

A Quick Guide To Reading U.N. and DOT Hazmat Codes

About The U.N. Marking System

The U.N. marking system was designed to quickly communicate several characteristics of Hazmat packaging, along with information on the test levels the packaging has successfully passed. Because these test levels are related to the hazard level and physical and chemical characteristics of the substance to be filled, the markings also indicate some of the properties of the materials that may be packed in each container. [See the U.N. marking system table.](#)

What is the definition of Dangerous Goods (a.k.a. Hazardous Material or Hazmat)?

A dangerous good is any solid, liquid or gas that can harm people, other living organisms, property, or the environment. An equivalent term, used almost exclusively in the United States, is Hazardous Material (Hazmat). Dangerous goods may be radioactive, flammable, explosive, toxic, corrosive, biohazardous, an oxidizer, asphyxiant, pathogen, allergen, or may have other characteristics that render it hazardous under specific circumstances.

Who makes the laws and regulations governing transport of Hazardous Materials?

Laws and regulations governing the use, handling, shipping, and storage of hazardous materials may differ depending on the activity and status of the material. For example one set of requirements may apply to their use in the workplace while a different set of requirements may apply to spill response, sale for consumer use, or transportation. Most countries regulate some aspect of hazardous materials.

The most widely applied regulatory scheme is that for the transportation of dangerous goods. [The Committee of Experts on the Transport of Dangerous Goods](#) of the U.N. Economic and Social Council (UNECE) issues [Model Regulations on the Transportation of Dangerous Goods](#). Most regional and national regulatory schemes for hazardous materials are harmonized to a greater or lesser degree with the U.N. Model Regulation. For instance, the International Civil Aviation Organization (ICAO) has developed regulations for air transport of hazardous materials that are based upon the U.N. Model but modified to accommodate unique aspects of air transportation. Individual airline and governmental requirements are incorporated with this by the International Air Transport Association to produce the widely used [IATA Dangerous Goods Regulations](#). Similarly, the International Maritime Organization has developed the [IMO Dangerous Goods Regulations](#) for transportation on the high seas. Many individual nations have also structured their dangerous goods transportation regulations to harmonize with the U.N. Model in organization as well as in specific requirements.

Following the U.N. Model, the U.S. Department of Transportation (DOT) divides regulated hazardous materials into nine classes, some of which are further divided into divisions. Hazardous materials in transportation must be placarded and have specified packaging and labeling. Some materials must always

be placarded, while others may only require placarding in certain circumstances.

Trailers of goods in transport are usually marked with a four digit U.N. code number. This number can be referenced by first responders like firefighters, police officers, ambulance and other EMS personnel who can find critical information about the material in the [DOT Emergency Response Guidebook](#).

How are Hazardous Materials classified and what special labels are required?

Dangerous goods are divided into [classes](#) on the basis of the specific chemical characteristics producing the risk.

Note: The graphics and text in this article representing the dangerous goods safety marks are derived from the United Nations-based system of identifying dangerous goods. Not all countries use precisely the same graphics (label, placard and/or text information) in their national regulations. Some use graphic symbols, but without English wording or with similar wording in their national language. So always be sure to refer to the Dangerous Goods Transportation Regulations of the country of interest.

For links to a great deal more information about laws and regulations governing Hazmat transportation, storage, and usage, visit our [Resources pages](#) or call us toll-free at 1-800-923-9123.