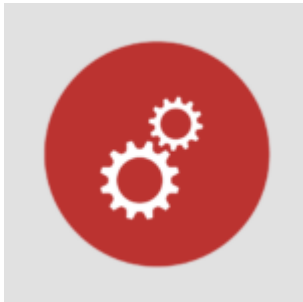


# How to Ensure Safe Road Transport of Compressed Gases



## **Shipments of compressed gases must meet OHS and Transportation of Dangerous Goods Regulations**

Chance are that you use some form(s) of compressed gases at your workplace, especially if you perform welding, materials handling or lab operations. If you make or receive shipments of such gases, you must ensure safe transport and handling under OHS rules and comply with national Transportation of Dangerous Goods Regulations (TDGR). Here's how to comply with rules for shipments by road.

## **1. General Safety Methods for Transporting Compressed Gases**

The safest method of shipping compressed gas cylinders by road is by using a professional gas transport company. Follow safety instructions for both full and empty cylinders. Ensure that cylinder valves are protected against damage by screwing on cylinder caps (except for cylinders on which valves are protected by a permanently installed cylinder collar. Small gas cylinders without fitted permanent valve protection and have a screw-on cylinder cap must be transported in cylinder cases or boxes designed to protect the valves. Cylinders should be securely placed in an upright position, especially liquefied petroleum gases like propane, carbon dioxide and acetylene.

## 2. Bill of Lading

Unless a TDGR exemption applies, shipments of compressed gases must include a dangerous goods shipping document known as a bill of lading listing, at a minimum:

- The consignor's name and address in Canada;
- Date of shipment;
- Description of the dangerous goods in the following order:
  - UN number (e.g., UN1230);
  - Dangerous goods shipping name (e.g., Propane);
  - Primary class and subsidiary class (e.g., 3(6.1)), with the compatibility group letter, following the primary class, for explosives;
  - If applicable, the packing group in roman numerals (e.g., I, II or III); and
  - If applicable, the words "toxic by inhalation" or "toxic ' inhalation hazard" for dangerous goods.
- The quantity in metric measurement (e.g., kg or L) for transport originating in Canada;
- The '24-hour number' of an individual who can provide technical information on the dangerous goods; and
- The consignor's certification.

## 3. TDGR Large Container Safety Markings

Shipments of dangerous goods must have clear and legible safety markings that provide for quick identification of the goods and the hazards they pose. Such markings may include any one or combination of labels, placards, orange panels and signs. Safety markings must list the product's UN number, shipping name, class and TDGR label. Most compressed gases are grouped in 'Class 2, Gases; compressed, deeply refrigerated, liquefied or dissolved under pressure,' with subclasses for:

- 1 Flammable Gases: Commonly used as fuel (example: propane for forklifts);

- 2 Non-Flammable, Non-Toxic Gases: Commonly used in food refrigeration (example: nitrogen);
- 3 Toxic Gases: Commonly used in pulp bleaching (example: sulphur dioxide); and
- 2(5.1) Oxygen and oxidizing gases.

Placards must be attached on all 4 sides of the truck or transportation vehicle when a load of dangerous goods exceeds a gross weight, that is, counting both the cylinder and gas of 500 kg or for any quantities of toxic gases (class 2.3).

## 4. Cylinder Labels

The TDGR also requires labels on the 'small means of containment,' which for compressed gases is the cylinder with a capacity less than or equal to 450 litres. Labels on Small Means of Containment Standard labels must have dimensions of at least 100 mm on each side with a solid border line running 5 mm inside the edge. Labels must be displayed on:

- Any side of the outer surface of a small means of containment other than the side on which it's intended to rest (bottom) or be stacked (top) during transport;
- On or near the shoulder of a cylinder

The UN Number must also be displayed either within a white rectangle located on or next to the primary class label. Other information the label must include the Shipping Name, Technical Name and Classification.

## 5. TDGR Training

Any person who handles, offers for transport or transports dangerous goods must be [adequately trained](#) or work under the direct supervision of a trained person, i.e., one who has received training in classification, shipping names, safety markings, emergency response and other TDGR requirements.