



Compliance – Resource Bulletin

DOT – Hazardous Materials Signs

Overview:

The Hazardous Material Transportation Act (HMTA) became law in 1975 for the purpose of providing protection against the dangers inherent in the transportation of hazardous material in commerce. The Hazardous Materials Regulations (HMR) specifies requirements for the safe transportation of hazardous materials in the United States via aircraft, rail car, marine vessels, and motor vehicles. The regulations are administered by the Department of Transportation (DOT) and its subsidiary agencies. The HMR are found in Title 49, Parts 171-180 of the Code of Federal Regulations.

The HMR applies to all persons involved in the packaging, loading, and transport of hazardous materials. These materials are defined in the regulation's Hazardous Materials Table. The table lists and classifies several thousand commonly transported hazardous materials. It also specifies requirements for the packaging, labeling, and transportation of each material. A material's particular hazard is communicated through shipping documents, packaging markings and labels, and placards displayed on transport vehicles. The purpose of labeling and placarding is to inform emergency responders of the types of hazards present so they can properly mitigate a hazardous materials incident or accident. (49 CFR 172.101, 172.3)

Resources:

Hazardous Materials Regulations: (Free) http://www.ecfr.gov/cgi-bin/text-idx?tpl=/ecfrbrowse/Title49/49cfrv2_02.tpl

Hazardous Materials Information Center: (Free) <https://www.phmsa.dot.gov/standards-rulemaking/hazmat/hazardous-materials-information-center>

Design of DOT Hazardous Materials Signs:

- **LABELS OR PLACARDS:** DOT hazardous material signs may be package labels that are affixed to non-bulk packages, or placards that are affixed on the outside of motor vehicles, freight containers, rail cars, intermodal containers and other bulk packages. (172.400) (172.504)
- **BASIC SHAPE:** Both labels and placards are a square diamond on point, but each have specific material and size requirements. (172.407) (175.519) Some common exceptions are:
 - A “Consumer Commodity” label is a rectangle of specific size and color. (172.316)
 - A “Cargo Aircraft Only” label is a rectangle of specific size and color. (172.407)
 - A “Keep Away From Heat” label is a rectangle of specific size and color. (172.317)



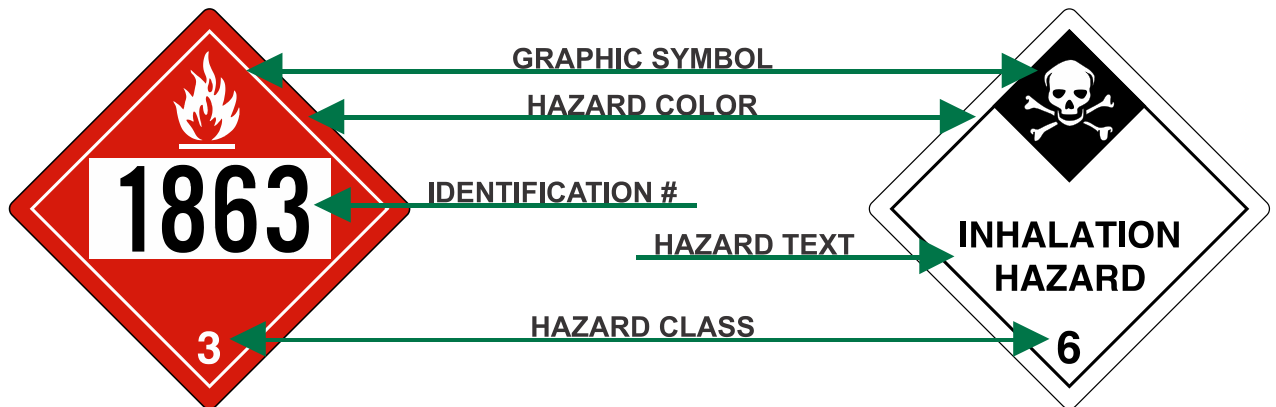
Compliance – Resource Bulletin

(DOT Hazardous Materials Signs Continued)

- **HAZARD CLASSIFICATION:** Each material in The Hazardous Material Table (HMT) is given a hazard class number with description. The nine classes are:

1. Explosives	6. Toxic(Poisonous) & Infectious Substances
2. Gas	7. Radioactive Materials
3. Flammable Liquids	8. Corrosive Materials
4. Other Flammable Substances	9. Miscellaneous Dangerous Goods
5. Oxidizing Substances & Organic Peroxides	

Some materials are so hazardous that they are not allowed to be transported. They are designated as “Forbidden” in the HMT. The HMT serves as the template document for the layout of every hazardous material label or placard (sign). All the information required on the sign: color, graphic symbol, text, class and identification numbers are specified for each material in the HMT. (172.101) **(see graphic aid below)**



- **SIGN ELEMENTS:** Each sign is composed of a number of elements that communicate all the hazard information required. (172.101) (172.411-450) (172.519-560)
 - **Hazard Color:** The color of the sign is stipulated by the hazard class as well as the specific hazard the material may cause. Example: All gases are in class 2 but a flammable gas sign is red while a toxic gas sign is white.
 - **Graphic Symbol:** Most signs display a graphic symbol of specific size, design, and color indicating the specific hazard. If required, these symbols appear at the 12 o'clock position on the sign.
 - **Hazard Text:** Signs may describe the hazard in specific text directly below the graphic symbol.



Compliance – Resource Bulletin

(DOT Hazardous Materials Signs Continued)

- **Hazard Class:** The numeric hazard class (1 thru 9) is displayed on the sign at the 6 o'clock position. Some classes have subclass designations that result in the display of additional digits or letters. Example: 6.1 or 1.4G.
- **Identification Numbers:** When required, identification numbers may be displayed in the center of the sign or on a separate rectangular sign of specific size with an orange background. (172.332)
- **REGULATORY NOTE:** The United States has begun to implement the Globally Harmonized System of Classification and Labeling of Chemicals (GHS). OSHA has revised its Hazard Communication Standard (HCS) that specifies signs and labels for the identification of chemical hazards in the workplace to conform to GHS. The revised standard was to be fully implemented by 7/1/2016. The DOT, which regulates chemicals in the transport sector, has already modified all of its regulations found in HMR; 49 CFR parts 100-180 (referenced in this bulletin) to comply with the GHS. DOT regulations concerning environmental hazardous substances will be addressed after the EPA passes final judgment on the GHS standards.

For DOT Hazardous Materials Signs visit our store:

<https://www.compliancesigns.com/products/chemical/departement-of-transportation-placards>