

DANGEROUS GOODS

Dangerous goods are substances which pose risk to health, safety, property or the environment during operation and/or transportation. They are divided into classes on the basis of the specific chemical characteristics producing the risk.

Note: The graphics and text representing the dangerous goods safety marks used on this page 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.

Classification and Labelling Summary Tables

Class 1: Explosives

Information on this graphic changes depending on which, "Division" of explosive is shipped. Explosive Dangerous Goods have compatibility group letters assigned to facilitate segregation during transport. The letters used range from A to S excluding the letters I, M, O, P, Q, and R. The example above shows an explosive with a compatibility group "A" (shown as 1.1A). The actual letter shown would depend on the specific properties of the substance being transported. Description of compatibility groups.

- 1.1 Explosives with a mass explosion hazard. Eg: TNT, dynamite, nitroglycerine.
- 1.2 Explosives with a severe projection hazard.
- 1.3 Explosives with a fire, blast or projection hazard but not a mass explosion hazard.
- 1.4 Minor fire or projection hazard (includes ammunition and most consumer fireworks).
- 1.5 An insensitive substance with a mass explosion hazard (explosion similar to 1.1).
- 1.6 Extremely insensitive articles.



Class 2: Gases

Gases which are compressed, liquefied or dissolved under pressure as detailed below. Some gases have subsidiary risk classes; poisonous or corrosive.

- 2.1 **Flammable Gas**
Gases which ignite on contact with an ignition source.
Eg: acetylene, hydrogen.
- 2.2 **Non-Flammable Gases**
Gases which are neither flammable nor poisonous.
Eg: nitrogen, neon. Includes the cryogenic gases/ liquids (temperatures of below -100°C) used for cryopreservation and rocket fuels.
- 2.3 **Poisonous Gases**
Gases liable to cause death or serious injury to human health if inhaled.
Eg: fluorine, chlorine, hydrogen cyanide.



Class 3: Flammable Liquids

Flammable liquids included in Class 3 are included in one of the following packaging groups:

- 3.1 Packing Group I, if they have an initial boiling point of 35°C or less at an absolute pressure of 101.3 kPa and any flash point;
Eg: diethyl ether, carbon disulfide.
 - 3.2 Packing Group II, if they have an initial boiling point greater than 35°C at an absolute pressure of 101.3 kPa and a flash point less than 23°C;
Eg: gasoline (petrol), acetone.
 - 3.3 Packing Group III, if the criteria for inclusion in Packing Group I or II are not met.
Eg: kerosene, diesel.
- Note: For further details, check the Dangerous Goods Transportation Regulations of the country of interest.



Class 4: Flammable Solids

- 4.1 Flammable solids which are easily ignited and readily combustible.
Eg: nitrocellulose, magnesium, safety or strike-anywhere matches.



- 4.2 Spontaneously combustible substance.
Eg: aluminum alkyls, white phosphorus.
- 4.3 Substances which emit a flammable gas when wet or react violently with water.
Eg: sodium, calcium, potassium.



Class 5: Oxidizing Agents & Organic Peroxide

- 5.1 Oxidizing agents other than organic peroxides.
Eg: calcium hypochlorite, ammonium nitrate, hydrogen peroxide, potassium permanganate.
- 5.2 Organic peroxides, either in liquid or solid form.
Eg: benzoyl peroxides, cumene hydroperoxide.



Class 6: Toxic and Infectious Substances

- 6.1a Toxic substances which are liable to cause death or serious injury to human health if inhaled, swallowed or by skin absorption.
Eg: potassium cyanide, mercuric chloride, hydrofluoric acid.
- 6.1b (Now PHIII) Toxic substances which are harmful to human health (N.B this symbol is no longer authorized by the United Nations).
Eg: low toxicity pesticides, methylene chloride.
- 6.2 Biohazardous substance.
Eg: Virus cultures, pathology specimens, used intravenous needles.
Divided into two categories by the WHO: Cat. A (infectious) and Cat. B (samples).



Class 7: Radioactive Substances

Radioactive substances comprise substances or a combination of substances which emit ionizing radiation.
Eg: uranium, plutonium.



Class 8: Corrosive Substances

Solids or liquids that can dissolve organic tissue or severely corrode certain metals.

- 8.1 Acids
Eg: sulfuric acid, hydrochloric acid.
- 8.2 Alkalis
Eg: potassium hydroxide, sodium hydroxide.



Class 9: Miscellaneous Dangerous Substances

Hazardous substances that do not fall into the other categories.
Eg: asbestos, air-bag inflators, self-inflating life rafts, dry ice.



Other hazardous materials labels (CHIP)

- Xn, Harmful, Xi, Irritant
- T, Toxic
- C, Corrosive
- O, Oxidizing
- F, Flammable
- E, Explosive
- N, Environmental Hazard