



HOW TO IDENTIFY DANGEROUS GOODS

The aim of the present document is to help passengers or shippers to identify dangerous goods.

What are dangerous goods?

The official definition is the following: “Articles or substances which are capable of posing a hazard to health, safety, property or the environment and which are shown in the list of dangerous goods [*published*] in the ICAO Technical Instructions, or which are classified according to these Instructions.”

How can be recognized dangerous goods?

The presence of dangerous goods can be detected using the following factors and signs:

- the type of substance or article. *For example: a bottle of butane*
- the composition or the description of the substance or the article
→ *for example: chlorine*
- the documentation or packaging
 - the mention of a hazard class (e.g., *class 3*) or the presence of a label or a pictogram (see following pages)
 - the presence of “n° ONU” or “UN” followed by 4 figures (e.g., *UN 0197*) or the presence of the figure  on the package

What is the risk?

There is a wide range of dangerous goods, some of them being familiar (detergents, lacquers, paints, gasoline, perfumes, aerosols, lithium cells or batteries, phones for instance). We carry them, store them or use them, often in our daily activity, in the personal or professional life.

In flight, these items are subject to temperature, pressure, vibration, acceleration which can be very different than the conditions of storage or use at home.

In order to take into account this specific environment and ensure the safety of the flight, the regulation introduces limitations or prohibitions for the transport of these items.

What are the possibilities for passengers to transport or for shippers to send these items?

Regarding passengers, the application  presents the restriction or prohibition coming from safety (dangerous goods) and security regulation. Airlines may be nevertheless more restrictive than the regulation itself. <https://www.ecologique-solidaire.gouv.fr/en/items-not-permitted-be-carried-airplanes-or-helicopters-or-subject-restrictions>

Regarding shippers, when transport by freight is possible, the regulation defines conditions related to training of personnel, packing, marking and labelling of packages, documentation. Airlines may be more restrictive than the regulation itself.

Warning: sending dangerous goods by the French postal operator (La Poste) is not permitted, except lithium batteries only if contained in equipment and within strict conditions. See La Poste website about these conditions. <https://www.laposte.fr/courriers-colis/conseils-pratiques/marchandises-dangereuses-interdites>



- Lithium batteries are considered as dangerous goods (whether or not they are contained in a device).
- an article or an equipment (such as lithium cells or batteries) identified as being defective must not be transported or sent.

Examples of substances and articles which may contain dangerous goods

Aerosols	may contain flammable gases or liquids, toxic gases or liquids
Alcohol, alcoholic beverages	may have a percentage of alcohol per volume more than 24%
Magnets and other objects composed of similar materials, magnetized materials	may affect aircraft instruments.
Electrically-powered mobility aids (wheelchairs, etc.)	main contain liquid electrolyte accumulators, lithium batteries, etc.
Portable electric or electronic devices (telephone, computer, photographic device, tablet, etc.)	main contain lithium cells or batteries.
Medical or breathing devices	may contain compressed air or oxygen bottles, chemical oxygen generators or refrigerated liquefied oxygen, lithium cells or batteries.
Connected luggage	May contain lithium cells or batteries.
Lighters	may contain flammable gases or liquids.
Entertainment items (fireworks, etc.)	may contain flammable or explosive products.
Hot air balloons	may contain flammable gas bottles, fire extinguishers, internal combustion engines, batteries, etc.
Lithium batteries	on their own (spare batteries for instance or powerbanks), packed with the equipment or contained in the equipment.
Tool boxes	may contain explosive materials or objects (riveting tools with explosive cartridges), compressed gases or aerosols, flammable gases (bottles of butane or blow torches), flammable adhesives or paints, corrosive liquids, lithium cells or batteries, etc.
Gas bottles	may contain compressed or liquified gases.
Blow torches	may contain flammable gases and be equipped with an electronic lighting device.
Electronic cigarettes (also referred to as e-cigarettes, personal electronic vaporisers or electronic nicotine inhalers)	may contain lithium cells or batteries.
Cryogenic containers	may contain liquid nitrogen in its free state.
Cosmetics (perfumes, fixatives, lacquers, etc.)	may contain flammable gases, liquids or solids.
Drones (including supplies and furnitures)	may contain lithium cells or batteries, flammable gases or liquids (fuel, paints, solvents), etc.
Diagnosis samples	may contain infectious substances.
Test samples	may contain items that meet one of the criteria for dangerous goods, particularly infectious substances, flammable liquids or solids, oxidizers, organic peroxides, toxic or corrosive substances.

Frozen embryos	the packaging may contain refrigerated, liquified gas or dry ice (also referred to as solid carbon dioxide, carbonic ice or dry ice).
Cinematography and media equipment	may contain explosive pyrotechnic devices, internal combustion engine generating sets, liquid electrolyte batteries, lithium cells or batteries, fuel and heat producing items, etc.
Drilling and mineral exploration equipment	may contain explosive items and materials and/or other dangerous goods.
Diving equipment	may contain bottles of compressed gas (e.g., air or oxygen). may also contain high-intensity diving lamps (torches) that may produce extreme heat when they are switched on in the open air. may also contain lithium cells or batteries.
Hiking equipment	may contain explosive items or materials (flares), flammable liquids (gasoline), flammable gases (gas for camping stoves) or other dangerous goods.
Equipment for racing cars or motorcycles	may include engines, carburetors or fuel tanks containing fuel or residual fuel, liquid electrolyte batteries, lithium cells or batteries, flammable aerosols, nitromethane or other additives for fuel, compressed gas bottles, etc.
Medical supplies	may contain components that include flammable liquids or solids, oxidizers, organic peroxides, toxic or corrosive substances, lithium cells or batteries.
Photographic supplies	may contain items that include heat-producing devices, flammable liquids or solids, oxidizers, organic peroxides, toxic or corrosive materials, lithium cells or batteries.
Frozen food (food, fruit and vegetables, etc.)	the packaging may contain dry ice (also referred to as solid carbon dioxide, carbonic ice or dry ice).
Instruments	may include barometers, pressure gauges, switches, rectifier tubes, thermometers, etc., containing mercury.
Switches in equipment or electrical instruments	may contain mercury.
Toys	may contain lithium cells or batteries.
Cryogenic fluid	means refrigerated liquified gases such as argon, nitrogen, helium, neon, etc.
Metal construction equipment	may contain ferromagnetic materials which may affect the aircraft instruments.
Model aircraft equipment (including supplies)	may contain lithium cells or batteries, flammable gases or liquids (fuel, paints, solvents), etc.
Camping equipment, cooking stoves, etc.	may contain flammable gases (butane, propane, etc.), flammable liquids (kerosene, petrol, etc.) or flammable solids (hexamine, matches, etc.).
DIY or gardening equipment (thermal internal combustion engine or electric one)	may contain flammable gases, flammable liquids (fuel, etc.), lithium cells or batteries.
Dentistry equipment	may contain flammable resins or solvents, compressed or liquified gas, mercury and radioactive materials.

Laboratory/test equipment	may contain items that include flammable liquids or solids, oxidizers, organic peroxides, toxic or corrosive materials.
Machine parts	may contain adhesives, paint, flammable sealing and solvent products, liquid electrolyte batteries, lithium batteries, mercury, liquified or compressed gas bottles, etc.
Spare parts for aircraft	may contain explosive items or substances (flares or other pyrotechnic devices), chemical oxygen generators, deactivated pneumatics, bottles of compressed gas (oxygen, carbon dioxide or fire extinguishers), fuel in items of equipment, liquid electrolyte batteries, lithium cells or batteries, matches.
Spare parts for boats	may contain explosive objects or materials (flares), compressed gas bottles (life rafts), paint, lithium cells or batteries (emergency locating transmitters), etc.
Vehicle parts (cars, motorbikes, mopeds) or supplies	may include engines, carburetors or fuel tanks containing or which have contained fuel, liquid electrolyte batteries, lithium cells or batteries compressed gas in tyre inflators and fire extinguishers, airbags, etc.
Lithium cells	on their own (spare cells for instance), packed with the equipment or contained in the equipment.
Chemical products (insecticide, herbicide, thinner, paint, etc.)	may contain flammable liquids or solids, oxidizers, organic peroxides, toxic or corrosive substances.
Chemical products for swimming pools	may contain oxidizing or corrosive substances.
Household products	may contain items that include flammable liquids such as solvent-based paints, adhesives, polishes, aerosols, bleaching agents, corrosive products to clean ovens or unblock pipes, matches, etc.
Pharmaceutical products	may contain items that include radioactive substances, flammable liquids or solids, oxidizers, organic peroxides, toxic or corrosive substances.
Refrigerators	may contain liquified gases or contain an ammonia solution.
Repair kits	main contain organic peroxides and flammable adhesives, solvent-based paints, resins, etc.
Metal pipes	may contain ferromagnetic materials which may affect aircraft instruments.
Vaccines	the packaging may contain dry ice (also referred to as solid carbon dioxide, carbonic ice or dry ice).
Electric bikes, electric scooters, segways, etc.	may contain lithium batteries.

Safety Data Sheet (SDS)

The safety data sheet [or material safety data sheet] for a substance or an article, provided by the supplier (manufacturer, importer or distributor) according to Reach EU regulation, gives information on the composition and the hazard of this substance or article.

It also specifies the potential classification as dangerous goods according to the regulation about the safety of the transport, by providing the following elements: UN number, designation, class/division, etc.

This information features in SECTION 14 of the SDS.

Example:

SECTION 14: TRANSPORT INFORMATION

· <i>UN-Number</i>	
· <i>DOT, ADR, IMDG, IATA</i>	UN1993
· <i>UN Proper Shipping Name</i>	
· <i>DOT, ADR, IMDG, IATA</i>	Flammable liquids, n.o.s. (Toluene, Naphtha)
· <i>Transport hazard class(es)</i>	
· <i>DOT</i>	
	
· <i>Class</i>	3 Flammable liquids
· <i>Label</i>	3
· <i>ADR</i>	
	
· <i>Class</i>	3 (F1) Flammable liquids
· <i>Label</i>	3
· <i>IMDG, IATA</i>	
	
· <i>Class</i>	3 Flammable liquids
· <i>Label</i>	3

In most cases, the safety data sheet is available on the website of the manufacturer (or the distributor).

List of dangerous goods

The list of dangerous goods is included in the Technical Instructions (Doc 9284) of the International Civil Aviation Organization (ICAO).

- see the list provided for information purposes by the DSAC on the ministry [website : https://www.ecologique-solidaire.gouv.fr/transport-marchandises-dangereuses-voie-aerienne](https://www.ecologique-solidaire.gouv.fr/transport-marchandises-dangereuses-voie-aerienne)

Hazard classes/divisions

The designation of a hazard class (or division) means the presence of dangerous goods.

Class 1 - Explosives

Division 1.1:	Substances and articles which have a mass explosion hazard
Division 1.2:	Substances and articles which have a projection hazard but not a mass explosion hazard
Division 1.3:	Substances and articles which have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but not a mass explosion hazard
Division 1.4:	Substances and articles which present no significant hazard
Division 1.5:	Very insensitive substances which have a mass explosion hazard
Division 1.6:	Extremely insensitive articles which do not have a mass explosion hazard

Class 2 - Gases

Division 2.1:	Flammable gases
Division 2.2:	Non-flammable, non-toxic gases
Division 2.3:	Toxic gases

Class 3 - Flammable liquids

Class 4 - Flammable solids, substances liable to spontaneous combustion, substances which, in contact with water, emit flammable gases

Division 4.1:	Flammable solids, self-reactive and related substances and solid desensitized explosives and polymerizing substances
Division 4.2:	Substances liable to spontaneous combustion
Division 4.3:	Substances which, in contact with water, emit flammable gases

Class 5 - Oxidizing substances and organic peroxides

Division 5.1:	Oxidizing substances
Division 5.2:	Organic peroxides

Class 6 - Toxic and infectious substances

Division 6.1:	Toxic substances
Division 6.2:	Infectious substances

Class 7 - Radioactive material

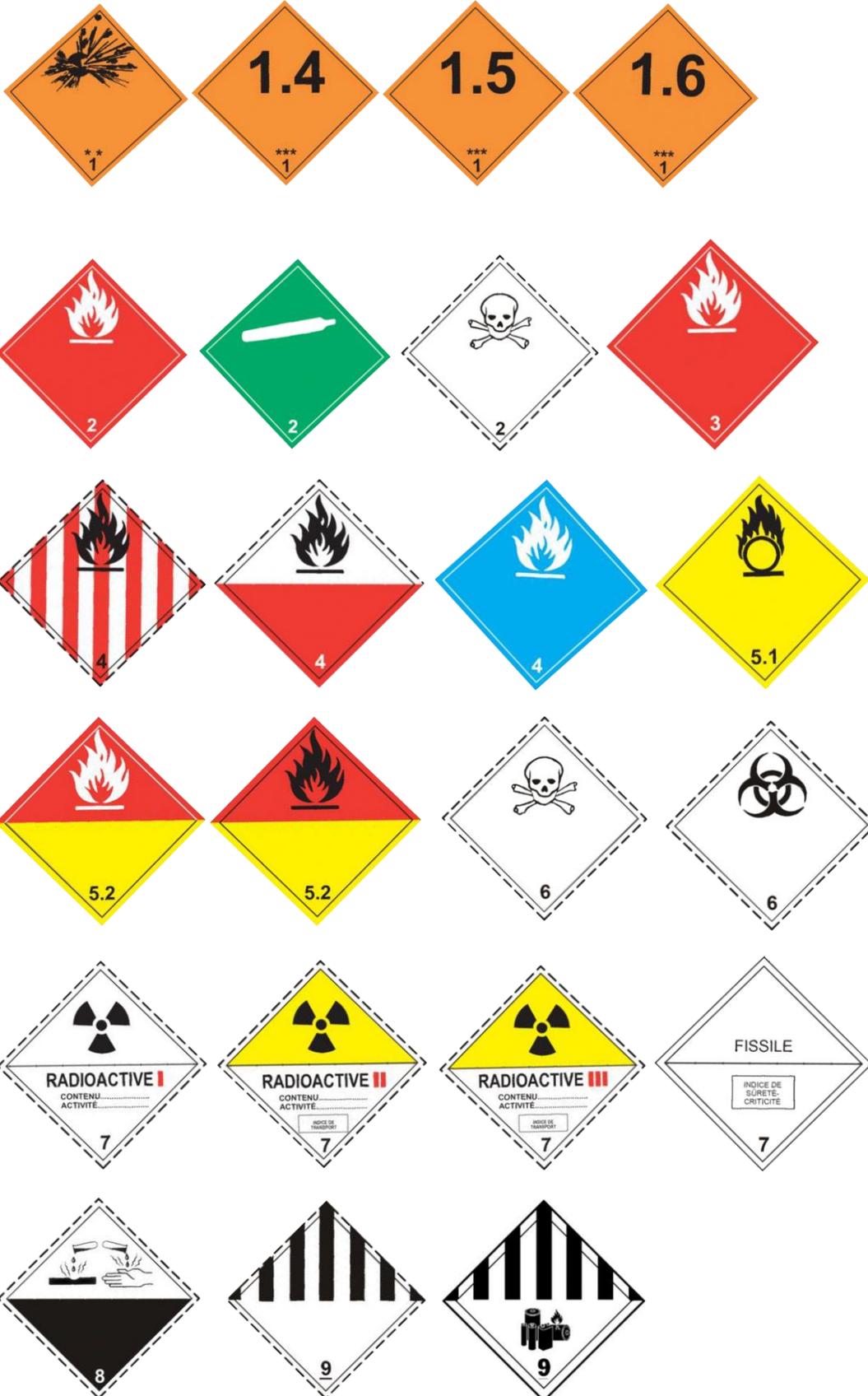
Class 8 - Corrosive substances

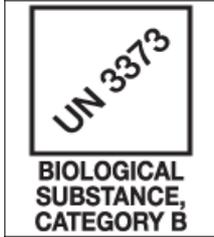
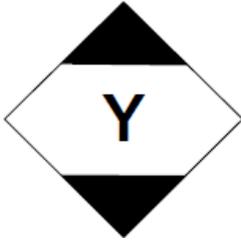
Class 9 - Miscellaneous dangerous substances and articles including environmentally hazardous substances *

* lithium batteries are included in Class 9

Hazard labels

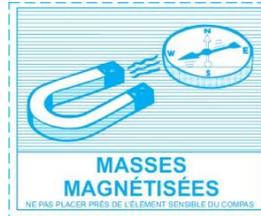
Substances and articles bearing one of the following labels are dangerous goods.



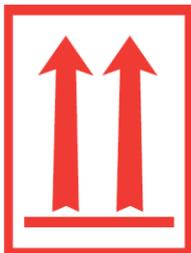


Handling labels

Substances and articles bearing one of the following labels are dangerous goods.



Substances and articles bearing the following label may be dangerous goods.



Pictograms of safety of everyday consumer products

Products bearing one of the following GHS labels are dangerous goods.



Note: A product bearing the GHS corrosive label  is not classified as dangerous goods if the signal word 'Danger' and hazard statement 'causes serious eye damage' applies.