

OSC | 11
Ohio Safety Congress & Expo



#473 Propane safety: Gas grills to forklifts

Ron Crist, Certified Fire & Explosion Investigator

Wednesday, March 30, 2011
11 a. m. to Noon



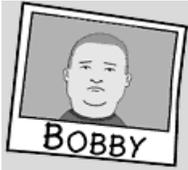
**OBWC Safety Congress
Presents
Propane Safety
Fryers to Forklifts**

The King of the Hill



HANK

NAME: Hank Hill
OCCUPATION: Salesman of propane and propane accessories with honor and dignity.



BOBBY

AMBITION: Ladies' man, runway model, proctologist, comic (stand-up or prop), shaman, salesman of propane and propane accessories

Propane



Characteristics Of LP-Gas

- Tasteless
- Colorless
- Usually Odorless
- When Mixed With The Proper Amount Of Air They Can Burn.
- Most LP-Gases Are Capable Of Being Either A Liquid Or Gas.

Characteristics Of LP-Gas

- Most LP-Gases Can Be Stored And Transported As Liquids Under Pressure.
- Under Normal Outdoor Temperatures Liquid LP-Gases Expand Rapidly Into Gas.
- LP-Gases Will Expand When Heat Is Applied.
- LP-Gases Are Not Toxic, But They Present Possible Inhalation Hazards.
- Released In A Confined Space, Propane Can Displace Oxygen.

How many ways can propane burn you?

- Typically there are two ways:
 - The first is by fire or explosion.
 - Which can lead to first, second, third degree burns or even death
 - The second is by coming in contact with the liquid propane.
 - Coming in contact with the liquid propane will lead to frostbite.
 - Frostbite from propane can be first, second or third degree burns.
 - Frostbite from propane should be treated the same as you would other frostbite injuries.
- Always make sure you wear proper PPE when changing cylinders

Turkey Fryers



The U.S. Consumer Product Safety Commission says.....

- since 1998, there have been 75 incidents associated with turkey fryers nationwide. These incidents involved fires, flames or burns.
- The majority of fires, flames and burns occurred while the oil was being heated, prior to adding the turkey.
- Burns from splashing oil can also occur, especially when adding frozen meat.
- All meat should be thoroughly thawed and dried before adding it to the hot oil.

State Fire Marshal Urges Ohioans To Use Turkey Fryers Safely

- (Columbus) – Former State Fire Marshal Stephen K. Woltz is reminding Ohioans to read the directions and exercise caution when using turkey fryers during the holiday season.
- “Like any deep fryer, turkey fryers can cause severe burns and start fires. They can be very dangerous if not used properly,” said Marshal Woltz. “It’s important to keep an eye on the temperature of the turkey fryer, prior to adding the turkey. Watch for smoke. If you see any smoke at all, turn off the fryer immediately. Smoke indicates the fryer has become overheated.”

Other safety tips from the State Fire Marshal:

- Follow directions closely to make sure your fryer is operating properly.
- Keep the fryer in view when it is on and keep it away from buildings and other structures.
- Never leave the fryer unattended.
- Place the fryer outside when in use.
- Don't put it in a garage or carport.
- To avoid burns, make sure meat is thawed and lower it into the hot oil slowly.
- Make sure you use the proper amount of oil, following the manufacturer's directions. Too much oil could make it spill over when you add the turkey.

Other safety tips from the State Fire Marshal:

- Keep a close eye on the temperature.
- If the fryer begins to smoke, turn it off.
- The sides, handles and pot lid become dangerously hot when the fryer is in use.
- Stay clear of the fryer to prevent burns and use pot holders when moving the lid or touching handles.
- Make sure the fryer is clean of any old grease, especially on the outside so that will not catch fire.
- Keep an ABC multi-purpose dry chemical fire extinguisher nearby.
- Never use water to extinguish a grease fire. Water and grease are a dangerous combination and could cause hot grease to splatter.

Misused Turkey Fryers



Misused Turkey Fryers



Misused Turkey Fryers

Gas Grills



Americans Love Backyard Barbecuing

- 74 percent of U.S. households have a barbecue grill
- 91 percent of grill owners have cooked outdoors in the past year
- 62 percent of gas grill owners cook outdoors year-round
- Men are far more likely to barbecue than women (66 percent vs. 34 percent) and even more so when entertaining (72 percent).
- Women are more apt to decide when and what to barbecue.
- The most popular barbecue staples continue to be hamburgers, steak, hot dogs, and chicken breasts.

(Source: Hearth, Patio & Barbecue Association)

Facts About Outdoor Grilling

- Three in five adults (59 percent) – and 72 percent of parents – say barbecuing with family and friends is their favorite way to spend the Memorial Day holiday.
- Barbecuing tops the list of activities American adults are most looking forward to when it comes to July 4th. In fact, 44 percent say they are most looking forward to barbecuing with family and friends, followed by 37 percent that say they are most looking forward to going to a fireworks show.
- A barbecue or cookout tops the list of the types of events American adults most want to be invited to this summer, with a picnic a distant second place (64 percent vs. 25 percent respectively).

Facts About Outdoor Grilling

- Almost two-thirds of parents (63 percent) say that barbecuing or grilling outdoors is the most fun way for their family to eat dinner together during the summer months. Less than half (28 percent) as many say the same about sitting down for a home-cooked meal.
- While 84 percent of gas grill owners say it is very important to follow basic safe grilling tips, only one in three (35 percent) say they know "a great deal" about such tips.

(Source: Propane Education & Research Council)

Gas Grills-Portable



Gas Grills-Cart Models



Gas Grills-Built-in Models



The Ultimate Portable Grill



CPSC Releases Grill Safety Tips

- Liquid petroleum (LP) gas or propane, used in gas grills, is highly flammable.
- Each year about 30 people are injured as a result of gas grill fires and explosions.
- Many of these fires and explosions occur when consumers first use a grill that has been left idle for a period of time or just after refilling and reattaching the grill's gas container.
- To reduce the risk of fire or explosion, consumers should routinely perform the following safety checks:
 - Check the tubes that lead into the burner for any blockage from insects, spiders, or food grease. Use a pipe cleaner or wire to clear blockage and push it through to the main part of the burner.

CPSC Releases Grill Safety Tips

- Check grill hoses for cracking, brittleness, holes, and leaks. Make sure there are no sharp bends in the hose or tubing.
- Move gas hoses as far away as possible from hot surfaces and dripping hot grease. If you can't move the hoses, install a heat shield to protect them.
- Replace scratched or nicked connectors, which can eventually leak gas.
- Check for gas leaks, following the manufacturer's instructions, if you smell gas or when you reconnect the grill to the LP gas container.
- If you detect a leak, immediately turn off the gas and don't attempt to light the grill until the leak is fixed.

CPSC Releases Grill Safety Tips

- Keep lighted cigarettes, matches, or open flames away from a leaking grill.
- Never use a grill indoors.
- Use the grill at least 10 feet away from your house or any building.
- Do not use the grill in a garage, breezeway, carport, porch, or under a surface that can catch fire.
- Do not attempt to repair the tank valve or the appliance yourself.
- See an LP gas dealer or a qualified appliance repair person.
- Always follow the manufacturer's instructions that accompany the grill.

Grill Fires



Propane Cylinder Storage



Propane Cylinder Storage

- Consumers should use caution when storing LP gas containers.
- Always keep containers upright.
- Never store a spare gas container under or near the grill or indoors.
- Never store or use flammable liquids, like gasoline, near the grill.

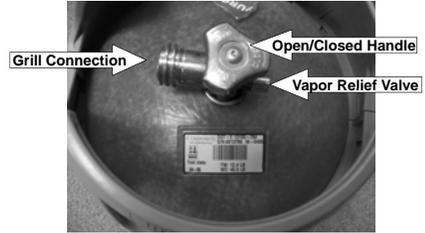
Transporting the Propane Cylinder

- Propane cylinders must always be transported upright (with the vapor relief valve in the vapor space).
- Propane cylinders shall always be secured while transporting to avoid the tipping of the cylinder.
- For grill cylinders milk crates make a good way to transport cylinders.

The Propane Grill Cylinder



The Propane Grill Cylinder Valve



And More Safe Grilling Tips

Commercial – Industrial Locations



Propane Storage Outside Buildings

- Cylinders stored at a location open to the public must be protected by:
 - A 6-foot high industrial fence (chain link or other metallic type) enclosure with at least one 3-foot wide exit if the enclosed area is 100 square feet or less, or two 3-foot wide exits if the enclosed area is larger than 100 square feet, or
 - A lockable ventilated metal locker or rack that prevents tampering with valves and pilferage of the cylinder.
- Outside cylinder storage must be located at least 10 feet away from the exit of a building with only one exit, and at least 5 feet away from a building with two or more exits.

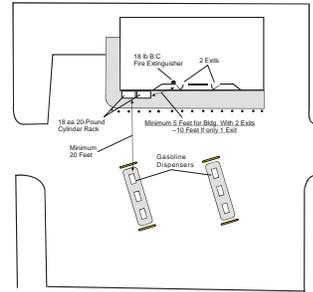
Additional Requirements

- Regardless of the quantity of propane stored, the cylinders must be at least 20 feet away from any automotive service station fuel dispenser.
- If 22 or more 33-pound industrial truck cylinders (or more than 720 pounds) are stored in one location, the storage area must be provided with at least one approved portable fire extinguisher having a minimum capacity of 18-pounds dry chemical with a B:C rating.
- The required fire extinguisher shall be located no more than 50 feet from the storage location.
- If the cylinder storage area is subject to damage from vehicular traffic, appropriate protection must be provided.

Distance Requirements

Specified Structures or Areas #	720 or Less	721 to 2500	2501 to 6000	6001 to 10,000	Over 10,000	Quantity of Propane Stored (pounds)
Nearest Important Building	0	0	10	20	25	Horizontal Distance in Feet
Line of Adjoining Property that May Be Built Upon	0	0	10	20	25	
Busy Thoroughfares or Sidewalks	0	10	10	20	25	
Line of Adjoining Property Occupied by Public Gathering Places (Examples: schools, churches, hospitals, playgrounds, etc.)	0	10	10	20	25	
LP-Gas Dispenser	5	10	10	20	25	

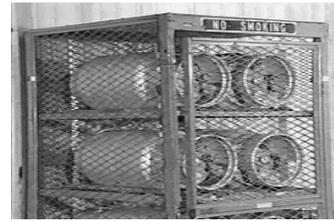
Distance Requirements



Industrial Trucks

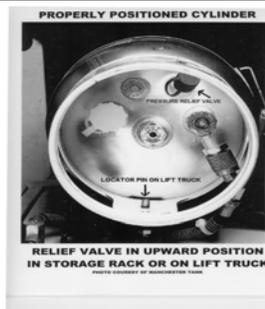


Industrial Truck Installation

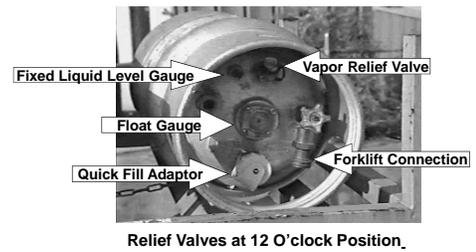


Industrial Truck Cylinder Rack Installation.

Properly Positioned Forklift Cylinder



Forklift Cylinder



Transporting Forklift Cylinders



Inside Building Propane Storage Limit

Maximum Allowable Storage Quantities of LP-Gas in Mercantile, Industrial, and Storage Occupancies			
Occupancy	Mercantile	Industrial	Storage
Maximum Allowable Quantity:			
Storage (state units: lbs, gals, etc.)	200 (1 lb max/cyl.)	300	300
MAQ increases for:			
Total (including threshold) for cabinets	200	300	300
Total (including threshold) for suppression	200	300	300
Total (including threshold) for both cabinets and suppression	200	300	300
Total (including threshold) for other (describe)		Adm 300 lb	10,000 lb
		300 ft separation	In special rooms or bldgs per Chapter 10

More Information www.usepropane.com

Kids Information <http://propanekids.com/>



From Hank, Peggy, Bobby and myself, Thank You!
Be Safe and enjoy the rest of the Congress!



Points of view, ideas, products, demonstrations or devices presented or displayed at the Ohio Safety Congress & Expo do not constitute endorsements by BWC. BWC is not liable for any errors or omissions in event materials.

OSC | 11
Ohio Safety Congress & Expo