

Purpose and Applicability of Regulations

The potential to adversely affect human health and the environment is always present when using, storing, and transporting regulated materials. Consequently, numerous regulations have been created to prevent accidents and reduce the risk of exposure to regulated materials. Complying with these regulations will minimize your liability and protect your employees, the community, and the environment. Following is only a summary of the requirements. You will need to refer to the regulations for specific information.



These regulations only apply to interstate and intrastate transportation of hazardous waste and do not apply to on-site transportation by generators or treatment, storage, and disposal facilities.

Agencies and Their Laws and Rules

■ Indiana State Police – Commercial Vehicle Enforcement Division

Title 49 of the Code Federal Regulations, parts 100-177, regulates the transportation of hazardous materials in the United States. This includes biological, radioactive, and chemically hazardous materials and waste.

Commercial Vehicle Enforcement staff can be reached at (317) 615-7373. The division's website is www.isp.IN.gov/2500.htm.

■ U.S. Environmental Protection Agency

The U.S. Environmental Protection Agency monitors oil storage under the Spill Prevention, Control, and Countermeasure requirements. U.S. EPA enforces Title III of the Superfund Amendments and Reauthorization Act which requires that hazardous material inventory information be submitted to state and local agencies (see Chapter 7).

■ U.S. Department of Transportation

The U.S. Department of Transportation enforces regulations that pertain to inter- and intra-state transportation of hazardous materials under authority of the federal Hazardous Materials Transportation Act and Title 49 of the Code of Federal Regulations.

Release Prevention Tips

Using common sense and care when storing and transferring regulated materials can usually prevent releases. Tips include:

- Train all personnel in spill prevention techniques. Some regulations indicate who, at a minimum, must be trained for handling regulated material and waste.
- Practice safe loading and unloading procedures.
- Have inventory control procedures to track material from receipt to disposal.
- Post warning and instructional signs in appropriate places.
- Adequately label all containers.
- Use appropriate pumps or funnels to transfer liquids.
- Keep lids and covers on containers to control spills and evaporation.
- Install spill basins or dikes in storage areas.
- Install splash guards and drip boards on tanks and faucets.
- Use drip buckets under liquid spigots.
- Prohibit outside draining or replacement of fluids over the ground or on pavement not designed for containment.

You might also reduce the damage caused by spills if you notice them quickly. Routinely check your business for leaks and spills of materials. Some of the regulations specify how often you must monitor your business. Watch for strange odors and discoloration or corrosion of walls, work surfaces, ceilings, and pipes. Also, note if anyone has irritation of the eyes, nose, or throat. All of these can indicate the presence of leaks or poorly maintained equipment.

Environmental Release Prevention and Response Planning

While environmental regulations do not require all businesses to develop release prevention and response plans, having one is recommended to minimize your liability and protect human health and the environment. Depending on your activities, you may be subject to several planning regulations. Each plan has specific requirements under different federal or state laws. Even if you are not required to have a written plan under the regulations described in this section, you are responsible for any release on or from your property. You may be required to report the release to different agencies and will be required to clean up the release. Release notifications and cleanup procedures would be included in plans developed voluntarily or as required by regulation.

A facility may have specific planning requirements according to its individual permit. The facility may be subject to worker safety and health-related planning requirements, and may need to submit information to be included in the Community Emergency Response Plan required by Section 302 of SARA Title III (see Chapter 7). Information about

the hazardous materials kept on-site may be required to be given to the local fire department, which should then tour your facility so they can be adequately trained and have the necessary equipment available to respond to an emergency at your facility.

It is recommended that a facility has a secure and protected box or emergency tube outside the facility that contains emergency contacts, basic facility information, facility maps, and either safety data sheets (SDSs) or a list of potentially harmful materials on-site (including the Chemical Abstracts Service numbers). This recommendation can be discussed with the local fire department, which can provide insight as to what needs to be immediately available if they should have to respond to the facility.

Consider the following in case emergency responders are called to the facility:

- The fire department's response is based on the information you give them. Provide as much detail as possible when calling for help. Have your emergency information readily available and let them know what hazardous materials are involved, how much if known, the location of the spill, if people are inside the facility or taking some response actions, wind direction, etc.
- Have a key contact person (who is knowledgeable about the whole facility and the incident) meet the responders.
- Make sure everyone is accounted for, including both employees and visitors at the facility.
- Keep everyone upwind of the situation and, if necessary, have people move to a different location.
- Have a knowledgeable public relations person from the facility available to address media if they arrive at the scene.
- Follow the emergency responders' directions.

Secondary Containment

One way to reduce the damage caused by chemical releases is to control their impact to air, ground water, surface water, and drains. This can be done by rapid excavating or using items and devices such as absorbents or blocking drains. Depending on what is stored, some regulations require secondary containment structures to control releases.

Even if you are not required by law to have secondary containment, you are encouraged to use it for all materials that, if released, may pose a risk to human health and the environment. You can consider purchasing prefabricated containment units or fabricated units built to your specifications. Many environmental regulations do not specify how these structures must be built, only that they keep the material from reaching surface water and ground water.

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The volume that secondary containment structures must be able to hold varies with the type of substance stored. If the regulations do not specify a greater amount, it is generally acceptable that the containment area be designed to hold, at a minimum, the greater volume of either 10 percent of all the container volumes, or 100 percent of the largest container volume, plus any precipitation that may accumulate in the area.

Examples of secondary containment structures include:

- Curbing
- Dikes, berms, or retaining walls
- Drip pans
- Enclosed cabinets with sealed flooring
- Portable containment units
- Spill diversion and retention ponds for larger areas
- Weirs, booms, or other barriers

When selecting or designing a secondary containment structure, it is important to consider the following:

- Structural strength
- Impermeability
- Compatibility (with the substances contained in the structure)
- Integrity
- Security (to prevent vandalism)
- Protection from extreme temperatures (including ignition sources)
- Squirt distance control

In addition to the above best management practices, it is also important to avoid creating confined spaces; to provide adequate lighting and ventilation; to maintain isolation distances from property lines, public ways, and buildings; and finally to determine how employees will move materials in and out of the area.

■ Transportation, Shipping and Receiving of Hazardous Materials

Hazardous Material Transporters

The U.S. Department of Transportation defines a hazardous material as a substance or material that is capable of posing an unreasonable risk to health, safety, and property when transported in commerce, which includes hazardous waste. Hazardous materials may pose varying degrees of risk in transportation, depending on the type of substance. Transporters of hazardous goods must be aware of how these materials are classified to ensure compliance with marking, labeling, placarding, and shipping paper requirements. Hazardous materials may be classified as any of the following: explosives, gases, flammable liquids, flammable solids, oxidizing substances, poisons and infectious substances, radioactive material, corrosives, miscellaneous goods, and other regulated materials.

A table of hazardous material classes and an index to class definitions are included in 49 CFR 173.2. If the commodity you are transporting is included in one of the classifications identified, you are subject to U.S. DOT's hazardous materials regulations. Another table of hazardous materials is contained in Title 49 CFR 172.101. This table is more detailed and lists proper shipping names and class/division numbers, and provides guidance for the packaging and handling of specific hazardous materials. It is available at www.ecfr.gov.

Standards applicable to transporters of hazardous waste within the United States require the use of a manifest form if the material being transported is hazardous under 40 CFR Part 262. U.S. EPA has expressly adopted certain regulations from U.S. DOT by governing the transportation of hazardous materials. This regulation adoption satisfies U.S. EPA's statutory obligation to promulgate regulations to protect human health and the environment in the transportation of hazardous waste. Adopting U.S. DOT's regulations ensures consistency and avoids duplicative or conflicting requirements. These regulations include:

- 49 CFR 172.101 (hazardous materials table)
- 49 CFR 172.200 (shipping papers)
- 49 CFR 172.300 (marking)
- 49 CFR 172.400 (labeling)
- 49 CFR 172.500 (placarding)
- 49 CFR 172.600 (emergency response information)
- 49 CFR 172.700 (training requirements)
- 49 CFR 172.800 (safety and security plans)
- 49 CFR 173 (general shipping and packaging requirements)

According to these regulations:

- Wastes must be segregated and classified according to the applicable U.S. DOT hazard class.
- Waste chemicals must be packaged according to U.S. DOT guidelines as specified in 49 CFR 173.3 and 173.12.
- Unknown or unlabeled wastes must be identified in order to classify and package the waste according to the appropriate hazard class.
- Waste must be transported on properly licensed and placarded vehicles according to the appropriate hazard class.
- Waste must be disposed of or recycled at a Resource Conservation and Recovery Act-approved facility.

Commercial Vehicle Enforcement

The Commercial Vehicle Enforcement Division of the Indiana State Police enforces the hazardous material regulations contained in 49 CFR, Parts 107, 171-178, and 180. This agency routinely inspects hazardous shipments to ensure that they are following U.S. DOT regulations. Inspections include reviewing shipping paperwork, placarding, labeling, and marking of packages; correct specification packaging; whether cargo is secure; package integrity; load compatibility; and all safety requirements of the Federal Motor Carrier Safety Administration. For more information on the Commercial Vehicle Enforcement Division, view the website at www.isp.IN.gov/2557.htm or call (317) 615-7373.

Liability of Improper Shipments of Hazardous Materials

Compliance with the hazardous materials regulations is the responsibility of both the shipper and carrier.

General shipper responsibilities are contained in 49 CFR Part 173. In many cases, shipper and carrier responsibilities overlap. Although both the shipper and the carrier can perform the task, the carrier is ultimately liable. 49 CFR Part 387 establishes the insurance requirements for vehicles transporting certain amounts of hazardous materials. Both Indiana and federal law require the carrier to maintain proof of financial responsibility on the federal form: *Endorsement for Motor Carrier Policies of Insurance for Public Liability Under Sections 29 and 30 of the Motor Carrier Act of 1980*. Additionally, both carriers and shippers must properly train their employees, as required in 49 CFR 172.

Hazardous Materials Registration Program

The hazardous materials regulations require registration for each person that offers or transports any shipment of hazardous materials that requires placarding (with an exception for farmers offering or transporting hazardous materials in direct support of their farming activities). For a person meeting the U.S. Small Business Administration size standard for a small business or a nonprofit organization, they have the option of renewing their registration for a one- to three-year time period at a fee ranging from \$150 to \$650. All other businesses not defined as small business or nonprofit can renew their registration for a one- to three-year time period for a fee ranging from \$1,325 to \$6,475. Information about U.S. DOT's Hazardous Materials Registration Program, including its online registration service, can be found at <http://phmsa.dot.gov/hazmat/registration>.

You may also call the Hazardous Materials Registration Program at (202) 366-4109 to receive instructions on how to register and obtain the Hazardous Materials Registration Statement (U.S. DOT F 5800.2).

Shipping Papers

Requirements for hazardous materials shipping papers are contained in 49 CFR 172, Subpart C. A shipping paper is any shipping document that communicates a hazard and conforms to the requirements contained in the subpart.

Essentially, all shipping papers must have four elements, referred to as a basic shipping description:

1. Identification number
2. Proper shipping name
3. Hazard class/division number
4. Packaging group (a grouping according to the degree of danger presented by hazardous materials – I, II, or III)

All this information is provided in the Hazardous Materials Table contained in 49 CFR 172.101. When preparing your shipping papers, the basic shipping description must be entered in the order shown above.

In addition to the basic shipping description, shipping papers may also contain the following:

- Total quantity transported
- Type of packaging used
- Shipper certification (certifies materials being transported are in compliance with regulations)
- Emergency response telephone number and response information (specific requirements pertaining to this information are outlined in 49 CFR 172.602–49 CFR 172.604)

The *Emergency Response Guidebook* (ERG) is a reference guide that identifies the proper response procedures that should be taken in the event of a hazardous materials spill or accident. It also lists specific and generic hazards associated with a particular material. The 2012 guidebook and a mobile application for cell phones can be downloaded for free at www.phmsa.dot.gov/hazmat/library. Hard copies may be purchased through the U.S. Government Printing Office bookstore and commercial suppliers, which are accessible via the above website.

Because the information in the ERG is so tightly focused on transportation of hazardous materials, it may not be suitable for other applications. A better resource is WISER (Wireless Information System for Emergency Responders). Developed by the National Library of Medicine, WISER is a system designed to assist emergency responders in hazardous material incidents. It provides a wide range of information on hazardous substances, including substance identification support, physical characteristics, human health information, and containment and suppression guidance. It contains the ERG in

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its entirety, as well as more than a dozen other chemical reference manuals. WISER is available for download at <http://wiser.nlm.nih.gov/>.

Depending on the material being transported, there may be additional requirements, which are contained in 49 CFR 172, Subpart C. In addition, the Federal Hazardous Materials Transportation Law requires that shipping papers (in paper or electronic form) be retained by the shipper (generator) for three years from the date the waste was accepted by the initial carrier. Each retained copy must bear all required signatures and dates up to and including those entered by the next person who received the waste.

Marking of Containers

Markings are placed directly on the outer packaging of hazardous materials to identify the contents inside. The marking will provide a descriptive name, identification number, specifications, plus any required instructions and/or cautions.

The provisions for marking packages are contained in 49 CFR 172, Subpart D. The basic marking requirement consists of the proper shipping name (e.g., Ethyl Alcohol) and the identification number of the hazardous material contained in the package. This information is provided in the Hazardous Materials Table contained in 49 CFR 172.101.

Depending on the material, there may be additional marking requirements. Empty container exceptions, as well as information on authorized abbreviations; bulk packaging; liquid hazardous materials; and marking requirements for explosives, poisonous, and other regulated materials can all be found in 49 CFR 172, Subpart D.

Labeling of Containers

A label is a prescribed hazard warning notice that is applied to the outside of shipping containers of hazardous materials. Labels identify the primary and subsidiary hazards specific to materials, and may give information about handling precautions and prohibitions as well.

If you are transporting hazardous materials, the containers must be labeled accordingly. General labeling requirements are contained in 49 CFR 172, Subpart E. A table that identifies proper labeling specifications for each hazardous material class and division can be found in 49 CFR 172.400. Other sections in Subpart E address authorized label modifications, label placement, and specifications. 49 CFR 172, Subpart E provides a separate section for each authorized label and gives a description and an example of the label.

Placarding of Carrier's Vehicle

Placards are displayed on each end and each side of a carrier and are used to communicate the hazard to industry personnel, the general public, and first responders. Unless the regulations tell you differently, each person who offers or transports a regulated hazardous material must comply with the placarding requirements.

When evaluating placarding requirements you should be familiar with two classification tables, referred to as Table 1 and Table 2, located in 49 CFR 172.504. These tables identify when a carrier must be placarded.

Except for bulk packagings and hazardous materials subject to 49 CFR 172.505, when hazardous materials covered by Table 2 are transported by highway or rail, a placard is not required if the aggregate gross weight does not exceed 1,000 pounds.

Bulk packagings are defined as a single container with:

1. Capacity greater than 119 gallons as a receptacle for a liquid
2. A net mass greater than 882 pounds and a capacity greater than 119 gallons as a receptacle for a solid
3. A water capacity greater than 1,000 pounds as a receptacle for a gas

Bulk packagings containing hazardous materials must be placarded as specified in 49 CFR 172.504 and 172.505 and must remain placarded when emptied unless sufficiently cleaned and purged or refilled with a nonhazardous material such that any residue is no longer hazardous.

If the material has a subsidiary hazard described in 49 CFR 172.505, it must be placarded accordingly. Subsidiary hazards that require a placard include:

1. Poison inhalation hazards
2. Dangerous when wet
3. Radioactive materials with a corrosive subsidiary. All other subsidiary hazards may be placarded, but it is not required.

Except for hazardous materials subject to 49 CFR 172.505, a non-bulk packaging that contains only the residue of a hazardous material covered by Table 2 need not be included in determining placarding requirements.

Additional information on placard applicability, placement, specifications, and other requirements can be found in 49 CFR 172, Subpart F.

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Loading and Unloading – Compatibility and Packaging of Hazardous Materials

Regulations pertaining to the loading and unloading of hazardous materials to and from a motor carrier are contained in 49 CFR 177, Subpart B. The regulations in 49 CFR 177, Subpart B identify the general unloading and loading regulations that apply to all hazardous materials transportation and specific regulations that pertain to the unloading and loading of a particular class or division of hazardous material.

For More Information

Environmental Emergencies	IDEM's 24-Hour Emergency Spill Line (317) 233-7745 or (888) 233-7745 (toll free nationwide) www.idem.IN.gov/4155.htm
Fire and Building Safety	Indiana Department of Homeland Security <i>Division of Fire and Building Safety</i> Plan Review Staff (317) 232-6422 www.IN.gov/dhs/index.htm
Indiana State Police	Indiana State Police <i>Commercial Vehicle Enforcement Division</i> (317) 615-7373 www.isp.IN.gov/2557.htm
Industrial Waste Compliance	IDEM - Office of Land Quality <i>Industrial Waste Compliance Section</i> (317) 308-3013 or (800) 451-6027, ext. 308-3013 www.idem.IN.gov/4996.htm
Land Compliance	IDEM - Office of Land Quality <i>Land Compliance Section</i> (317) 308-3040 or (800) 451-6027, ext. 308-3040 www.idem.IN.gov/4110.htm
Solid Waste	U.S. Environmental Protection Agency Wastes Website www.epa.gov/osw
Spill Response	National Response Center (800) 424-8802 www.nrc.uscg.mil/nrchp.html