

Propane: Safe handling and storage

You work hard to build and maintain your business. That's why it's important to ensure you're protected from all potential losses – especially when they're avoidable.

Protecting your business from accidents caused by the mis-handling of hazardous materials like propane should be part of your overall business protection.

Understanding the risks and following the proactive steps provided in this guide can help you improve the handling reliability of your staff and equipment; reduce the chance of accidents, and prevent potential losses.



Propane facts

Did you know propane ...

- is heavier than air;
- is flammable in concentrations of between 2.1% and 9.6% in air;
- ignites at between 493°C (920 F) and 549 °C (1020 F), and
- has a strong odourizer (Ethyl Mercaptan) added for safety.

At room temperature, propane is an odourless, colourless gas. When it's being used, stored in tanks or transported in tanker trucks, propane is cooled and moderately pressurized into a liquid form called liquefied petroleum gas (LPG).

In Canada, propane is widely used for industrial applications in:

- construction, for heating or hot work;
- residential functions such as heating, cooking or refrigeration, and
- transportation, as fuel for fork-lifts, trucks, or cars.

Propane safety requirements

All aspects of the Canadian propane industry are governed by a series of codes and regulations.

The primary code is the Canadian Standards Association (CSA) series of codes. (CAN/CSA B149.2 series)

Additional standards and codes are in place for fittings, valve connectors, hoses, appliances and other equipment used in propane applications i.e. CGA, ANSI, CSA, ASTM, MSS, UL, ULC and ISO standards and codes.

These standards and codes are adopted by authorities in the provinces and territories, as responsible agents for their enforcement; however, they may modify some to meet local conditions or adopt different editions of the standards.

In addition, the propane industry is required to comply with building, fire and electrical codes and acts; labour and workplace safety codes, and local municipal codes and regulations.

Your safe handling and storage practice checklist

- ✓ Ensure all employees handling propane are trained and certified.
- ✓ Enforce strict rules banning open flame and smoking around propane facilities.
- ✓ Store tanks or cylinders:
 - in the position they were designed for, chained or locked in a secure cage or fencing;
 - away from heat or sources of ignition;
 - in a secure, well ventilated area, off the ground on a non-combustible base and away from vehicular traffic.
- ✓ Store industrial type cylinders horizontally, with the safety relief valve beneath the liquid propane level of the tank.
- ✓ Never store tanks or cylinders:
 - indoors or where exposure to temperatures may be greater than 52 degrees Celsius; or
 - if they're damaged, corroded, have been exposed to fire or appear to be leaking.
- ✓ Close the cylinder valve and plug, or cap all cylinder outlets before storing or transporting disconnected cylinders.
- ✓ Recycle old cylinders using a recycler who practices proper handling procedures during the recycling process.

Additional safety measures

- ✓ Install propane gas detector(s) in your facility.
- ✓ Ensure debris, vegetation and grass is removed or cut regularly within 10 metres of your tanks.
- ✓ Inspect all tanks, gas lines, valves and appliances/ equipment regularly.

- ✓ Service your equipment regularly (e.g. annually) using a licensed and qualified technician.
- ✓ Consult with your regulatory agency and licensed, qualified contractor if you have questions.

For further information on this topic, please contact your independent insurance broker or refer to the additional resources below.

Canadian Propane Association
www.propanegas.ca

Technical Standards & Safety Authority
www.tssa.ca

Propane Facts
www.propanefacts.ca

For further information on this topic, please contact your independent insurance broker.

Visit www.avivacanada.com/riskmanagement for more Your guide to... information sheets on other loss control topics.

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