

JOB AID

HAZMAT Transportation Part 6c:
Carrier Requirements for Rail

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The Department of Transportation (DOT) identifies requirements for transporting hazardous materials (HAZMAT) by rail in the **Hazardous Materials Regulations (HMR) Part 174**. Rail carriers must also adhere to HMR Parts 171, 172, 173 and 179. The following information is not comprehensive.

Requirements for Shipping Hazardous Materials by Rail

Documentation Requirements

Unless excepted, shippers must submit shipping papers along with the hazardous material to the rail carrier. Rail carriers shipping their own supplies of hazardous materials must complete shipping papers in accordance with the HMR, but don't have to sign the shipper's certificate or declaration (unless transporting railway torpedoes or fusees).

Rail carriers must:

- Retain shipping papers for 1 year after the HAZMAT is accepted by the initial carrier
- Retain shipping papers for 3 years after shipping hazardous waste materials
- Produce a train consist (indicates the position of each rail car containing HAZMAT in the train)

Crew members are responsible for keeping the train consist document up-to-date and noting when a rail car containing hazardous materials changes position.

Inspection Requirements

Anytime you load hazardous materials on a rail car:

- Verify that the package and the car display the required markings, labels and placards
- Inspect each car to ensure closures are secure and no hazardous materials are leaking

You can perform these inspections in conjunction with the Federal Railroad Administration (FRA) safety inspections.

Damaged Packages

Do not forward or transport a leaking non-bulk package until it's been repaired, reconditioned or overpacked. Anytime you discover a bulk package (e.g., tank car) leaking hazardous materials, do not forward it until it has been repaired or approved for movement by the FRA Associate Administrator for Safety.

- You can move it without repairs or approval if the movement reduces or eliminates an immediate threat to people or the environment
- Take the necessary steps to prevent the spread of leaking hazardous liquids

If a package of radioactive materials appears damaged:

- Avoid inhaling, ingesting or making direct contact with the materials
- Leave any loose materials and packages in a segregated area as far as practicable from personnel contact until receiving disposal instructions from a qualified person
- Contact the U.S. Department of Energy for any radiological advice or assistance

Expediting and Removing Shipments

Carriers must forward HAZMAT shipments within 48 hours or on the first available train. Tank cars containing Division 2.1, Division 2.3 or Class 3 materials cannot be received and held at any point.

The consignee or receiver has 48 hours to pick up a HAZMAT shipment. If not claimed within that time period, the carrier may dispose of the shipment in accordance with Section 174.16 of the HMR.

Carriers cannot deliver or unload Class 1 explosive materials to a non-agency station unless:

- The consignee is there to receive it
- The materials can be locked and secured in a storage facility

If the delivery cannot be made, carriers can take it to the next or nearest agency station for delivery. Anytime local conditions make the acceptance, transportation or delivery of hazardous materials unusually hazardous, the carrier can impose additional restrictions on the shipment – provided they report the restrictions to the Bureau of Explosives for publication.

Hazardous Materials Handling Requirements

Handling or Loading

When handling or loading HAZMAT packages:

- Block and brace them
- Stow them in an upright position or as indicated by orientation markings
- Load only compatible materials together in freight containers, transport vehicles, tanks or other bulk packaging
- Ensure the doors of a freight container or transport vehicle and the load are within the limits of the Association of American Railroads' (AAR) design strength requirements
- Secure freight containers, transport vehicles or acceptable packaging on a flatcar to prevent it from changing positions during transit
- Do NOT transport bulk packaging containing hazardous materials in trailer-on-flat-car (TOFC) or container-on-flat-car (COFC) service, unless:
 - Authorized by HMR Section 174.63
 - Approved by the FRA Associate Administrator for Safety

Unloading

Always follow the Tank Car Unloading requirements in HMR Section 174.67. You must also be trained before unloading.

Begin the unloading process by:

- Applying the handbrake
- Blocking at least one wheel
- Restricting access to the track
- Displaying "Caution" signs on the track or tank cars

Continue the unloading process by:

- Allowing the pressure to release
- Following the safety procedures to:
 - Break the seal
 - Open the manhole cover
 - Attach the unloading pipes
 - Complete the unloading operation

- Observing the process or monitor the signaling system
- Removing the unloading connections and tightening all valves once complete

Segregating and Positioning Hazardous Materials

If incompatible hazardous materials were to leak and mix together during transportation, they might create a HAZMAT emergency. To prevent this, load, transport and store different classes of hazardous materials in accordance with the Segregation Table found in **HMR Section 174.81**.

Segregation

In the Segregation Table, locate the intersecting point of two hazard classes. At the intersection point:

- **Blank space** means the materials are compatible and no segregation or separation restrictions apply
- **Asterisk (*)** means you must refer to the Compatibility table to properly segregate Class 1 materials
- **X** means you may not load, transport or store materials together in the same rail car or storage facility
- **O** means that you must separate the materials so they cannot commingle if a leak occurs
- **A** in the notes column indicates ammonium nitrate fertilizer can be loaded and stored with Division 1.1 or Division 1.5 explosive materials

Placarding

To communicate the hazards of the materials you're transporting:

- Freight containers, rail cars, transport vehicles and bulk packaging that contain hazardous materials must display the required markings and placards
- Replace any missing marks or placards
- Remove those not required at the next terminal or inspection point

You must also follow the requirements for handling, switching and positioning placarded cars, transport vehicles, freight containers and bulk packaging.

Switching Cars

If using hand brakes to switch and cut off placarded rail cars, test the brakes to make sure they're in proper working condition. Then, allow each proceeding car to clear the ladder track before cutting off the following car and allowing the next car to follow. Don't cut off, strike or use any unnecessary force to complete coupling when switching the following:

- Placarded flatcars or a flatcar carrying a placarded transport vehicle, freight container or bulk packaging
- Placarded rail cars containing:
 - Division 1.1 or Division 1.2 explosives
 - Division 2.3, Hazard Zone A gas or a Division 6.1, PG I, Hazard Zone A material
 - DOT 113 tank car displaying a Division 2.1 "FLAMMABLE GAS" placard

Positioning Placarded Cars

When determining the correct position of placarded rail and tank cars in a train, you can refer to the Positioning table in Section 174.85 of the HMR. "X" marks indicate which of the six positioning restrictions apply to each placard group:

RESTRICTIONS	Placard Group 1	Placard Group 2		Placard Group 3		Placard Group 4
	Rail Car	Tank Car	Rail Car	Tank Car	Rail Car	Rail Car
Placarded cars may not be placed next to each other based on the following:						
Placard Group 1		X	X	X	X	X
Placard Group 2	X			X	X	X
Placard Group 3	X	X	X			X
Placard Group 4	X	X	X	X	X	

- Placard Group 1 = Divisions 1.1 and 1.2 explosive materials
- Placard Group 2 = Divisions 1.3, 1.4 and 1.5 explosives; Class 2 (compressed gas other than Division 2.3 PG I Zone A materials); Class 3 (flammable liquids); Class 4 (flammable solids); Class 5 (oxidizers); Class 6 (poisonous liquids other than Division 6.1, PG I, Zone A materials) and Class 8 (corrosives)
- Placard Group 3 = Division 2.3, Zone A poisonous gases and Division 6.1, PG I, Zone A poisonous liquids
- Placard Group 4 = Class 7 radioactive materials

In addition to the placement restrictions covered in the Positioning table:

- Place at least one non-placarded car between rail cars placarded as "RADIOACTIVE" and the engine, occupied caboose or carload of undeveloped film
- Separate a tank car containing the residue of a hazardous material from an engine or occupied caboose with at least one rail car other than a placarded tank car
- Place at least one non-placarded rail car between rail cars, transport vehicles or freight containers with Division 1.1 or 1.2 placards and the engine
- Never stop or place cars with Division 1.1 or 1.2 placards under a bridge, overhead crossing or in/alongside a passenger shed or station, unless completing a transfer
- Position placarded rail cars with placards for Division 1.1 or 1.2 explosives; Division 2.3 Hazard Zone A poisonous gases; or Division 6.1 PG I Hazard Zone A poisonous liquids next to and ahead of any car occupied by guards or technical escorts
- Position occupied rail car with the temperature control equipment in operation at least four cars behind any Division 1.1 or 1.2 placarded car

Industry Rules and Incident Reporting

The railroad industry, including the Association of American Railroads (AAR), recommends stricter operating rules than the DOT for "key trains" and "key routes."

Key trains contain at least:

- 5 tank-car loads of poisonous-by-inhalation materials
- 20 loaded cars, trailers, containers and intermodal tanks carrying any combination of:
 - Division 2.3 and 6.1 Zone A or B poisonous-by-inhalation materials
 - Division 1.1 and 1.2 explosives
 - Division 2.1 flammable gases
 - Certain environmentally sensitive chemicals

The railroad industry, not the HMR, recommends key trains:

- Be limited to a maximum speed of 50 miles per hour
- Hold the main track at meeting or passing points
- Receive a full train inspection at every emergency stop

Key routes are designated as those carrying at least 10,000 loads of hazardous materials or 4,000 loads of "combination" materials transported on key trains.

Reporting Incidents

Reportable incidents (identified in Section 171.15 of the HMR) include those in which the release of hazardous materials, infectious substances, marine pollutants or radioactive materials cause:

- The general public to be evacuated for an hour or more
- A major transportation artery or facility to be shut down for at least an hour
- Person(s) to be injured or killed

If the incident involves infectious substances, notify the National Response Center or the Centers for Disease Control and Prevention within 12 hours from the time of the reportable incident.

Should an incident occur and there is a release of radioactive materials, contact the offerer as soon as possible. Transport vehicles, buildings, areas or equipment cannot be placed in service or occupied until the radiation dose rate has receded to an acceptable limit and there is no surface contamination.

As a follow-up, provide the Department of Transportation's Pipeline and Hazardous Materials Safety Administration with a detailed written account of any reportable HAZMAT incident in accordance with Section 171.16 of the HMR.