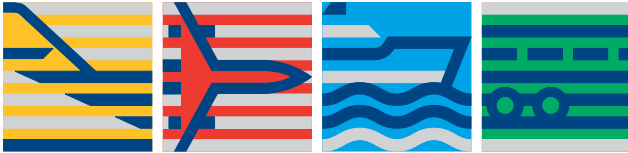




Transport Canada
Safety and Security
 Dangerous
 Goods

Transports Canada
Sécurité et sûreté
 Marchandises
 dangereuses



**TRANSPORT
 DANGEROUS GOODS**

A Primer



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 DANGEROUS GOODS
 - A PRIMER**

Transportation of Dangerous Goods Act, 1992
 - An Act to promote public safety in the transportation of dangerous goods.

Each day, products defined as dangerous goods, that are necessary for maintaining Canadians' quality of life are shipped from one point to another within Canada. They arrive on highways, at airports and harbours and depart from Canada on the same highways, and at the same airports and harbours. These shipments are far too numerous to accurately record but number in the multi-millions each year. With this amount of movement, there is great potential for endangering human life and damaging our environment through mishaps in the course of transportation. It is essential for manufacturers, shippers, carriers, terminals, users and governments to continually work towards minimizing the risk of mishaps in the transportation of dangerous goods and the harm done by mishaps that do occur. To this end, governments have developed statutes and regulations that apply to all stages of dangerous goods movement and inspection and enforcement programs to achieve compliance with the legislation. In Canada, the federal government and each of the provinces and territories have enacted legislation to regulate the transportation of dangerous goods. While the jurisdictional coverage of these pieces of legislation varies, the intent is consistent and, to that end, each piece of legislation adopts the *Transportation of Dangerous Goods Regulations* made under the federal statute.

What is a Dangerous Good?

Many products pose some danger while being transported, but dangerous goods are generally products that are inherently dangerous whether or not they are in

transport. Special precautions are called for to ensure their safe transportation. The *TDG Act, 1992*, defines the term “dangerous goods” as follows;

...means a product, substance or organism included by its nature or by the regulations in any of the classes listed in the schedule.

The schedule referred to is, of course, the Schedule to the *TDG Act, 1992*, illustrated herein, which identifies nine classes of dangerous goods.

How are Dangerous Goods Classified?

Classification matters are dealt with in the regulations. Persons who manufacture dangerous goods or products containing dangerous goods cannot offer them for transport unless they have been properly classified. Each dangerous good falls within one of the nine classes of the Schedule to the Act and is further identified by Divisions within the class. The Division is a more precise identification of the danger associated with the particular good within the general class. The Division may have reference to the flashpoint of flammable liquids, the sensitivity of explosives or the danger associated with compressed gasses. There is also a Packing Group (PG) that is a part of the classification of some dangerous goods and is noted as PG I, II or III. The packing group indicates the level of hazard within a classification, with PG I representing the greatest risk of danger.

“Handling” Dangerous Goods!

The *TDG Act, 1992* defines the term “handling” as meaning the loading, unloading, packing or unpacking of dangerous goods in a means of containment or transport for the purposes of, in the course of or following transportation and includes storing them in the course of transportation.

Perhaps the most important aspect of handling is the packing of dangerous goods into a means of containment; it is generally

believed that if the packaging is suitable, the risk of a serious incident occurring is greatly reduced. To this end, representative committees from industry, government, environmental groups, and others develop standardized designs and methods of manufacturing packaging or means of containment for particular types of dangerous goods. These standards in containment are referred to as Safety Standards and are adopted by the regulations.

A general requirement in the regulations stipulates that when no standard packaging is prescribed, the dangerous goods must be packaged in a way that ensures no discharge, emission or escape of the dangerous goods that could result in danger to life, health, property or the environment.

Consignment inspections at distribution points for manufacturers, carriers, or purchasers focus on the type of packaging used in the shipment of dangerous goods.

Identification of Dangerous Goods and Communication of Hazards

The regulations prescribe labels and placards for each classification of dangerous goods as well as information to be in documents that must accompany the consignment of dangerous goods.

The prescribed markings and documentation are intended to convey the nature of the danger to handlers and accident responders. Generally, smaller packages are required to be labelled while larger shipments that are shipped in bulk containers are placarded. Transport units that are used to ship dangerous goods must be placarded in accordance with the regulations. Prescribed documents must accompany the consignment and be readily accessible.

Placards are a clear indication that a transport unit contains dangerous goods that otherwise might not be identified as such immediately. When an accident involving a transport unit occurs, these placards alert

responders to the presence of dangerous goods and the necessary precautions to avoid injury and damage can be taken. In the proper circumstances, responders may examine the contents of the transport unit to locate the particular consignment of dangerous goods and/or examine the documentation accompanying the consignments to obtain more precise information about the dangerous goods being transported.

Training

The regulations require that, with few exceptions, every person engaged in the handling, offering for transport or transporting of dangerous goods be trained in the aspects of these activities that are applicable to their assigned duties. This is a self-evident, important concern in managing the shipments of dangerous goods. Without training, workers are not able to select the proper packaging for a consignment, or properly label and document it. Without labelling and documentation, placarding of loads may not occur and a resulting accident caused by improper packaging will escalate into a very serious incident for responders and greatly endanger public safety generally.

Violation Remedies and Penalties

Effective enforcement requires that knowledgeable persons monitor the flow of dangerous goods consignments to ensure compliance with the Act and regulations. For that purpose, the Act has created inspectors to cover the many facets of packaging and transportation of dangerous goods and given them various powers to ensure public safety. When inspectors determine that dangerous goods are being handled or transported, they may inspect the consignment and use the powers under the Act to ensure that any movement of the dangerous goods is in compliance with the Act and regulations. On occasion, it may be necessary to prosecute offenders and the Act provides for this type

of enforcement action.

Prosecutions

Prosecutions are undertaken for violations of specific sections of the Act. The penalty provisions provide for fines up to \$50,000.00 for first offences and \$100,000.00 for subsequent offences in summary conviction proceedings, and up to two years imprisonment for indictable offences. The Act also contains some special provisions with respect to orders that may be made by the convicting Court. The orders may be made in addition to any other penalty imposed and they cover such matters as prohibiting a person from engaging in an activity regulated by the Act, requiring a person to compensate others, repair damage to the environment or, contribute to research in respect of the transportation of dangerous goods.

Conclusion

While regulation of an industry or activity is sometimes regarded as an obstacle to commerce, this enactment is supported by those involved in the industry as well as the general public. They recognize that the primary purpose of regulation is to ensure the safety of everyone affected by the movement of dangerous goods and the preservation of our environment. The potentially dire consequences of uncontrolled movement of the many dangerous goods created by our society certainly underscores the need for effective regulation and enforcement.

Compliance and Response Branch
Transport Dangerous Goods Directorate
Transport Canada
330 Sparks Street,
Ottawa, Ontario K1A 0N5

SCHEDULE

- Class 1 - Explosives, including explosives within the meaning of the Explosives Act.**
- Class 2 - Gases; compressed, deeply refrigerated, liquefied or dissolved under pressure.**
- Class 3 - Flammable and combustible liquids.**
- Class 4 - Flammable solids; substances liable to spontaneous combustion; substances that on contact with water emit flammable gases.**
- Class 5 - Oxidizing substances; organic peroxides.**
- Class 6 - Poisonous (toxic) and infectious substances.**
- Class 7 - Radioactive materials and radioactive prescribed substances within the meaning of the Atomic Energy Control Act.**
- Class 8 - Corrosives.**
- Class 9 - Miscellaneous products, substances or organisms considered by the Governor-in-Council to be dangerous to life, health, property or the environment when handled, offered for transport or transported and prescribed to be included in this class.**



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