

JOB AID

HAZMAT Transportation Part 6b:
Carrier Requirements for Air

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Regulations and Responsibilities

Carriers and shippers must work together to comply with Part 175 of the Hazardous Materials Regulations (HMR). All U.S. and foreign air carriers transporting hazardous materials to or from U.S. airports must comply with the HMR governing the **acceptance, storage, loading and transportation** of hazardous materials by air.

As an alternative, the Department of Transportation (DOT) does allow shipments to be prepared in accordance with the International Civil Aviation Organization (ICAO) Technical Instructions and the International Air Transport Association (IATA) Dangerous Goods Regulations.

The HMR, ICAO Technical Instructions and IATA Dangerous Goods Regulations each provide instructions for preparing and transporting dangerous goods across international borders by air.

Shipper Responsibilities

Package, mark, label and placard hazardous materials as required in HMR Sections 173.24 and 173.27. Provide air carriers with two copies of shipping papers; shipping papers make the pilot-in-command (PIC) aware of any hazardous materials (HAZMAT) loaded on the aircraft.

Carrier Responsibilities

Inspect HAZMAT packages and verify the accuracy of shipping papers before accepting the shipment. Scrutinize visible damage to packages and overpack containers. Any package with signs of leakage or other loss of container integrity **MUST** be refused.

Carriers have the authority to refuse the shipment if it's not compliant with the HAZMAT regulations. If it is not compliant, notify the nearest FAA Regional or Field Security Office.

Identify and follow the appropriate requirements for stowing, segregating, securing and transporting the accepted hazardous materials. Done properly, packages will not incur damages during loading and unloading, and while in transit will not shift, change orientation or become damaged by shifting of adjacent cargo.

Subpart A: General Information and Regulations

Subpart A of the air carrier requirements contains information about:

Approved Hazardous Materials

- Required for the safe operation of the aircraft
 - Fuel and oil needed for aircraft operation
 - Oxygen for the emergency oxygen system
 - Materials contained in fire extinguishers, replacement or spare aircraft parts, and aircraft batteries
 - Materials used for food and beverage service aboard the aircraft (e.g., dry ice)
 - Materials that generate sales for the airline (e.g., alcohol, perfumes and colognes)
- Used in specialized aircraft operations (HMR Section 175.9)
 - Smoke grenades, flares, pyrotechnics and other materials used in sport parachuting and air show performances
 - Hazardous materials for aerial seeding, dusting, spraying, fertilizing, crop improvement and pest control

- Help protect and preserve human organs carried on-board an aircraft
- Control weather and protect our environment
- Perform missions aboard air ambulances, firefighting and search-and-rescue aircraft
- Carried by passengers and crewmembers for personal use (HMR Section 172.10)
 - Implanted medical devices (e.g., pacemakers, injected or ingested radioactive pharmaceuticals)
 - Wheelchairs or battery-powered mobility aids
 - One packet of safety matches or a common lighter (on your person or in carry-on baggage only)
 - Limited quantities of dry ice (to cool perishables)
 - Small arms ammunition (in checked baggage)
- To power portable medical devices, e.g., AEDs
 - Batteries must not exceed 8 grams each
 - Two spare batteries may be kept with each device, but the terminals must be protected against short circuits

Notifying the Pilot-in-Command

Notify the Pilot-in-Command in writing of any hazardous materials on the aircraft with shipping papers that include:

- Hazardous materials' proper shipping name, hazard class and identification number
- The total number of packages, net quantity or gross weight for each package, and the transport index for Class 7 radioactive materials
- The location of the packages aboard the aircraft
- The date of the flight
- The emergency telephone number (unless the number is already located in the cockpit and known by the flight crew)
- Confirmation that no damaged or leaking packages and no forbidden materials have been loaded onto the aircraft
- An indication if a hazardous material is being transported under terms of a special permit

The aircraft operator must:

- Retain a copy of HAZMAT shipping papers for 3 years for hazardous waste materials, and 1 year for all other HAZMAT shipments
- Retain written PIC notifications for 90 days
- Make all documents available to any authorized federal, state or local government official upon request

Inspecting and documenting hazardous materials for air transportation

Personnel loading materials and the pilot receiving the information must each acknowledge receipt and accuracy of the shipping papers. Shipping papers must be kept accessible to the pilot and dispatcher during transit.

Packaging used to contain hazardous materials during air travel must be able to withstand significant changes in temperature, altitude and pressure. Sections 173.24 and 173.27 of the HMR list the requirements for different types of packaging including:

- Quantity limitations for inner packaging
- Stipulations for packing absorbent materials around liquid hazardous materials
- Appropriate closure procedures, such as:
 - Securing friction and screw-type closures by a positive means so they do not loosen and come off during transportation

- Enclosing packaging that's not liquid-tight in a leakproof liner, plastic bag or other means

If the shipper uses an overpack, you must verify that:

- Markings and labels on the inside packages are clearly visible or are reproduced on the outside of the overpack
- The overpack bears the word "Overpack"
- The overpack contains a package displaying the "CARGO AIRCRAFT ONLY" label only if:
 - The package is clearly visible and easily accessible
 - It contains a material meeting the provisions in Section 175.75(e)
 - It's the only package contained in the overpack

Reporting Hazardous Materials Discrepancies

Notify the nearest FAA Regional or Field Security Office as soon as possible and provide the following information:

- Your name and telephone number
- Name of the aircraft operator
- Specific location of the shipment concerned
- Name of the shipper
- Nature of discrepancy
- Address of the shipper or person responsible for the discrepancy

Subpart B: Loading, Unloading and Handling Regulations

There are specific quantity limitation, stowage and segregation requirements for transporting hazardous materials aboard passenger and cargo aircraft. Quantity limitation and cargo location requirements for passenger and cargo aircraft are addressed in **HMR Section 175.75**.

Quantity Limitations – Passenger Aircraft

On passenger aircrafts, you can load hazardous materials in the main cargo compartment, provided:

- The compartment is inaccessible to passengers
- It meets certification requirements for a Class B or C aircraft cargo compartment
- The net weight of hazardous materials loaded in an inaccessible cargo hold or freight container (excluding Class 9 materials) is limited to 55 pounds (25 kilograms) plus 165 pounds (75 kilograms) of Division 2.2 non-flammable compressed gas

Quantity Limitations – Cargo Aircraft

Hazardous materials authorized for transportation on cargo aircraft only must be accessible to crew members and other authorized personnel during flight, so they may handle and separate the cargo.

Materials acceptable for passenger and cargo aircraft must meet the **quantity limits** of 55 pounds (25 kilograms) plus 165 pounds (75 kilograms) for Division 2.2 materials per inaccessible compartment or freight container.

Exceptions

- Class 3 Packing Group III materials not meeting the definition of another hazard class, Division 6.1 (unless labeled as "FLAMMABLE"), Division 6.2, Class 7 and Class 9 materials
- Hazardous materials when other means of transportation are impracticable or not available
- Hazardous materials carried on a small, single-pilot cargo aircraft, provided:

- Only the pilot, an FAA inspector, the shipper or consignee of the material, and a representative of the shipper or consignee are on-board
- The pilot has written instructions on the characteristics and proper handling of the materials
- If a pilot change occurs, the new pilot is briefed under a hand-to-hand signature service

HAZMAT Stowage

Inspect HAZMAT packages before loading them. Never load any packages that are damaged or leaking. Stow only compatible materials together. Position packages in accordance with any orientation markings, or with top closures facing up. Secure packages so they don't shift or move during flight.

If you notice a spill in the cargo hold or discover a leaking package as you're unloading hazardous materials:

- Remove the package and place it away from others
- Check if other packages are contaminated
- Initiate the decontamination process

HAZMAT Segregation

Segregating incompatible hazardous materials in a cargo facility, in a holding area at the airport, on the aircraft, and when loading/unloading hazardous materials helps reduce the risk of these materials reacting dangerously if the package becomes damaged, a leak occurs, and the materials leak and commingle.

The table in **HMR Section 175.78** identifies the segregation restrictions for materials, with a primary or secondary hazard represented on the table. Restrictions only apply when a note or "X" marking is located at the intersection of two hazard classes or divisions. "X" means you cannot stow the two hazard classes or divisions together, or in a way where they could commingle and interact if a leak occurs.

Hazard label	Class or division										
	1	2.1	2.2, 2.3	3	4.1	4.2	4.3	5.1	5.2	8	9 see (b)(2)
1	Note 1	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2
2.1	Note 2										X
2.2, 2.3	Note 2										
3	Note 2							X (Note 3)			X
4.1	Note 2										X
4.2	Note 2							X			
4.3	Note 2									X	
5.1	Note 2			X (Note 3)		X					X
5.2	Note 2										
8	Note 2						X				
9 see (b)(2)	Note 2	X		X	X			X			

Subpart C: Special Requirements

Flammable liquids – Section 175.310:

- Allows air carriers to carry flammable liquids without regard to packaging requirements and quantity limits in Columns 7, 8 and 9 of the HMT on cargo aircraft and small passenger-carrying aircraft operating in the State of Alaska or in remote areas

- Provides the conditions in which flammable liquids can be transported on cargo aircraft and small passenger-carrying aircraft
- Lists the restrictions for loading, handling and carrying fuel
- Stipulates the certificates the operator must hold

Oxidizers and compressed oxygen – Section 175.501:

- Stipulates the requirements for stowing cylinders of compressed oxygen aboard aircraft
- Lists the provisions for carrying medical-use compressed oxygen in the cabin of a passenger-carrying aircraft
- Prohibits anyone from loading or transporting HAZMAT packages with an OXIDIZER label in an inaccessible cargo compartment that doesn't have a fire or smoke detection system as well as a fire suppression system

Class 6 poisonous and infectious substances – Section 175.630:

- Packages bearing the POISON, POISON INHALATION HAZARD or INFECTIOUS SUBSTANCE labels must be stowed separately from human- or animal-edible materials
- Inspect the package and cargo hold after transporting any Class 6 hazardous materials and disinfect the cargo area and/or aircraft before operating the aircraft

Class 7 radioactive materials – Section 175.700-703, 706:

- Vented Type B(M) packages and liquid pyrophoric Class 7 radioactive materials are prohibited from air transportation
- You must limit radioactive materials to a transport index of:
 - 3.0 per package, and a combined transport index and criticality safety index of 50 for passenger-carrying aircraft
 - 10.0 per package, the combined transport index 200 for cargo aircraft and the combined criticality index of 50 on a non-exclusive use cargo aircraft, or 100 on an aircraft assigned for the exclusive use of the shipper
- Radioactive materials must be separated from passengers, crew members, live animals and undeveloped film as prescribed for passenger-carrying and cargo aircraft

Plutonium shipments – Section 175.704 of the HMR identifies the requirements for stowing and transporting plutonium based on the gross mass, height and diameter of the package.

Magnetized hazardous materials may cause an erroneous compass reading on aircrafts if you place the materials too close to a magnetic compass or the compass master unit. Materials registering a magnetic field reading greater than 0.00525 gauss at 15 feet (4.5 meters) away from the package are forbidden on any aircraft.

Reporting HAZMAT 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 closed or shut down for at least an hour
- A person or persons to be hospitalized or killed

For all reportable incidents, notify the **National Response Center** at 800-424-8802 or online at www.nrc.uscg.mil as soon as practical but within 12 hours from the time of the reportable incident. Provide the Department of Transportation's Pipeline and Hazardous Materials Safety Administration with a detailed written account of the incident, in accordance with Section 171.16 of the HMR.