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Module 4: Placarding

Pre-Introduction

Placarding
When an accident causes hazardous materials in transportation to be released, the vehicle operator, emergency response teams, and the surrounding community all face imminent danger. Emergency response teams must accurately identify materials as quickly as possible. To aid emergency response teams, DOT developed a system of placarding for the rapid identification of hazardous materials.

Emergency responders are trained to look for warning placards. Improperly placarded or unplacarded hazmat shipments place the lives of individuals and others at risk. This module will review how placards are used to communicate valuable information to emergency responders, and others who deal with materials on a daily basis.

Objectives
1. Identify the requirements for placarding, and any exceptions or modifications allowed with these requirements.
2. Examine the two placarding tables in section 172.504(e) to determine placarding requirements.
3. Identify the requirements for placard placement, visibility, and design.

General Rule for Placarding
The general rule to apply when determining the placarding requirements for hazardous materials is simple – if a hazardous material is contained within a transport vehicle, bulk packaging, freight container, unit load device, or rail car, then a placard representing the hazard class for the hazardous material must be displayed on both sides and at each end regardless of the quantity.

The regulations allow other approaches to placarding under specific circumstances. These are exceptions to this basic rule.

Placarding Applicability
If you offer for transportation or transport any hazardous material subject to the HMR, you must comply with the applicable placarding requirements of Part 172 – Subpart F – Placarding. 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.
One set of the exceptions to these placarding requirements provided for in the HMR involves the seven groups of materials listed here:

1. Division 6.2 Infectious substances
2. Hazardous materials renamed as consumer commodities and reclassed as ORM-D” [ORM-D will be phased out by December 31, 2020.]
3. Hazardous materials offered for transportation as Limited Quantity material when identified as such on a shipping paper or by marking on a package
4. Hazardous materials prepared in accordance with sections 173.13
5. Hazardous materials packaged as small quantities in accordance with sections 173.4, 173.4a, and 173.4b

**Prohibited Placarding**
No person may affix or display on a packaging, freight container, unit load device, motor vehicle or rail car any placard described in the HMR unless:

- The material being offered or transported is a hazardous material
- The placard represents a hazard of the hazardous material being offered or transported
- The placarding conforms to the requirements of the HMR

Additionally, any sign, advertisement, slogan (such as "Drive Safely"), or device that, by its color, design, shape or content, could be confused with any placard prescribed in the HMR is prohibited.

**Exceptions to Prohibited Placarding**
These restrictions do not apply to a bulk packaging, freight container, unit load device, transport vehicle or rail car that is placarded in conformance with:

- The Transportation of Dangerous Goods (TDG) Regulations
- The International Maritime Dangerous Goods (IMDG) Code
- The United Nations (UN) Recommendations

These restrictions also do not apply to the display of a BIOHAZARD marking, a “HOT” marking, a sour crude oil hazard marking, or an identification number on a white square-on-point configuration in accordance with the HMR.

**Introduction**

**General Placarding Requirements**
For each bulk packaging, freight container, unit load device, transport vehicle or rail car containing any quantity of a hazardous material, you must placard each side and each end with the type of placards specified in Tables 1 and 2 of section 172.504 and in accordance with other placarding requirements of the HMR, unless a specific placarding exception is provided for that quantity of material or hazard class.
or division. Do not confuse these two placarding tables with the Hazardous Materials Table found in section 172.101.

When determining which placards must be used and what options are available, both placarding tables must be considered. You may placard a hazardous material shipment, even when an exception makes it unnecessary, if the placarding otherwise conforms to the requirements of the HMR for the hazards presented.

**Placarding Table 1**

Table 1 lists hazardous materials by category for which placarding is required for any quantity of material contained in the freight container, unit load device, transport vehicle, or rail car. No material, for which Table 1 applies, is duplicated in Table 2.

Each material will be exclusive to only one of the two tables. Placarding requirements for hazard class or division numbers 5.2 and 6.1 are divided between Table 1 and Table 2 based on additional description information. “RADIOACTIVE” placards are also required for: All shipments of unpackaged LSA-I material or SCO-I; all shipments required by sections 173.427, 173.441, and 173.457 of this subchapter to be operated under exclusive use; and all closed vehicles in accordance with section 173.443(d).

As an example, any quantity of Sulfur dioxide, 2.3, UN1079 being shipped will be placarded based on Table 1.

Since the proper shipping name for this material indicates that it falls under the hazard class or division number 2.3, and Table 1 regulates all hazard class or division 2.3 materials – any quantity of Sulfur dioxide must be placarded with a "POISON GAS" placard.

<table>
<thead>
<tr>
<th>Category of material (Hazard class or division number and additional description, as appropriate)</th>
<th>Placard name</th>
<th>Placard design section reference ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 EXPLOSIONS 1.1</td>
<td></td>
<td>172.522</td>
</tr>
<tr>
<td>1.2 EXPLOSIONS 1.2</td>
<td></td>
<td>172.522</td>
</tr>
<tr>
<td>1.3 EXPLOSIONS 1.3</td>
<td></td>
<td>172.522</td>
</tr>
<tr>
<td>2.3 POISON GAS</td>
<td></td>
<td>172.540</td>
</tr>
<tr>
<td>4.3 DANGEROUS WHEN WET</td>
<td></td>
<td>172.548</td>
</tr>
<tr>
<td>5.2 (Organic peroxide, Type B, liquid or solid, temperature controlled)</td>
<td>ORGANIC PEROXIDE</td>
<td>172.552</td>
</tr>
<tr>
<td>6.1 (Material poisonous by inhalation (see § 171.8 of this subchapter))</td>
<td>POISON INHALATION</td>
<td>172.555</td>
</tr>
<tr>
<td>7.7 (Radioactive Yellow III label only)</td>
<td>RADIOACTIVE¹</td>
<td>172.558</td>
</tr>
</tbody>
</table>

¹RADIOACTIVE placards are also required for: All shipments of unpackaged LSA-I material or SCO-I; all shipments required by §§173.427, 173.441, and 173.457 of this subchapter to be operated under exclusive use; and all closed vehicles used in accordance with §173.443(d).
**Division 5.2 Exceptions**

The placarding requirements for Division 5.2, Organic peroxide materials, are split between Table 1 and Table 2.

All Division 5.2, Type B liquid or solid, temperature-controlled organic peroxides are covered by Table 1, while all the other Division 5.2, Organic peroxides are covered by Table 2.

Displayed here is a portion of the HMT with some of the Organic peroxide entries. Two entries are listed as Organic peroxide type B, liquid, temperature controlled and Organic peroxide type B, solid, temperature controlled and are placarded according to Table 1; while the remaining Organic peroxide entries are all placarded according to Table 2.

**Division 6.1 Exceptions**

The placarding requirements for Division 6.1 materials are split between Table 1 and Table 2. All Division 6.1, Inhalation hazard, Zone A or B material is covered by Table 1, and placarded with the "POISON INHALATION HAZARD" placard. All other Division 6.1 materials are covered by Table 2, and placarded with the "POISON" placard.

Displayed here is a portion of the HMT with some of the Division 6.1 entries. Each of these materials contains the entry of 6.1 in column 3. If the entry for column 7, Special Provisions, contains the code 1 or 2, it indicates that the material is poisonous by inhalation in Hazard Zone A and Hazard Zone B, respectively.
**Poison Gas and Poison Hazard**

The only difference between the "POISON GAS" and "POISON INHALATION HAZARD" placards is the numeral representing the hazard class. A "2" appears on the "POISON GAS" placard, whereas a "6" appears on the "POISON INHALATION HAZARD" placard; however, there are important differences in the treatment of the different materials.

**Class 7 Radioactive Exceptions**

While the placarding requirements for Class 7 Radioactive materials are solely guided by Table 1, not all Class 7 Radioactive materials require placarding.

The exception for Class 7 in Table 1 states that placarding is required for "Radioactive Yellow III label only." The footnote to Table 1 states “RADIOACTIVE placards are also required for: All shipments of unpackaged LSA-I material or SCO-I; all shipments required by sections 173.427, 173.441, and 173.457 of this subchapter to be operated under exclusive use; and all closed vehicles used in accordance with section 173.443(d).

**Placarding Table 2**

The materials in Table 2 may not require placarding in certain cases. Table 2 requires you to placard materials in non-bulk packages when the shipment has an aggregate gross weight of 454 kg (1,001 pounds) or more of Table 2 materials, but allows for multiple Table 2 materials to be placarded with a single "DANGEROUS" placard.

A shipment of 1,000 kg (2,205 pounds) or more of one Table 2 hazardous material, loaded at one loading point, must be placarded according to Table 2 requirements, with placards specific to the material. Remember, the aggregate gross weight applies only to the Table 2 materials in your shipment, not the weight of other materials.

Transport vehicles and freight containers transporting less than 454 kg (1,001 pounds) aggregate gross weight of Table 2, non-bulk materials may be placarded, but are not required to be.

<table>
<thead>
<tr>
<th>Category of material (Hazard class or division number and additional description, as appropriate)</th>
<th>Placard name</th>
<th>Placard design section reference ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.4</td>
<td>EXPLOSIVES 1.4</td>
<td>172.622</td>
</tr>
<tr>
<td>1.5</td>
<td>EXPLOSIVES 1.5</td>
<td>172.624</td>
</tr>
<tr>
<td>1.6</td>
<td>EXPLOSIVES 1.6</td>
<td>172.526</td>
</tr>
<tr>
<td>2.1</td>
<td>FLAMMABLE GAS</td>
<td>172.630</td>
</tr>
<tr>
<td>2.2</td>
<td>NON-FLAMMABLE GAS</td>
<td>172.528</td>
</tr>
<tr>
<td>3</td>
<td>FLAMMABLE</td>
<td>172.542</td>
</tr>
<tr>
<td>4.1</td>
<td>COMBUSTIBLE</td>
<td>172.644</td>
</tr>
<tr>
<td>4.2</td>
<td>SPONTANEOUSLY COMBUSTIBLE</td>
<td>172.547</td>
</tr>
<tr>
<td>5.1</td>
<td>OXIDIZER</td>
<td>172.550</td>
</tr>
<tr>
<td>5.2 (Other than organic peroxide, Type B, liquid or solid, temperature controlled)</td>
<td>ORGANIC PEROXIDE</td>
<td>172.652</td>
</tr>
<tr>
<td>6.1 (other than material poisonous by inhalation)</td>
<td>POISON</td>
<td>172.654</td>
</tr>
<tr>
<td>6.2</td>
<td>(None)</td>
<td>172.560</td>
</tr>
<tr>
<td>8</td>
<td>CORROSIVE</td>
<td>172.558</td>
</tr>
<tr>
<td>9</td>
<td>Class 9 (see §172.504(9))</td>
<td>172.660</td>
</tr>
<tr>
<td>ORM-D</td>
<td>(None)</td>
<td>172.570</td>
</tr>
</tbody>
</table>
Activity: Think It Through

Using the Placarding Table 2 (on the previous page), determine the proper placard required for the shipping scenario below.

Scenario:
A shipment of 1,000 kg (2,205 pounds) of category 1.5 explosive material is loaded at one loading point and will need to be placarded according to the Table 2 requirements.

Question:
Which placard is required to ship 1,000 kg (2,205 pounds) of category 1.5 explosive material loaded at one loading point?

Answer: Placard B is the proper selection.

Table 2 Placarding Exceptions

Empty Non-Bulk Packaging
Except for hazardous materials subject to section 172.505 ("Placarding for subsidiary hazards") a non-bulk packaging that contains only the residue of a Table 2 hazardous material need not be considered when determining the placarding requirements.

Class 1 Exceptions
When more than one division placard is required for Class 1 materials on a transport vehicle, rail car, freight container or unit load device, only the placard representing the lowest division number must be displayed.

The "EXPLOSIVE 1.4" placard is not required for those Division 1.4 Compatibility Group S (1.4S) materials that are not required to be labeled 1.4S. Finally, for shipments of Class 1 (explosive materials) by aircraft or vessel, the applicable compatibility group letter must be displayed on the placards.

When more than one compatibility group placard is required for Class 1 materials, only one placard is required to be displayed, as provided in paragraphs (g)(1) through (g)(4) of section 172.504.
Other Class Exceptions

Division 2.2
A "NON-FLAMMABLE GAS" placard is not required on a transport vehicle that contains non-flammable gas if the transport also contains flammable gas or oxygen and it is placarded with "FLAMMABLE GAS" or "OXYGEN" placards as required.

For domestic transportation of oxygen, compressed or oxygen refrigerated liquid, the "OXYGEN" placard may be used in place of a "NON-FLAMMABLE GAS" placard.

Class 3
A "FLAMMABLE" placard may be used in place of a "COMBUSTIBLE" placard on a cargo tank or portable tank, or a compartmented tank car that contains both flammable and combustible liquids.

Division 5.1
"OXIDIZER" placards are not required for Division 5.1 materials on freight containers, unit load devices, transport vehicles or rail cars that also contain Division 1.1 or Division 1.2 materials and that are placarded with "EXPLOSIVES" (1.1 or 1.2) placards.

For transportation by transport vehicle or rail car only an "OXIDIZER" placard is not required for Division 5.1 materials on a transport vehicle, rail car, or freight container that also contains Division 1.5 explosives, and is placarded with "EXPLOSIVES 1.5" placards, as required.

Division 6.1
For domestic transportation, a "POISON INHALATION HAZARD" placard is not required on a transport vehicle or freight container that is already placarded with the "POISON GAS" placard.

For Division 6.1, PG III materials, a "POISON" placard may be modified to display the text "PG III" below the mid line of the placard.

For domestic transportation, a "POISON" placard is not required on a transport vehicle or freight container required to display a "POISON INHALATION HAZARD" or "POISON GAS" hazard.

Class 9
A Class 9 placard is not required for domestic transportation.

A bulk packaging containing a Class 9 material must be marked with the appropriate identification number displayed on a Class 9 placard, an orange panel, or white-square-on-point display configuration as required by subpart D of this part.

Additional Requirements

Use of Dangerous Placard
You may use the "DANGEROUS" placard on a freight container, unit load device, transport vehicle or rail car, if the shipment contains non-bulk packages with two or more categories of hazardous materials that require different placards as specified in Table 2.

However, when 1,000 kg (2,205 pounds) aggregate gross weight or more of one category of material is loaded at one loading facility, the placard specified in Table 2 must be applied.
For example, a transport vehicle is carrying a combined shipment of 454 kg of a Class 3, flammable liquid; 340 kg of a Class 8, corrosive material, and 113 kg of a Class 2, non-flammable gas material. Instead of displaying the three individual placards for "FLAMMABLE," "CORROSIVE," and "NONFLAMMABLE" materials, as specified in Table 2, the "DANGEROUS" placard may be used instead on this transport vehicle.

**Dangerous Placard Exceptions**

Do not use the "DANGEROUS" placard to placard shipments of Table 1 materials. Also, do not use the "DANGEROUS" placard to placard bulk packages such as cargo tanks, portable tanks, or tank cars. Instead, affix the placard specified for each hazardous material to the container.

**Placarding for Subsidiary Hazards**

Some hazardous materials have both a primary hazard and a subsidiary hazard listed in column 6 of the HMT.

Under certain circumstances, both a primary hazard placard and a subsidiary hazard placard must be affixed for hazardous materials being shipped in transport vehicles, freight containers, portable tanks, unit load devices, or rail cars.

Hazardous materials that possess secondary or subsidiary hazards may display subsidiary placards that correspond to the placards described here, even if not required to be displayed.

---

**Poison Inhalation Hazard**

Each transport vehicle, freight container, portable tank unit load device, or rail car that contains a poisonous material subject to the "Poison Inhalation Hazard" shipping description must be placarded with a "POISON INHALATION HAZARD" or "POISON GAS" hazard as appropriate on each side and each end, in addition to any other placard required for that material under the HMR.

Duplication of the "POISON INHALATION HAZARD" or "POISON GAS" placard is not required.
Corrosive Hazard
In addition to the “RADIOACTIVE” placard that may be required by the HMR, each transport vehicle, portable tank, or freight container that contains 1,001 lbs. or more gross weight of fissile or low, specific activity uranium hexafluoride shall be placarded with a "CORROSIVE" placard on each side and each end.

Dangerous When Wet
Each transport vehicle, portable tank or unit load device that contains a material that has a subsidiary hazard of being dangerous when wet, shall be placarded with a "DANGEROUS WHEN WET" placard on each side and each end in addition to any other placard required under the HMR.

Providing and Affixing Placards
The shipper of any hazardous material must offer placards at the time of, or prior to, transportation, unless the transport vehicle is already placarded for the material being offered. Motor carriers may not transport unless the required placards are affixed.

Placards already displayed on motor vehicles, transport containers or portable tanks may be used to satisfy this requirement if the placards are visible. Rail carriers may not accept any rail car for transportation, unless the car is properly placarded.

Placarding is the joint responsibility of both the shipper and the carrier. Shipments that comply with the Hazardous Materials Regulations make the transportation of hazardous material safer for everyone. If the required placard is missing or damaged, no matter what the reason, the shipment should not be transported.

Special Placarding Provisions
Highway
Each motor vehicle used to transport a package of highway route-controlled quantity Class 7 (radioactive) materials must have the required "RADIOACTIVE" warning placard on a black-bordered, white square background color as described in section 172.527.

A nurse tank is not required to be placarded on an end containing valves, fittings, regulators or gauges when they prevent the markings and placard from being properly placed and visible.

Rail
Special placarding provisions apply to the transport of certain hazardous materials by rail car. The following must have the specific placards placed on a black-bordered, white square background as specified in section 172.527:

- Division 1.1 and 1.2 (explosive materials) that require "EXPLOSIVES 1.1" or "EXPLOSIVES 1.2" placards affixed to the tank car
• Materials classed in Division 2.3, Hazard Zone A or Division 6.1, Packaging Group I, Hazard Zone A that require "POISON GAS" or "POISON" placards affixed to the rail car, including tank cars containing only a residue of the material
• Class DOT 113 tank cars used to transport a Division 2.1 (flammable gas) material including tank cars containing only a residue of the material
• Each rail car containing Division 1.1 or 1.2 (explosive) ammunition that also meets the definition of a material poisonous by inhalation must be placarded "EXPLOSIVES 1.1" or "EXPLOSIVES 1.2" and "POISON GAS" or "POISON INHALATION HAZARD."

**Freight Containers and Aircraft Unit Load Devices More than 640 Cubic Feet**

Each person who offers for transportation, and each person who loads and transports, a hazardous material in a freight container or aircraft unit load device of 640 cubic feet (18 cubic meters) or more shall affix to the freight container or aircraft unit load device the placards specific for the material in accordance with the HMR.

• An exception is allowed for motor vehicles transporting freight containers and aircraft unit load devices containing less than 454 kg (1,001 pounds) of Table 2 materials.
• An additional exception is allowed for freight containers and aircraft unit load devices being transported for delivery to a consignee immediately following an air or water shipment.
• Placarding is not required on a freight container or aircraft unit load device if it is only transported by air and is placarded in accordance with the International Civil Aviation Organization (ICAO) Technical Instructions.
Freight Containers and Aircraft Unit Load Devices Less than 640 Cubic Feet

Each person who offers for transportation, and each person who loads and transports, hazardous materials in a freight container or aircraft unit load device of 640 cubic feet (18 cubic meters) or less shall affix to the freight container or aircraft unit load device one placard specified for the material in accordance with the HMR, unless:

- The freight container or aircraft unit load device is labeled in accordance with subpart E and Section 172.406(e).
- It contains radioactive materials requiring the Radioactive Yellow-III label and is placarded with one Radioactive placard and is labeled in accordance with Subpart E and section 172.406(e).
- It is identified as containing a hazardous material in the manner provided in part 7 of the ICAO Technical Instructions.

When hazardous materials are offered for transportation not involving air transportation, in a freight container having a capacity of less than 18 cubic meters, the freight container need not be placarded. If it is not placarded, however, it must be labeled in accordance with subpart E of the HMR.

Bulk Packages

- Each person who offers for transportation a bulk packaging that contains a hazardous material must affix the placards specified for the material in the HMR.
- Each bulk packaging that is required to be placarded when it contains a hazardous material must remain placarded when it is emptied, unless:
  - It is sufficiently cleaned of residue and purged of vapors to remove any potential hazard
  - Is 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
  - Or contains the residue of a Class 9 hazardous substance in a quantity less than the reportable quantity, and conforms to section 173.29(b)(1) of the HMR

The HMR require placards on only the two opposite sides, or may be labeled instead of placarded.

5 Cases for Exception:

- Large packagings
- A portable tank having a capacity of less than 3,785 L or 1,000 gallons
- A DOT 106 or 110 multi-unit tank car tank
- A bulk packaging other than a portable tank, cargo tank, or tank car with a volumetric capacity of less than 18 cubic meters
- An intermediate bulk container (IBC)
Visibility and Display of Placards

The square-on-point or diamond-shaped hazmat placards are instantly recognizable around the world. Their unique shape, color, and text, as well as the images displayed within the placard borders, are designed to distinguish them from advertisements, logos, and other markings.

They remain distinctive only if they are visible and properly displayed.

Each placard on a motor vehicle or on a rail car must be clearly visible from the direction it faces.

A placard on the end of a transport vehicle or rail car is not required to be visible when it is coupled to another transport vehicle or rail car. You may also meet this requirement by placarding the freight containers or portable tanks loaded on a motor vehicle or rail car, but if a portable tank or freight container requiring placarding is inside a closed transport vehicle, the vehicle itself must be placarded.

When the front of a motor vehicle must be placarded, you may placard the front of the truck-tractor instead of, or in addition to, the front of the cargo body.

You must securely attach, affix, or place in a holder each placard on a transport vehicle, bulk packaging, freight container or aircraft unit load device.

- You may use a hinged placard or placard holder, provided the required format, color, and legibility of the placard are maintained.
- You must locate each placard clear of appurtenances and devices such as ladders, pipes, doors, and tarpaulins.
- You must locate each placard so that dirt or water is not directed toward it from the wheels of the transport vehicle.
- You must locate each placard at least 3 inches (76.0 mm) away from any markings or advertising that could substantially reduce its effectiveness.
- Each placard must have the words or identification number printed on it displayed horizontally, reading from left to right.
- The carrier must maintain each placard so that the format, legibility, color, and visibility of the placard will not be substantially reduced due to damage, deterioration, or obscurement by dirt or other matter.
- You must affix each placard to a background of contrasting color, or you must use a placard with a dotted or solid line outer border that contrasts with the background color.
**Specifications for Placards**

The general specifications for hazardous materials placards are described by these four criteria detailed below.

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Specifications for Placards</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strength and Durability</strong></td>
<td>A placard may be made of any plastic, metal, or other material capable of withstanding a 30-day exposure to weather conditions, without deterioration or a substantial reduction in effectiveness.</td>
</tr>
<tr>
<td></td>
<td>A placard made of tagboard must be at least equal to that designated commercially as white tagboard. Tagboard specifications are included in section 172.519 of the HMR.</td>
</tr>
<tr>
<td></td>
<td>Reflective or retroreflective materials may be used on a placard if the prescribed colors, strength, and durability are maintained.</td>
</tr>
<tr>
<td><strong>Design</strong></td>
<td>The dotted line border shown on each placard is not part of the placard specification. However, a dotted or solid line outer border may be used when needed to indicate the full size of the placard that is part of a larger format or is on a background of non-contrasting color.</td>
</tr>
<tr>
<td></td>
<td>For other than Class 7 or the &quot;DANGEROUS&quot; placard, text indicating a hazard, for example &quot;FLAMMABLE&quot; is not required. Text may be omitted from the OXYGEN placard only if the specific identification number is displayed on the placard.</td>
</tr>
<tr>
<td></td>
<td>For a placard corresponding to the primary or subsidiary hazard class of a material, the hazard class or division number must be displayed in the lower corner of the placard. See section 172.519 for the exceptions to this requirement.</td>
</tr>
<tr>
<td><strong>Form Identification</strong></td>
<td>A placard may contain form identification information including the name of its maker, provided that information is printed outside of the solid line inner border in no larger than 10-point type.</td>
</tr>
<tr>
<td><strong>Exceptions</strong></td>
<td>When hazardous materials are offered for transportation or transported under the provision of subpart C of Part 171, a placard conforming to the specifications in the ICAO Technical Instructions, the IMDG Code or the TDG Regulations respectively, may be used in place of a corresponding placard that conforms to the HMR, except that a bulk packaging, transport vehicle, or freight container containing a material poisonous by inhalation must be placarded in accordance with the HMR.</td>
</tr>
</tbody>
</table>
Placarding: Gallery

Placard Gallery
Here is a gallery of the general hazardous material placards, including any specific requirements that exist for each placard.

“DANGEROUS” Placards
You can use the "DANGEROUS" placard, instead of multiple placards, for two or more categories of non-bulk, Table 2 materials in the same shipment.

If you load 1,000 kg (2,205 lbs.) or more of one category of Table 2 hazardous material, at one loading point you must display the required class or division placard for that material.

For the above scenario, if you have a second Table 2 hazardous material in non-bulk packages of less than 1,000 kg (2,25 pounds), you may use either the placard for the specific category of material or the “DANGEROUS” placard to represent the second material.
"EXPLOSIVES" Placards

In addition to the general placarding requirements in section 172.519, these specific provisions apply for "EXPLOSIVES" placards.

"Explosives 1.1, 1.2, 1.3" Placards

**Background Color:** Orange

**Comments:**
You must use the "EXPLOSIVES 1.1, 1.2, 1.3 placard for any quantity of these hazardous materials.

You must replace the "*" with the appropriate division number and when required, the appropriate compatibility group letter.

**Reference:** §172.522

"Explosives 1.4" Placard

**Background Color:** Orange

**Comments:**
You must use the "EXPLOSIVES 1.4" placard for quantities equal to or greater than 454 kg (1,001 lbs.) of this hazardous material.

You must replace the "*" when required with the appropriate compatibility group letter.

**Reference:** §172.522

"Explosives 1.5" Placard

**Background Color:** Orange

**Comments:**
You must use the "EXPLOSIVES 1.5 placard for quantities equal to or greater than 454 kg of this hazardous material (BLASTING AGENTS)

You must replace the "*" when required, with the appropriate compatibility group letter

**Reference:** §172.524

"Explosives 1.6" Placard

**Background Color:** Orange

**Comments:**
You must use the "EXPLOSIVES 1.6 Placard for quantities equal or greater than 454 kg of the hazardous material (EXPLOSIVES)

You must replace the "*" when required with the appropriate compatibility group letter

**Reference:** §172.525
“GAS” Placards
Each bulk packaging, freight container, unit load device, transport vehicle, or rail car containing hazardous materials must be placarded with the hazard class placard specified by the HMT. In addition to the general placarding requirements in section 172.519, these specific provisions apply for "GAS" placards.

“Non Flammable Gas” Placard

**Background Color:** Green

**Comments:** You must use the “NON-FLAMMABLE GAS” placard for quantities equal to or greater than 454 kg (1,001 lbs.) gross weight in non-bulk or in any quantity in bulk.

**Reference:** §172.528

“Oxygen” Placard

**Background Color:** Yellow

**Comments:** You may use the "OXYGEN" placard in place of a “NON-FLAMMABLE GAS” placard. Text may be omitted from the "OXYGEN "placard only if the specific identification number is displayed on the placard.

**Reference:** §172.522

“Flammable Gas” Placard

**Background Color:** Red

**Comments:** You must use the "FLAMMABLE GAS" placard for quantities equal to or greater than 454 kg gross weight in non-bulk or any quantity in bulk.

**Reference:** §172.530

“Poison Gas” Placard

**Background Color:** White

**Comments:** You must use the "POISON GAS" placard for any quantity of the hazardous material. You may replace the words "INHALATION HAZARD" with an identification number with the numbers in black and the background in white.

**Reference:** §172.540
“FLAMMABLE” and “COMBUSTIBLE” Placards

You must use the "COMBUSTIBLE" placard for all quantities transported in bulk. You may replace the word "COMBUSTIBLE" with the words "FUEL OIL" on a placard that is displayed on a cargo tank or portable tank being used to transport by highway, fuel oil that is not classed as a flammable liquid. The words "FUEL OIL" and “COMBUSTIBLE” must be white. On a "COMBUSTIBLE" placard with a white bottom, as prescribed by section 172.332(c)(4), the class number must be red or black.

“Flammable” Placard

**Background Color:** Red

**Comments:**

You must use the "FLAMMABLE" placard for quantities equal to or greater than 454 kg gross weight for non-bulk or any quantity in bulk.

The word "GASOLINE" may be used in place of the word "FLAMMABLE" on a placard that is displayed on a cargo tank or a portable tank being used to transport gasoline by highway. The words "GASOLINE" and “FLAMMABLE” must be shown in white.

You may replace the word "FLAMMABLE" with an identification number, with the numbers in black and the background in white.

**Reference:** §172.542

“Combustible” Placard

**Background Color:** Red

**Comments:**

You must use the "COMBUSTIBLE" placard for all quantities transported in bulk.

You may replace the word "COMBUSTIBLE" with the words "FUEL OIL" on a placard that is displayed on a cargo tank or portable tank being used to transport by highway fuel oil that is not classified as a flammable liquid.

The words "FUEL OIL" must be white. On a "COMBUSTIBLE" placard with a white bottom, as prescribed by 172.332 (c)(4), the class number must be red or black.
“FLAMMABLE SOLID,” “SPONTANEOUSLY COMBUSTIBLE,” and “DANGEROUS WHEN WET” Placards

In addition to the general placarding requirements in section 172.519, these specific provisions apply for the "FLAMMABLE SOLID," "SPONTANEOUSLY COMBUSTIBLE," and "DANGEROUS WHEN WET" placards.

“Flammable Solid” Placard

**Background Color:** White with seven vertical red stripes

**Comments:** You must use the "FLAMMABLE SOLID" placard for quantities equal to or greater than 454kg for non-bulk packages and any quantities for bulk.

**Reference:** §172.546

“Spontaneously Combustible” Placard

**Background Color:** Red in the lower half and white in the upper half

**Comments:** You must use the "SPONTANEOUSLY COMBUSTIBLE" placard for quantities equal to or greater than 454 kg gross weight for non-bulk packages, and any quantity for bulk.

**Reference:** §172.547

“Dangerous When Wet” Placard

**Background Color:** Blue

**Comments:** You must use the "DANGEROUS WHEN WET" placard for all quantities transported.

**Reference:** §172.548

“OXIDIZER” and “ORGANIC PEROXIDE” Placards

In addition to the general placarding requirements in section 172.519, these specific provisions apply for “OXIDIZER” and “ORGANIC PEROXIDE” placards.

“Oxidizer” Placard

**Background Color:** Yellow

**Comments:** You must use the "OXIDIZER" placard for quantities of Oxidizers (Division 5.1) equal or greater than 454 kg (1,001 lbs.) in non-bulk packages and any quantity of bulk packages.

**Reference:** §172.550
“Organic Peroxide” Placard

**Background Color:** Red/Yellow

**Comments:**
- You must use the "Organic Peroxide" placard for quantities of Organic Peroxides (Division 5.2 other than Type B temperature controlled) equal to greater than 454 kg (1,001 lbs.,) in -non-bulk packages, and any quantity of bulk.
- In addition, you must use the "ORGANIC PEROXIDE" placard for any quantity of Organic Peroxide (Division 5.2) Type B temperature controlled materials.

**Reference:** §172.552

“POISON” and “POISON INHALATION HAZARD” Placards

In addition to the general placarding requirements in section 172.519, these specific provisions apply for “POISON” and “POISON INHALATION HAZARD” placards.

“Poison” Placard

**Background Color:** White

**Comments:** You must use the "POISON" placard for quantities equal to or greater than 454 kg of poisonous materials for non-bulk packages and any quantity for bulk. The word “TOXIC” may be used in lieu of the word “POISON”.

“PG III” Placard

**Background Color:** White

**Comments:** For Division 6.1 PG III materials, you may display the text "PG III" below the mid line of the placard.

**Reference:** §172.554

“Poison Inhalation Hazard” Placard

**Background Color:** White

**Comments:** You must use the "POISON INHALATION HAZARD" placard for any quantity of poison inhalation hazard materials.

**Reference:** §172.555
“RADIOACTIVE” Placard

“Radioactive” Placard

**Background Color:** White in the lower portion with a yellow triangle in the upper portion.

**Comments:**
- You must use the “RADIOACTIVE” placard for any quantity of a shipment containing packages bearing the “RADIOACTIVE-Yellow III” label, and for exclusive use shipments of low-specific activity material and surface contaminated objects.
- The trefoil symbol must meet the appropriate specifications in Appendix B of Part 172.

**Reference:** §172.556

“CORROSIVE” Placard

“Corrosive” Placard

**Background Color:** Black in the lower portion with a white triangle in the upper portion.

**Comments:** You must use the “CORROSIVE” placard for quantities equal to or greater than 454 kg of corrosive material for non-bulk packages, and any quantity for bulk.

**Reference:** §172.558

“Class 9” Placard

“Class 9” Placard

**Background Color:** White with seven black vertical stripes on the top half extending from the top of the placard to one inch above the centerline.

**Comments:** Domestic shipments of Class 9 materials in non-bulk packagings do not require placarding. Bulk packaging of Class 9 material must be marked with the appropriate ID number displayed on a “CLASS 9” placard, an orange panel, or a white square-on-point display.

**Reference:** §172.560
Activity: Matching

Using the information in this module, draw a line matching the placards (in the left column) with the corresponding hazardous materials (in the right column).

<table>
<thead>
<tr>
<th>Placard</th>
<th>Hazardous Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxygen, Compressed UN1072</td>
<td></td>
</tr>
<tr>
<td>Argon, Compressed</td>
<td></td>
</tr>
<tr>
<td>Arsenic</td>
<td></td>
</tr>
<tr>
<td>Oxygen, Compressed UN1072</td>
<td></td>
</tr>
<tr>
<td>Butane</td>
<td></td>
</tr>
</tbody>
</table>
Summary

You have completed all the material for module 4. You should be able to:

- Identify the requirements for placarding, and any exceptions or modifications allowed with these requirements.
- Examine the two placarding tables in section 172.504(e) to determine placarding requirements.
- Identify the requirements for placard placement and visibility.

References