


<i>HEALTH AND SAFETY MANUAL</i>		
Title: Safe Handling of Liquefied Petroleum Gas (LPG)		
Approved by: Greg Savoy		Rev. 1/1/08

1 Purpose/Scope:

The purpose this section is to outline safe handling procedures of Liquefied Petroleum Gas (LPG).

This policy applies to all Company employees who handle LPG and those employees who change LPG tanks on forklifts or other equipment fueled by LPG.

2 Responsibilities:

- 2.1 Regional Managers shall ensure that only approved LPG containers are used and stored properly.
- 2.2 Supervisors shall ensure that only approved LPG containers are used, stored properly and employees under their supervision are trained in the safe handling of LPG.
- 2.3 Employees must be trained and follow LPG safe handling procedures.

3 General:

3.1 Statement of general information regarding Liquefied Petroleum Gas: Liquefied Petroleum Gas is derived from two principal sources, it may be extracted, from the earth, with natural gas or derived from crude oil during the refining process. The two most common LP gasses are propane and butane. LP gas is widely used as a domestic fuel because it is convenient, relatively inexpensive and safe when handled correctly. As with any fuel however, certain simple safety precautions must be observed in its use.

3.2 Statement regarding the characteristics of LP Gas:
 LP gas is usually stored as a liquid under pressure. When released into the atmosphere at any temperature above its boiling point, -42° C for propane and 0° C for butane, it will change from a liquid to a vapor. LPG on bare skin causes frostbite. LPG is considered to be nontoxic but may have some anesthetic effect if inhaled in high concentrations. LPG is heavier than air. In both its liquid and vapor states, LPG is colorless and odorless. An odorizing agent is usually added to ensure that any leakage can be detected by smell.

3.3 PPE Requirements:

3.3.1 When handling or there is potential exposure to LPG, safety glasses and rubber or leather gloves must be worn to protect the body from cold related injuries.

3.4 Precautions to ensure employee safety when using LPG.

3.4.1 When using LPG appliances or equipment, always follow manufacturer's directions and maintain appliances in a clean and undamaged condition.

3.4.2 Before operating LPG equipment, be sure connections are tight.

- If leaks are present, turn off the equipment and check connections.
- Do not operate until the leak is fixed.
- Be aware that if a leak has occurred, LPG is heavier than air and will settle in low spots such as cellars or drains – ventilate well.
- Keep vertical cylinders upright, even when empty, to ensure the pressure relief valve can operate effectively. A cylinder lying horizontally and involved in fire is more likely to burst.
- Except cylinders designed to operate horizontally must be stored horizontally so safety equipment will work properly.
- LPG cylinders shall be stored outside of buildings or shops.
- See the Compressed Gas Program for additional information regarding proper storage.
- Ensure the pressure relief valve is pointed away from the structure supporting the cylinder, in case the relief valve operates and the discharge ignites.
- When using a gas barbecue or other LPG equipment outdoors, be sure the area is clear and free from any ground fuel or litter that may ignite in the event of a fire.
- Protect cylinders from direct sun.
- On extremely hot days, if the relief valve operates, cool the cylinder with water.
- Keep cylinders clear of rubbish or brush.
- Any fire around the cylinder will increase the pressure within.
- Secure portable cylinders.
- If the relief valve operates, unsecured cylinders could move about rapidly and erratically due to the jetting action.

3.5 Fork truck LPG Safety:

3.5.1 The following procedure to safely remove and install a LPG tank describes a typical operation; the forklift manufacturer's procedure must be reviewed and followed if different.

- Ensure no one is smoking within fifty feet of fork truck during replacement of the LPG tank.
- Lower the forks and load to the ground.
- Set the brake, shut down the engine and turn the ignition off if the fork truck shut down by running out of fuel.
- Wear safety glasses and rubber or leather gloves
- Close the valve on the tank.

- Loosen the hose from the tank slowly, allowing pressure to bleed off.
- Release securing clamp on tank.
- Position body for proper lifting techniques.
- Get close to the load,
- Use legs for lifting,
- Do not twist while lifting.
- Remove the empty LPG tank and replace with a full one.
- Secure the clamp, and attach the hose.
- Open the valve slowly and check for leaks.
- Place the empty LPG tank in the proper storage area.

4 References:

NFPA No. 58-1969 Liquefied Petroleum Gas Code.

5 Exhibits:

None.