

Dangerous Goods Transportation

Dangerous Goods

Substances capable of posing unreasonable risk (Damage/Injury) to people, property or environment based their inherent properties/characteristics. Dangerous goods include materials that are radioactive, flammable, explosive, corrosive, oxidizing, asphyxiating, biohazardous, toxic, pathogenic, or allergenic. Also include are physical conditions such as compressed gases and liquids or hot materials, including all goods containing such materials or chemicals, or may have other characteristics that render them hazardous in specific circumstances.

What is “Unreasonable risk”?

Accounting for economic, environmental, medical, social benefits and costs.

Classification of DG

In Early 1957, each nation had their own regulations for **identifying, classifying** and **transport of dangerous goods**.

There are **9 primary** hazard classes has been identified and established internationally by a United Nations committee.

Objective is to ensure that all modes of transport classify dangerous goods in the same manner as prescribed.

United Nations Recommendations

The most widely applied regulatory scheme is that for the transportation of dangerous goods. The United Nations Economic and Social Council issues the UN Recommendations on the Transport of Dangerous Goods, which form the basis for most regional, national, and international regulatory schemes.







The International Maritime Organization has developed the International Maritime Dangerous Goods Code (IMDG Code, part of the International Convention for the Safety of Life at Sea) for transportation of dangerous goods by sea.

United Nations Recommendations are the most significant of all conventions.


Recommendations were effectively split into two parts: the Model Regulations, which form a suggested drafting for **laws and regulations on the transport of dangerous goods**; and the Manual of **Tests and Criteria, which contains technical information** about methods of testing products to ascertain their hazards. Forms a basis for uniform national and international regulations. Take into account land, sea & air transport and form a basis.

Classification and labeling summary

Class 1: Explosives

	1.1 — Explosives with a mass explosion hazard.
	1.2 — Explosives with a blast/projection hazard.
	1.3 — Explosives with a minor blast hazard.
	1.4 — Explosives with a major fire hazard.
	1.5 — Blasting agents.
	1.6 — Extremely insensitive explosives.

Class 2: Gases

	Hazardous Materials Class 2.1: Flammable Gas
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Hazardous Materials
Class 2.2: Nonflammable Gas



Hazardous Materials
Class 2.3: Poisonous Gas



Hazardous Materials
Class 2.2: Oxygen



Hazardous Materials
Class 2.3: Inhalation Hazard

Class 3: Flammable Liquids



Hazardous Materials
Class 3: Flammable Liquids



Hazardous Materials
Class 3: Combustible (Alternate Placard)



Hazardous Materials
Class 3: Fuel Oil (Alternate Placard)



Hazardous Materials
Class 3: Gasoline (Alternate Placard)

Class 4: Flammable Solids



Hazardous Materials
Class 4.1: Flammable Solids



Hazardous Materials
Class 4.2: Spontaneously Combustible Solids



Hazardous Materials
Class 4.3: Dangerous when Wet

Class 5: Oxidizing Agents and Organic Peroxides



Hazardous Materials
Class 5.1: Oxidizing Agent



Hazardous Materials
Class 5.2: Organic Peroxide Oxidizing Agent

Class 6: Toxic and Infectious Substances



Hazardous Materials
Class 6.1: Poison



Hazardous Materials
Class 6.2: Biohazard

Class 7: Radioactive Substances



Hazardous Materials
Class 7: Radioactive

Class 8: Corrosive Substances



Hazardous Materials
Class 8: Corrosive

Class 9: Miscellaneous



Hazardous Materials
Class 9: Miscellaneous