

Are you qualified

to handle propane?

As the cold weather approaches and the days get shorter, propane-powered equipment will be used to provide temporary heat. Propane is a reliable and efficient fuel, but it can be dangerous and even deadly when it's misused. Propane is stored at high pressures and is flammable. If the proper precautions aren't taken, damage to life and property can result. So, it's important to understand the hazards of propane and to implement controls to minimize them.

Propane hazards

Propane can pose a danger when cylinders are being transported, stored, or connected, when propane equipment is being lighted, and when people are working in areas with propane heaters and torches. Here are the most common propane hazards.

- **Fire or explosion**
Propane is flammable. An explosion can result from the accumulation of gas due to leaks at connections, ruptured lines, incorrect lighting procedures, or inadequate ventilation around stored cylinders.
- **Asphyxiation due to displacement of breathable air**
Propane gas is heavier than air, so it can accumulate in low-lying areas and confined spaces.
- **Frostbite**
Liquid propane absorbs heat quickly from the body. If it touches the skin or eyes, it can cause frostbite.
- **Cylinder pressure**
If the pressure in a propane cylinder is too high, the cylinder's relief valve can go off and release large amounts of gas into the air. At 18° C (65° F) the pressure will be about 100 psi.
- **Cylinder weight**
Workers may injure themselves if they don't use proper ergonomic techniques when lifting or moving heavy cylinders.
- **Carbon monoxide**
When propane burns, it releases carbon monoxide (CO). CO is a colourless gas—you can't see it, taste it, or smell it. But even in small amounts, it can

harm or kill you. It is essential to have plenty of ventilation where propane is being burned.

Safety standards

In Ontario, safety standards for fuel are overseen by the Technical Standards and Safety Authority (TSSA). Due to a number of serious accidents over the last few years, the TSSA has stepped up its enforcement of the law as it applies to compressed gases such as propane. Workers who handle propane and propane equipment must either be competent through specific training related to their task, or hold a Record of Training (ROT) certificate. (For more info on activities that require an ROT certificate, see Regulation 215/01 “Fuel Industry Certificates.”) Everyone else at the work site should at least be aware of the hazards of propane and contact their supervisor if they suspect a problem.

There are also legal requirements for the approval of equipment, the use of gas-fired equipment, and the storage and transportation of gas cylinders. The rules and regulations can be found in three different Acts:

- *Technical Standards and Safety Act, 2000*
 - “Gaseous Fuels” (Reg. 212/01)
 - “Propane Storage and Handling” (Reg. 211/01)
 - “Fuel Industry Certificates” (Reg. 215/01)
- *Occupational Health and Safety Act*
 - “Construction Projects” (Reg. 213/91)
 - “Workplace Hazardous Material Information System” (Reg. 860)
- *Transportation of Dangerous Goods Act*

How IHSA can help

IHSA offers two courses that meet TSSA requirements:

Propane in Construction

This course provides the information and hands-on practice that construction workers need in order to safely connect, activate, and disconnect heaters, torches, and propane-powered equipment of less than 400,000 Btu/h.

Propane in Roofing

This course covers the specific hazards related to the use of propane in roofing. It provides information on how to safely connect, disconnect, and activate propane torches and kettles.

Note that the ROT for propane has to be renewed every three years.



IHSA also offers a course on transporting dangerous goods such as propane that meets federal legislative requirements.

Transportation of Dangerous Goods

This course teaches participants their responsibilities under the law as they apply to the safe handling, storing and transporting of nine classes of dangerous goods. Class 2 is compressed gases, which includes propane.

More info on the safe handling of propane, as well as on the courses listed above, is available on our website. You can also download a safety talk on propane, a safety talk on compressed gas cylinders, or the propane chapter of IHSA’s *Construction Health and Safety Manual (M029)* and *Construction Multi-Trades Health and Safety Manual (M033)*.