

# WHMIS Review



## WHMIS Review Test

Worker's name:

\_\_\_\_\_ (print) \_\_\_\_\_ (sign)

Date: \_\_\_\_\_

Employer's name:

\_\_\_\_\_ (print) \_\_\_\_\_ (sign)

Date: \_\_\_\_\_

# WHMIS Review Questions

For each question circle the letter (a, b, c, etc.) of the correct answer.

- 1) Hazardous materials include...
  - a. materials which are toxic, corrosive or dangerously reactive
  - b. materials which are flammable or combustible
  - c. compressed gasses
  - d. all of the above.
  
- 2) Who is responsible for enforcing WHMIS provincially?
  - a. Ministry of Labour officials
  - b. the Fire Marshall
  - c. the Disease Control Institute
  - d. the employer
  
- 3) The purpose of WHMIS is to provide information on...
  - a. using and storing workplace hazardous materials
  - b. storing workplace hazardous materials
  - c. handling workplace hazardous materials
  - d. all of the above
  
- 4) Employer responsibilities under WHMIS include ensuring...
  - a. that the Joint Health and Safety Committee or Health and Safety Representative be consulted concerning the WHMIS training program
  - b. that all controlled products have an MSDS available for employee review
  - c. that products are properly labelled and that workers are trained in their safe use
  - d. all of the above

- 5) If a worker finds a controlled product with a torn or illegible label, or if it has no label, he or she must...
- report it to the supervisor
  - call the supplier immediately
  - consider the product to be safe to use
  - call 911 and leave the building
- 6) Which of the following are the three main elements of WHMIS?
- MSDSs, controlled products and labels
  - Training, labels and MSDSs
  - hazard symbols, MSDSs and training
- 7) WHMIS workplace labels are required when...
- a product is poured from its original container into a new one
  - a bulk shipment arrives without a supplier label
  - a hazardous material is produced on site and placed in a container
  - all of the above
- 8) WHMIS supplier labels...
- act to warn workers of the dangers of hazardous products
  - have a distinctive cross-hatched border
  - must be in both English and French
  - all of the above
- 9) What materials should you avoid when working with propane? (Check the appropriate section of the MSDS for propane to find the answer.)
- corrosive materials
  - oxidizing materials
  - biohazardous materials

- 10) MSDSs must be prepared for all hazardous products and must be updated every three (3) years.
- True
  - False
- 11) Employers must supply WHMIS training only to those workers who are exposed to hazardous materials on a daily basis.
- True
  - False
- 12) Which of the following best describes the storage requirements for propane?  
*(Go to the appropriate section of the propane MSDS to find the answer.)*
- secure cylinders upright in a ventilated space, valves closed with a protective cap or guard
  - secure cylinders horizontally in a closed shed, valves closed with a protective cap or guard
  - secure cylinders upright in a ventilated space, valves closed and next to any oxidizing agents in storage
- 13) The worker is responsible for attaching supplier labels to controlled products.
- True
  - False
- 14) According to the MSDS for propane, which of the following best describes its effects on the eyes and the skin?  
*(Go to the appropriate section of the propane MSDS to find the answer.)*
- the gas causes reddening and tearing of the eyes; skin contact with the liquid causes an effect similar to sunburn
  - the gas causes severe irritation of the eyes accompanied by watery discharge; skin contact with the liquid has little effect but may cause drying
  - as a gas the product has no effect on the eyes; skin contact with the liquid can cause cold burn similar to frostbite

15) Workplace labels must identify the product, give safe handling instructions and remind workers that an MSDS is available for the product.

- a. True
- b. False

16) What personal protective equipment is required when working with propane?  
*(Go to the appropriate section of the propane MSDS to find the answer.)*

- a. hard hat, respirator with organic vapour cartridge, and insulated gloves
- b. safety glasses, insulated gloves, and a self-contained breathing apparatus if the product is likely to bring the oxygen content of the air below 18%
- c. safety goggles, safety boots, and a dust/mist respirator

17) What are the chronic or long-term effects of overexposure to propane? *(Go to the appropriate section of the propane MSDS to find the answer.)*

- a. Long-term low-level exposure can cause congestion of the lungs and can ultimately lead to lung cancer.
- b. There are no reported effects from long-term low-level exposure.
- c. Long-term low-level exposure can cause breathing difficulty and allergic skin reactions

18) What emergency and first aid procedures are required should liquid propane make contact with the skin? *(Go to the appropriate section of the propane MSDS to find the answer.)*

- a. for "cold burn," place affected area in cold water until circulation returns; for frostbite, cover with butter and bandage securely
- b. for "cold burn," place affected area in lukewarm water and keep warm until circulation returns; for frostbite, keep part warm by placing it next to the body and obtain medical care
- c. for "cold burn," place affected area in cold water until circulation returns; for frostbite, do not give first aid but obtain medical care immediately

19) Which of the following best describes how propane should be handled? (*Go to the appropriate section of the propane MSDS to find the answer.*)

- a. transport and store cylinders upright in a ventilated space, valves closed and equipped with a protective cap or guard; do not store with other flammable materials
- b. transport and store cylinders upright in a closed space, valves closed and equipped with a protective cap or guard; do not store with other biohazardous materials
- c. transport and store cylinders upright in a ventilated space, valves closed and equipped with a protective cap or guard; do not store with oxidizing materials

20) Which answer below contains only correctly named Classes of controlled products?

- a. flammable and combustible material, poisonous and infectious material, oxidizing material, always fatal material, biohazardous material
- b. poisonous and infectious material, flammable and combustible material, compressed gas, perfectly safe to use material, material causing other toxic effects
- c. biohazardous material, dangerously reactive material, corrosive material, oxidizing material, flammable and combustible material.
- d. poisonous and infectious material, flammable and combustible material, biohazardous material, dangerous non-metallic material, oxidizing material

**SECTION 1 – PRODUCT INFORMATION**

**Product Name:** Propane  
**Trade Name:** LPG (Liquified Petroleum Gas), LP-Gas  
**Chemical Formula:** C<sub>3</sub>H<sub>8</sub>

**Supplier:** Superior Propane Inc.  
 1111 - 49th Avenue N.E.  
 Calgary, AB T2E 8V2

WHMIS CLASSIFICATION  
 Class A - Compressed Gas  
 Class B, Division 1 - Flammable Gas

**Business:** (403) 730-7500

**Local Market**  
**Emergency Number:** \_\_\_\_\_  
 (Non Medical)

**Application and Use:** Propane is commonly used as a fuel for heating, cooking, automobiles, forklift trucks, crop drying and welding and cutting operations. Propane is used in industry as a refrigerant, solvent and as a chemical feedstock.

**SECTION 2 – HAZARDOUS INGREDIENTS**

COMPONENTS	CAS NO.	% Volume (v/v)	LD50
Propane	74 -98-6	90% - 99%	Not Applicable
Propylene	115 -07-1	0% - 5%	Not Applicable
Ethane	74 -84-0	0% - 5%	Not Applicable
Butane and heavier hydro carbons	106 -97-8	0% - 2.5%	Not Applicable

Occupational Exposure Limit:  
 Based upon animal test data, the acute toxicity of this product is expected to be inhalation: 4 hour LC50 = 280,000 ppm (Rat).  
**Note:** Composition is typical for HD-5 Propane per The Canadian General Standard Board CGSB 3.14 National Standard of Canada. Exact composition will vary from shipment to shipment.

**SECTION 3 – CHEMICAL AND PHYSICAL DATA**

**Form:** Liquid and vapour while stored under pressure.  
**Boiling Point:** -42°C @ 1 atm.  
**Freezing Point:** -188°C  
**Evaporation Rate:** Rapid (Gas at normal ambient conditions).  
**Vapour Pressure:** 1435 kPa (maximum) @ 37.8°C  
**Vapour Density:** 1.52 (Air = 1)  
**Coefficient of Water/Oil Distribution:** Not available.  
**pH:** Not available.

**Solubility in water:** Slight, 6.1% by volume @ 17.8°C  
**Specific Gravity:** 0.51 (water = 1)  
**Appearance/Odour:** Colourless liquid and vapour while stored under pressure. Colourless and odourless gas in natural state at any concentration. Commercial propane has an odourant added, ethyl mercaptan, which has an odour similar to boiling cabbage.\*  
**Odour Threshold:** 4800 ppm

\* With proper handling, transportation and storage, adding a chemical odourant such as eth-merc has proven to be a very effective warning device, but all odourants have certain limitations. The effectiveness of the odourant may be diminished by a person's sense of smell, by competing odours and by oxidation which may cause a potentially dangerous situation.

**SECTION 4 – FIRE OR EXPLOSION HAZARD**

**Flash Point:** -103.4°C  
**Method:** Closed cup.  
**Flammable Limits:** Lower 2.4%, Upper 9.5%  
**Auto Ignition Temperature:** 432°C  
**Products Evolved Due To Heat Or Combustion:** Carbon monoxide can be produced when primary air and secondary air are deficient while combustion is taking place.  
**Fire and Explosive Hazards:** Explosive air-vapour mixtures may form if allowed to leak to atmosphere.  
**Sensitivity To Impact:** No.  
**Sensitivity To Static Discharge:** Yes.

**Fire Extinguishing Precautions:** Use water spray to cool exposed cylinders or tanks. Do not extinguish fire unless the source of the escaping gas that is fueling the fire can be turned off. Fire can be extinguished with carbon dioxide and/or dry chemical (BC). Container metal shells require cooling with water to prevent flame impingement and the weakening of metal. If sufficient water is not available to protect the container shell from weakening, the area will be required to be evacuated. If gas has not ignited, liquid or vapour may be dispersed by water spray or flooding.  
**Special Fire Fighting Equipment:** Protective clothing, hose monitors, fog nozzles, self-contained breathing apparatus.

**SECTION 5 – REACTIVITY DATA**

**Stability:** Stable.  
**Conditions To Avoid:** Keep separate from oxidizing agents. Gas explodes spontaneously when mixed with chloride dioxide.  
**Incompatibility:** Remove sources of ignition and observe distance requirements for storage tanks from combustible material, drains and openings to building.

**Hazardous Decomposition Products:** Deficient primary and secondary air can produce carbon monoxide.  
**Hazardous Polymerization:** Will not occur.

## SECTION 6 – TOXICOLOGICAL PROPERTIES OF MATERIAL

### ROUTES OF ENTRY:

**Inhalation:** Simple asphyxiant. No effect at concentrations of 10,000 ppm (peak exposures). Higher concentrations may cause central nervous system disorder and/or damage. Lack of oxygen may cause dizziness, loss of coordination, weakness, fatigue, euphoria, mental confusion, blurred vision, convulsions, breathing failure, coma and death. Breathing high vapour concentrations (saturated vapours) for a few minutes may be fatal. Saturated vapours may be encountered in confined spaces and/or under conditions of poor ventilation. Avoid breathing vapours or mist.

**Skin and Eye Contact:** Exposure to vapourizing liquid may cause frostbite (cold burns) and permanent eye damage.

**Ingestion:** Not considered to be a hazard.

**Acute Exposure:** The acute toxicity of this product is expected to be inhalation: 4 hour LC50=280,000ppm (Rat).

**Chronic Exposure:** There are no reported effects from long term low level exposure.

**Sensitization to Product:** Skin–unknown, Respiratory–unknown.

**Occupational Exposure Limits:** American Conference of Governmental Industrial Hygienists (ACGIH) lists as a simple asphyxiant. ACGIH TLV: 1000 ppm.

**Carcinogenicity, Reproductive Toxicity, Teratogenicity, Mutagenicity:** No effects reported.

## SECTION 7 – PREVENTIVE MEASURES

**Eyes:** Safety glasses, are recommended when transferring product.

**Skin:** Insulated gloves required if contact with liquid or liquid cooled equipment is expected. Wear gloves and long sleeves when transferring product.

**Inhalation:** Where concentration in air would reduce the oxygen level below 18% air or exceed occupational exposure limits in section 6, self-contained breathing apparatus is required.

**Ventilation:** Explosion proof ventilation equipment required in confined spaces.

## SECTION 8 – EMERGENCY AND FIRST AID PROCEDURES

### FIRST AID:

**Eyes:** Should eye contact with liquid occur, flush eyes with lukewarm water for 15 minutes. Obtain immediate medical care.

**Skin:** In case of “Cold Burn” from contact with liquid, immediately place affected area in lukewarm water and keep at this temperature until circulation returns. If fingers or hands are frostbitten, have the victim hold his hand next to his body such as under the armpit. Obtain immediate medical care.

**Ingestion:** None considered necessary.

**Inhalation:** Remove person to fresh air. If breathing is difficult or has stopped, administer artificial respiration. Obtain immediate medical care.

### SPILL OR LEAK:

Eliminate leak if possible.

Eliminate source of ignition.

Ensure cylinder is upright.

Disperse vapours with hose streams using fog nozzles. Monitor low areas as propane is heavier than air and can settle into low areas. Remain upwind of leak. Keep people away. Prevent vapour and/or liquid from entering into sewers, basements or confined areas.

## SECTION 9 – TRANSPORTATION, HANDLING AND STORAGE

- Transport and store cylinders and tanks secured in an upright position in a ventilated space away from ignition sources (so the pressure relief valve is in contact with the vapour space of the cylinder or tank).
- Cylinders that are not in use must have the valves in the closed position and be equipped with a protective cap or guard.
- Do not store with oxidizing agents, oxygen, or chlorine cylinders.

- Empty cylinders and tanks may contain product residue. Do not pressurize, cut, heat or weld empty containers.
- Transport, handle and store according to applicable federal and provincial codes and regulations.

### Transportation of Dangerous Goods (TDG)

- TDG Classification: Flammable Gas 2.1
- TDG Shipping Name: Liquefied Petroleum Gas (Propane)
- TDG Special Provisions: 56, 90, 102
- PIN Number: UN1075

## SECTION 10 – PREPARATION

Superior Propane Inc., Regulations & Safety Department. (403) 730-7500 Date prepared: November 2001.  
Supersedes: September 1999.

The information contained herein is believed to be accurate. It is provided independently of any sale of the product. It is not intended to constitute performance information concerning the product. No express warranty, implied warranty of merchantability or fitness for a particular purpose is made with respect to the product information contained herein.

To obtain a record of program completion, you must verify your answers to the printed quiz by entering them in the question boxes of the online version. Once you have completed the online quiz, have your employer sign and date the record of training card below.

**WHMIS Update and Review**



This acknowledges that

\_\_\_\_\_ has completed the online WHMIS Update and Review produced by the Construction Safety Association of Ontario.

Employer \_\_\_\_\_ Date \_\_\_\_\_

*Signed*

Construction Safety Association of Ontario  
21 Voyager Court South  
Etobicoke, Ontario  
M9W 5M7