

Transportation of Dangerous Goods (TDG)

Transportation of Dangerous Goods (TDG) - 9 Classes

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What is the purpose of the TDG Act and Regulations?

The purpose of the Transportation of Dangerous Goods (TDG) Act and Regulations is to promote public safety when dangerous goods are being handled, offered for transport or transported by road, rail, air, or water (marine). TDG also establishes safety requirements.

Note: The information below is provided as guidance only. Always check the [TDG Act and Regulations](#) to ensure compliance.

Please also see the following documents in this series:

- [TDG - Overview](#)
- [TDG - Training](#)
- [TDG - Classification](#)
- [TDG – “Special Case” and “Special Provision” Exemptions](#)

How will I know what class a substance has been assigned to?

Dangerous goods are classified into 9 classes, based on the substance's characteristics and properties. These criteria are outlined in the TDG Regulations.

Assigning a substance into a hazard class is usually done by the consignor. The person deciding the classification must be competent, meaning they have the education, training, and experience required for the task. Some substances have been assigned classes in the TDG Regulations.

For more information on how classification works, please see the OSH Answers [Transportation of Dangerous Goods \(TDG\) - Classification](#).

What are the main concerns for each class?

Always consult the TDG Regulations for full details on classes, divisions, and exemptions. This table provides a general overview of each class.





Class	Hazard	Examples
Class 1 Explosives	There are six divisions in this category. To be included, the substance or article has the ability to be a mass explosion, fragment projection, fire hazard (along with a minor blast or projection hazard), may ignite or initiate during transport, be very insensitive with a mass explosion hazard, or extremely insensitive with no mass explosion hazard.	<ul style="list-style-type: none"> •Ammonium picrate •Cartridges for weapons (with specific characteristics) •White phosphorus •Pyrotechnic substances
Class 2 Gases	<p>There are three divisions: flammable gases, non-flammable and non-toxic gases, and toxic gases.</p> <p>Aerosols under UN 1950, AEROSOLS may be transported as flammable or non-flammable or non-toxic gases, depending on the properties of the aerosol.</p>	<ul style="list-style-type: none"> •Propane •Nitrogen •Carbon dioxide Oxygen, compressed •Oxygen, refrigerated liquid •Chlorine •Sulphur dioxide
Class 3 Flammable Liquids	Based on a liquid's flash point and other properties, substances are included in this class if they are expected to be able to catch fire at common temperatures.	<ul style="list-style-type: none"> •Gasoline •Diesel •Methanol
Class 4 Substances/Products include: Flammable Solids; Substances Liable to Spontaneous Combustion; Substances That on Contact with Water Emit Flammable Gases (Water-reactive Substances)	<p>Class 4 has three divisions: flammable solids, substances liable to spontaneous combustion, and water reactive substances.</p> <p>These substances may cause fire (through friction), become explosive when in contact with water, become explosive even with contact with oxygen (air), or undergo a reaction that will result in a stronger exothermic reaction (a reaction that releases heat). For example, Class 4.2 Substances liable to spontaneous combustion includes substances that will ignite within 5 minutes of coming in to contact with air.</p>	<ul style="list-style-type: none"> •Sulphur •Safety matches •Naphthalene •Carbon, activated •Calcium carbide
Class 5 Oxidizing Substances,	The two divisions are oxidizing substances and organic peroxides.	<ul style="list-style-type: none"> •Ammonium nitrate based fertilizer •Hydrogen peroxide •Dibenzoyl peroxide





including Organic Peroxides	These substances may explosively decompose, burn rapidly, be sensitive to impact or friction, react dangerously with other substances, or cause damage to the eyes.	
Class 6 Toxic and Infectious Substances	<p>The two divisions are toxic substances and infectious substances.</p> <p>Substances are included in class 6 if they can cause death or serious injury or harm to human health if swallowed, inhaled, or in contact with skin.</p> <p>Medical or clinical waste may also be classified as an infectious substance if they contain regulated properties.</p>	<ul style="list-style-type: none"> •Strychnine •Arsenic •Chloroform •Phenol •Bacteria •Viruses
Class 7 Radioactive Materials	Radioactive materials include those substances included in the Packaging and Transport of Nuclear Substances Regulations.	•Items with tritium concentrations
Class 8 Corrosive Substances	There are no divisions in this class. Substances are included in Class 8 if they are known to cause injury to the skin such as burns, destruction (thickness), or lesions.	<ul style="list-style-type: none"> •Acetic acid •Sulphuric acid
Class 9 Miscellaneous Products, Substances or Organisms	<p>Substances are considered Class 9 when they are listed in column 3 of Schedule 1 in the TDG Regulation, or by other inclusions and exclusions as defined in the regulations.</p> <p>Substances include those that present a danger sufficient to be included in the TDG regulations, but which cannot be assigned to any other class.</p>	<ul style="list-style-type: none"> •Carbon dioxide, solid (Dry Ice) •Lithium cells and batteries

What are the safety marks for each class?

The size, shape and colour of the required safety marks are outlined in the TDG Regulations.

The following table shows common safety marks for each class. To view all the required safety marks, please see the "[Marks of Safety](#)" from Transport Canada.

Class	Sample Safety Mark(s)
Class 1 Explosives	 <p data-bbox="552 472 1027 506">Sample shows: Class 1.1., 1.2 and 1.3</p>
Class 2 Gases	 <p data-bbox="504 1111 1051 1223">Samples show: Class 2.1 Flammable gases; Class 2.2 Non-flammable and non-toxic gases; Class 3 Toxic gases</p>
Class 3 Flammable Liquids	 <p data-bbox="504 1552 1027 1585">Sample shows: Class 3 Flammable liquids</p>
Class 4 Substances/Products include: Flammable Solids; Substances Liable to Spontaneous Combustion; Substances That on Contact with Water Emit Flammable Gases (Water-reactive Substances)	 <p data-bbox="504 1917 1043 1951">Sample shows: Class 4.1 Flammable solids</p>
Class 5 Oxidizing Substances, including	

Organic Peroxides	 <p data-bbox="504 389 938 461">Sample shows: Glass 5.1 Oxidizing substances</p>
Class 6 Toxic and Infectious Substances	 <p data-bbox="504 1066 1043 1137">Samples show: Class 6.1 Toxic substances; Class 6.1 Infectious substances</p>
Class 7 Radioactive Materials	 <p data-bbox="504 1464 1066 1581">Sample shows Class 7 Radioactive materials, Category I White</p>
Class 8 Corrosive Substances	 <p data-bbox="504 1908 925 1939">Sample shows Class 8 Corrosives</p>
Class 9 Miscellaneous Products, Substances or	

Organisms



Samples show: Class 9 Miscellaneous Products, Substances or Organisms; Class 9 Lithium Batteries

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