Table 1 materials

Freight Containers and Aircraft Unit Load Devices

Placard freight containers and aircraft unit load devices with a capacity equal to or greater than 18 cubic meters (640 cubic feet) with placards on each side and each end.

When we transport these containers or devices with a capacity less than that amount and by air, the HMR only requires us to affix one placard to the outside unless it:

- Is labeled in accordance with the HMR
- Contains radioactive materials requiring the RADIOACTIVE YELLOW-III label and is placarded with one RADIOACTIVE placard
- Contains a hazardous material that conforms to Part 7, Chapter 2, Section 2.7 of the International Civil Aviation Organization (ICAO) Technical Instructions

Rail Provisions

Placard bulk packaging, freight containers, unit load devices, transport vehicles and rail cars with the diamond-shaped placard when transporting:

- Division 1.1 and 1.2 materials requiring EXPLOSIVES 1.1 or EXPLOSIVES 1.2 placards
- Division 2.3 Hazard Zone A or 6.1 Packing Group One, Hazard Zone A materials requiring POISON GAS or POISON placards
- Division 2.1 materials in a Class DOT 113 tank car

Placard rail cars containing Division 1.1 or 1.2 chemical/explosive ammunition that meets the definition of "material poisonous by inhalation" with:

- The applicable EXPLOSIVES 1.1 or EXPLOSIVES 1.2 placard
- A POISON GAS or POISON INHALATION HAZARD placard

Exceptions

- When you may be required to display two or more placards for **Class 1** materials, you can display one placard with the lowest division number
- You only display the EXPLOSIVES 1.4S placard for Division 1.4 Compatibility Group S Class 1 materials explosive materials when the 1.4S label is required
- A transport vehicle carrying **Division 2.2** non-flammable gas and a flammable gas or oxygen requires the applicable FLAMMABLE GAS or OXYGEN placard. It's not necessary to display the NON-FLAMMABLE GAS placard in this situation
- For **Class 3** materials, you can use a FLAMMABLE placard in place of a COMBUSTIBLE one when the material is contained in a cargo tank, portable tank or a compartmented tank car containing flammable and combustible liquids
- When transporting **Division 5.1** materials with Division 1.1 or 1.2 materials in freight containers, unit load devices, transport vehicles or rail cars, you don't have to display the OXIDIZER placard if the EXPLOSIVES 1.1 or 1.2 placard is displayed
- The same rule applies when transporting Division 5.1 materials on a transport vehicle, rail car or freight container with Division 1.5 explosives. If you use the EXPLOSIVES 1.5 placard, you aren't required to use the OXIDIZER placard

- For domestic transportation of **Division 6.1** materials, transport vehicles or freight containers displaying a POISON INHALATION HAZARD or POISON GAS placard don't require a POISON placard
- If the POISON GAS placard is displayed, the POISON INHALATION HAZARD placard isn't required
- You can modify the POISON placard by changing the POISON text to PG III for Packaging Group III materials
- **Class 9** materials don't require a Class 9 placard for any portion of transportation within the U.S. However, you must mark bulk packages of Class 9 materials with the material's identification number on the required Class 9 placard, orange panel or white square-on-point display configuration