



---

# **Gas Safety**

## **Syllabus**

**For**

**LPG Vehicle Conversion**

**Certificate of Qualification Examination**

**1. Prerequisites to obtain Liquefied petroleum gas vehicle conversion certificate of qualification.**

An applicant for a Liquefied petroleum gas vehicle conversion certificate of qualification must meet the requirements of the *Safety Standards Act* and applicable regulation:

- 1.1 Be the holder of a 3 year automotive industry training credential or an equivalent 3 year automotive trade certificate, or provide documented evidence, acceptable to a provincial safety manager, of a minimum of 3 years of automotive tune-up experience
- 1.2 An applicant for a liquefied petroleum gas vehicle conversion certificate of qualification must have successfully completed a course in the conversion of vehicles to liquefied petroleum gas that is acceptable to a provincial safety manager.
- 1.3 Pass a BC Safety Authority examination for that class of certificate.
- 1.4 Be the holder of an approved manufactures propane conversion kit training credential or certificate.

**2. Scope of a Liquefied petroleum gas vehicle conversion certificate of qualification**

- 2.1 A liquefied petroleum gas vehicle conversion certificate of qualification entitles the holder to maintain, alter, repair and install liquefied petroleum gas vehicle fuel systems under an appropriate permit.

**3.0 Subject Areas of Study based on the CAN/CSA B149.2-10 and B149.5-10 requirements.**

	Percentage (%) on Exam
<b>3.1 General Requirements and Properties of Propane</b>	
3.1.1 Formula	15%
3.1.2 Combustible limits	
3.1.3 Handling / Filling	
3.1.4 Characteristics	

**3.2 Fuel Tanks and Equipment Requirements**

- 3.2.1 Tank types 20%
- 3.2.2 Approved tank pressures
- 3.2.3 Certification requirements
- 3.2.4 Tank connections
- 3.2.5 Tank hardware
- 3.2.6 Tank Mounting
- 3.2.7 Tank components
- 3.2.8 Tank code requirements
- 3.2.9 Tank safety and related components
- 3.2.10 Installation applications for different vehicle types

**3.3 Fuel Delivery System Requirements**

- 3.3.1 Complete system components 15%
- 3.3.2 Component operation
- 3.3.3 Line installation
- 3.3.4 Component location practices
- 3.3.5 System valves operation
- 3.3.6 System safety components and operation
- 3.3.7 Electronic / engine controls components
- 3.3.8 Electronic / engine controls operation
- 3.3.9 Carburetor and fuel injection applications
- 3.3.10 System installation / design code requirements

**3.4 Piping/Tube/Hose Requirements**

- 3.4.1 Tubing requirements 15%
- 3.4.2 Hose requirements
- 3.4.3 Tubing / Hose fittings
- 3.4.4 Tubing / Hose joint requirements
- 3.4.5 Piping requirements
- 3.4.6 Testing requirements

**3.5 Electrical / Wiring Requirements**

- 3.5.1 Electrical components 5%
- 3.5.2 Wiring / component protection
- 3.5.3 Connection requirements
- 3.5.4 Wiring / component installation

**3.6 Servicing / Vehicle Use Requirements**

3.6.1	System component troubleshooting	25%
3.6.2	How to select replacement components	
3.6.3	Tools/equipment for diagnosing	
3.6.4	Tools/equipment for propane handling	
3.6.5	Understand emission readings	
3.6.6	Understand engine control sensors	
3.6.7	Understand emission control systems	
3.6.8	Define test methods and points	
3.6.9	Technician responsibilities to end user	
3.6.10	Vehicle safety / use requirements (indoors)	

**3.7 Regulatory Requirements**

3.7.1	LPG vehicle conversion qualification permissions	
3.7.2	LPG vehicle conversion qualification responsibilities	5%
3.7.3	Shop regulatory requirements	
3.7.4	Safety Manager / Safety Officer powers	
3.7.5	Additional Provincial technical requirements	

**Total** 100%