



SAN DIEGO

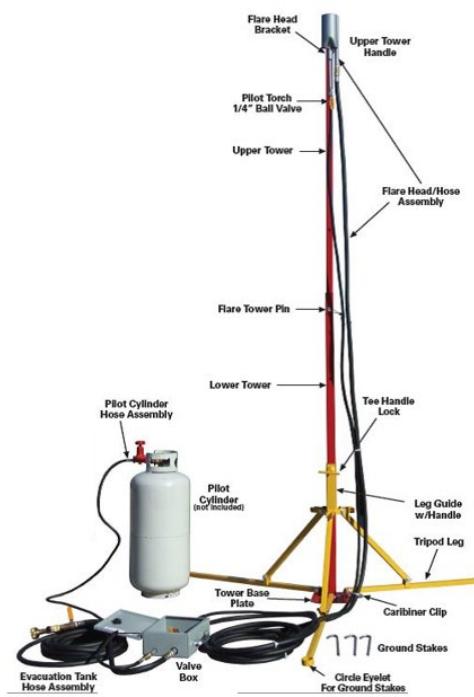
HAZARDOUS INCIDENT RESPONSE TEAM



STANDARD OPERATING GUIDELINES

Propane (LP) UN 1075; UN 1978

ITEM	DESCRIPTION
<input type="checkbox"/> BACKGROUND INFORMATION	<ul style="list-style-type: none">ERG 115.Cylinders fall into two groups of propane service, liquid and vapor. Cylinders in liquid service are commonly found on forklifts while bottles in vapor service are easily spotted fueling a gas grill. Commercially available "propane" fuel, or LPG, is not pure. Propane contains odorants including ethyl mercaptan. Prolonged exposure to odorant may prevent you from smelling the leak.Be aware of BLEVE potential if it has fire contactFor facility contacts, chemical inventory, and site map info, login to the California Environmental Reporting System (CERS) https://cers.calepa.ca.gov/
<input type="checkbox"/> INITIAL SIZE UP	<ul style="list-style-type: none">For leaking cylinders, approach upwind, establish safe distances up to 330 feet, isolate/remove ignition sources, stop flow of gas if possible, using spark proof tools.Some leaks occur from overfilling, especially during warmer weather, check bleeder valves and spit valves for source of leak. See pictures below.Contact propane dealer if possible. See useful contacts below.Do not stop leak in a way that eliminates the pressure relief device, such as using a wet cloth in poor location. Best solution may be to allow slow venting. Be advised auto-refrigeration may occur and leak may stop and restart.Monitor the area for flammable gases with a 4-gas (apply correction factors as needed).Propane gas is normally heavier than air.
<input type="checkbox"/> CHEMICAL INFORMATION (if available)	<ul style="list-style-type: none">Cylinder Operating pressure= 10-200 psigConfined/under pressure= liquid below -44FVapor Pressure= 109 psi @STPLEL/UEL= 2.1% / 9.5%V.D= 1.6Ionization potential = 11.07 eVMelting/Freezing Point = -306FBoiling Point= -44FAutoignition= 842FFlashpoint= -155FExpansion= 270/1Pressure Relief Device 375/250 psi (cylinder/tank)
<input type="checkbox"/> TACTICAL ACTIONS	<ul style="list-style-type: none">Site Safety / Incident Action Plan, Evacuations up to 330'Determine rescue if applicable (First FD Engine FRO will execute rescue but may consult Hazmat)Stay Upwind/upgrade. Gas is normally heavier than air.Thoroughly ventilate enclosed spaces.Remove all ignition sources -static, motors, cars, flaresDetermine quantity and location of leakPlace hose lines down for personnel protectionMonitor the area for flammable gases with 4-gas (Gas density and LEL is needed)If possible, shut off flow of gas in FFTO
<input type="checkbox"/> MITIGATION AND CONTAINMENT	<ul style="list-style-type: none">DEH HIRT has a portable flare (Red Dragon) intended use for propane, use with butane is suitable based on HIRT experience.

	<ul style="list-style-type: none"> Flare gas vapor only, not liquids. Despite the manufacture claims the equipment can be used on liquids experience has shown flaring of vapor is most appropriate. The flare should be set up upwind of the flammable tank(s) are located Flaring should be done in a location that provides for adequate control of isolation zones. Setting up the red Dragon LPG flare- Find a location with a minimum 40 foot radius and 50 feet high with no ignition sources in the area. A hose line should be set up by the local engine, be cautious of liquid dripping from the top of the flare and catching fire. For flaring operations you will need the following: <ul style="list-style-type: none"> At least one combustible gas indicators Propane for the pilot light (5 gallons or larger) The CGA connection box for tools, extra gas connections and testing soap. A water source for emergencies, and for reheating cooled vessels to expedite vapor generation and burn rate.
	
<input type="checkbox"/>	ADDITIONAL RESOURCES
<input type="checkbox"/>	<ul style="list-style-type: none"> Fire Law: traffic control EMS DPW
<input type="checkbox"/>	USEFUL CONTACTS
<input type="checkbox"/>	<ul style="list-style-type: none"> SDGE emergency: (619) 234-6234 or (800) 611-7343 Airgas (855) 524-7427 (866) 734-3438 or (800) 224-7427 Air Products and Chemicals, Inc. (800) 523-9374 or (760) 931-9555 Amerigas (propane emergencies) (858) 578-6513 ExpoPropane (858) 715-4617 Ferrellgas (858) 271-4400 Matheson (760) 744-9353 Parsons (858) 278-2050 PraxAir (800) 225-8247 or (800) 645-4633 or (619) 232-7341 Petrolane (aka Amerigas) (760) 728-1424 Stoody Industrial Welding & Supply Inc. (619) 234-6750 Westair Gases & Equipment (619) 239-7571
<input type="checkbox"/>	PERSONAL PROTECTIVE EQUIPMENT
	<ul style="list-style-type: none"> Turnouts with SCBA

<input type="checkbox"/>	MONITORING & DETECTION	<ul style="list-style-type: none"> CGI (check correction factors for hexane and methane) TIC -Can be used to identify leaking fittings/cylinders Safe Sites – for large scale releases
<input type="checkbox"/>	DECONTAMINATION	<ul style="list-style-type: none"> Propane is non-polar, use a fan to dissipate residue. Water and detergent for gross contamination with non-polar gases that are adhering to PPE
<input type="checkbox"/>	INCIDENT TERMINATION	<ul style="list-style-type: none"> Safe to reoccupy -Use monitoring equipment to ensure the space is below the LEL, OSHA PEL or AGEL
<input type="checkbox"/>	TANK DESIGNS 