



Propane Truck Loading Terminal
Driver Instruction Manual

September 2005

INTRODUCTION

Propane Truck Loading Terminals on Enogex's system are designed and equipped for loading motor carrier vehicles by their drivers. Successful operation of the driver loading program requires close and continued cooperation between Enogex and the motor carrier. Thorough training of the motor carrier driver in the proper loading procedures is essential.

The purpose of this booklet is to provide the motor carrier vehicle owners and drivers with the specific methods of operation of the Driver Operated Propane Truck Loading Terminal and the safety procedures, rules, and practices that must be followed to ensure safe and efficient loading. These instructions are designed to eliminate ignition sources and reduce the risk of a product release while at the loading dock.

Therefore, it is extremely important that this Driver Instruction Manual and check list for driver certification be thoroughly read and understood. The certifications then must be signed by everyone involved in this operation. This will ensure that all participants will enjoy safe working conditions and efficient loading operation.

If it is determined by Enogex that the carrier's driver is unable to follow the safety procedures, rules, and practices of the Driver Instruction Manual, the individual will be refused access to load at all Enogex facilities.

In these procedures, the motor carrier company, whether it is a private contract or common carrier, is referred to as **Carrier**. The Carrier's motor vehicle is referred to as **tractor** (power unit) and **trailer** (tank) and jointly as **truck**. **Driver** is the individual operating a truck on behalf of a motor carrier as an employee, contractor, sole proprietor or agent. **Shipper** is the propane owner who has requested Enogex to deliver propane to a specific Propane Truck Loading Terminal.

Strict adherence to the procedures and safety precautions embodied in this manual will ensure loading in an efficient and safe manner.

The principal safety precautions to be observed are:

- If the loading area is occupied, the next truck must stay in the staging area until the loading area is clear. **DO NOT** approach the area while another Driver is depressurizing the loading hose/arm.
- Position your truck parallel to the loading rack. **The tractor engine must not be operated while loading.**
- No service work of any kind will be performed on any truck when located within the terminal.
- If a tractor stalls in the loading area and fails to start, it must be towed, **NOT PUSHED**, at least 50 feet from the loading area before any work may be performed on it. The use of a booster battery is prohibited within 50 feet of the loading area.
- **DO NOT OVERLOAD.** Overloading is both illegal and dangerous. The preset quantity must be set at, or below, the permissible load volume according to current local, state, and federal regulations.
- **SMOKING IS PROHIBITED** except in designated smoking areas.
- The Driver shall provide and use chock blocks to secure the truck. (NFPA 58-6-3.8)
- **NEVER LEAVE A TRUCK UNATTENDED WHILE IT IS BEING LOADED.**
- Approved clothing is required while loading at Enogex Terminals. See the Clothing Policy on page 16 for more information.
- Material Safety Data Sheets (MSDS) for all products and chemicals present are available at each Terminal. Each Driver should use the MSDS's to become familiar with the physical properties, the hazards, suggested medical concerns and treatment for each product and chemical.
- The Driver should maintain awareness of Terminal Surroundings at all times and be alert to unfamiliar or unusual sights, noises or mechanical malfunctions. Such events should be immediately reported to Enogex by calling the control room at the Terminal you are loading out of. **The use of a cell phone is not allowed in the loading facility.**
- In the event of an uncontrolled product release or any emergency situation, the Driver should follow the Emergency Procedures posted inside the Driver's building at the Terminal the Driver is loading out of.

Federal Regulations

The Carrier shall follow all codes of federal regulations (Title 49 – Part 177) regarding the transportation of hazardous materials.

Equipment and Materials Loss

It is essential that Company property not be removed from the loading area. Carriers and the Shippers they represent will be held jointly responsible for any removal of equipment and/or material.

Product Loss

The Carrier will be held fully responsible for all product that passes the loading arm shutoff valves. If mechanical failure occurs at an individual loading dock and the Driver fails to notify Enogex, the Carrier will be held responsible for the product actually measured by the meter.

Product Quality

Product quality is guaranteed to the end of the loading hose shutoff valve. The Carrier is responsible for product quality after it leaves the facility.

Product Contamination

It is the Carrier's responsibility to see that the transport trailer is empty of liquid and free of vapors other than LPG or nitrogen upon arrival at the Terminal for loading. The maximum allowable oxygen concentration in the vapor space shall not exceed 0.4% by volume.

Carrier Equipment

Tractor and trailer shall be in safe working order. The trailer will be equipped with a brake locking device and rounding lugs prior to loading.

Driver Authorization

It is the Carrier's responsibility to send only those Drivers that have been previously instructed and approved by Enogex to any Enogex Terminal. Any new Driver, Drivers requiring recertification or any untrained Driver shall complete and submit to Enogex for approval the Drivers Safety Training Certificate enclosed in this Manual prior to loading.

Insurance

A current Certificate of Insurance must be in the Carrier's file with Enogex **BEFORE** loading of a transport will be allowed. Minimum amounts for hauling "extremely hazardous materials" as defined by applicable federal regulations and supported by the Department of Transportation (DOT) is \$5,000,000.00.

Communication

A telephone is located in the Driver's building at each Terminal. Personnel are on duty 24 hours a day, 7 days a week at Enogex Gas Control (405) 330-5232. Plant control room phone numbers are posted near the telephone for assistance.

Calumet Liquid Loading Facility

CAUTION:

DO NOT attempt to load propane during lightning storms or other dangerous weather conditions.

All spills, leaks, safety hazards, or mechanical malfunctions identified while completing the loading operations shall be reported to a plant operator at (405) 893-2266, extension 34.

1. Observe windsock at Terminal to identify emergency escape route.
2. Enter Terminal through gate on North side of premises.
3. Park truck parallel to load rack with tractor pointing East.
4. Shutoff vehicle engine and all electrical devices including cell phones and pagers.
5. Set brakes and chock wheels.
6. Connect ground cable to unpainted surface on trailer frame.
7. Verify green lamp on grounding system panel is "ON.
8. Connect loading hose and vent line to trailer.
9. Open loading line shutoff valve located at trailer.
10. Open vent line shutoff valve located at trailer.
11. Check for leaks.
12. Tighten connection or remove and reconnect if necessary.
13. Open loading line shutoff valve located at load rack.
14. Open vent line shutoff valve located at load rack.
15. Enter Driver's PIN on keypad located on Driver's building door.
16. Enter the following information in the DANLOAD 6000 located in the Driver's building:
 1. Driver's ID number;
 2. Trailer ID number;
 3. Destination ID number;
 4. Customer ID number;
 5. Selected product (Stench Propane);
 6. Preset quantity.

NOTE:

Pressing the START button will begin the loading operation. The propane loading pumps will start automatically and deliver the preset quantity of product into the trailer. The loading pumps will stop automatically when the measured quantity equals the pre-set quantity. Odorant will be automatically injected in an amount proportionate to the preset quantity.

17. Press the Start button on the DANLOAD 6000.
18. Monitor loading operation until delivery is completed.
19. Close loading line shutoff valve located at load rack.
20. Close vent line shutoff valve located at load rack.
21. Close loading line shutoff valve located at trailer.
22. Close vent line shutoff valve located at trailer.
23. Disconnect loading line and vent line and return to hose cradle.
24. Disconnect ground from vehicle and return to cable spool.

NOTE:

The load manifest will print automatically inside the Driver's building once the ground cable is disconnected. The load manifest will automatically advance to the tear-off position.

25. Pull the manifest at a 90° angle against the cutting edge to remove from printer.
26. Verify the accuracy of the information printed on the manifest.
27. If any information is printed incorrectly on the manifest, notify a plant operator and **DO NOT** move the truck from the Terminal.
28. Sign the manifest in the space provided.
29. Retain the Carrier Memorandum copies of the manifest.
30. Place the remaining copies in the file bin on the wall inside the Driver's building.
31. Leave building and firmly close door to ensure building is secure.
32. Check loading rack for leaks.
33. Report leaks to Plant operator if necessary.
34. Remove wheel chocks.
35. Exit terminal through gate on East side of premises.

Cox City Liquid Loading Facility

CAUTION:

DO NOT attempt to enter loading area if a loading operation is in progress. Wait in the staging area located east of the loading skid until the loading skid is available.

DO NOT attempt to load propane during lightning storms or other dangerous weather conditions.

All spills, leaks, safety hazards, or problems identified at any time while completing this procedure should be reported to a plant operator at phone number posted inside driver's building.

WARNING:

Do not perform procedure unless wearing proper PPE as identified in this procedure and the specific MSDS. Failure to wear proper PPE may result in personal injury and / or death.

1. Observe windsock at terminal to identify emergency escape route.
2. Park truck on East side of load rack with tractor pointing north.
3. Shutoff vehicle engine and all electrical devices – including cell phones and pagers.
4. Set brakes and chock wheels.
5. Connect ground cable to unpainted surface on vehicle frame.
6. Verify green lamp on the detector panel is "ON".
7. Connect loading hose and vent line to trailer.
8. Open loading line shutoff valve located on trailer.
9. Open vent line shutoff valve located on trailer
10. Check for leaks.
11. Tighten connection or remove and reconnect if necessary.
12. OPEN loading line shutoff valve located at load rack.
13. OPEN vent line shutoff valve located at load rack.
14. ENTER the following information in the AccuLoad II located at the load rack:
 1. Drivers ID number;
 2. Trailer ID number;
 3. Customer ID number;
 4. Destination ID number (9001 for in-state, 9002 for out of state);
 5. Select product (default is stench propane);
 6. Preset quantity.

NOTE:

Pressing the START button will begin the loading operation. The propane loading pumps will start automatically and deliver the preset quantity of product into the trailer. The loading pumps will stop automatically when the measured quantity equals the pre-set quantity. Odorant will be automatically injected in an amount proportionate to the preset quantity.

15. PRESS Start button on the Accuload II.
16. MONITOR the loading operation until delivery is completed.
17. Close loading line shutoff valve located at load rack.
18. Close vent line shutoff valve located at load rack.
19. Close loading line shutoff valve located at trailer.
20. Close vent line shutoff valve located at trailer.
21. Disconnect loading line and vent line and return to hose cradle.
22. Disconnect ground from vehicle and return to cable spool.

NOTE:

The loading pump will automatically stop the flow of propane and end the loading process after the preset quantity of propane has been dispensed into the vehicle.

23. Pull the manifest at a 90° angle against the cutting edge to remove from printer.
24. Verify the accuracy of the information printed on the manifest.
25. If any information is printed incorrectly on the manifest, notify a plant operator and **DO NOT** move the truck from the Terminal.

NOTE:

The load manifest will print automatically inside the driver's building once the ground cable is disconnected. The load manifest will automatically advance to the tear-off bar position.

26. SIGN the manifest in the space provided.
27. RETAIN the Carrier Memorandum copies of manifest.
28. PLACE the remaining copies in the file bin on desk;
29. Leave building and firmly close door to ensure building is secure.
30. Check loading rack for leaks.
31. Report leaks to Plant operator if necessary.
32. Remove wheel chocks.
33. Exit terminal through gate on North side of terminal.

Wetumka Loading Facility

CAUTION:

DO NOT attempt to load propane during lightning storms or other dangerous weather conditions.

All spills, leaks, safety hazards, or mechanical malfunctions identified while completing the loading operations shall be reported to a plant operator at phone number posted inside driver's building.

1. Observe windsock at Terminal to identify emergency escape route.
2. Park truck parallel to East side of load rack.
3. Shutoff vehicle engine and all electrical devices – including cell phone and pagers.
4. Set brakes and chock wheels.
5. Enter PIN number on keypad located next to driver's building to gain access to load rack.
6. Connect ground cable to unpainted surface on trailer frame.
7. Verify green lamp on grounding system panel is "ON".
8. Connect loading hose and vent line to trailer.
9. Open loading line shutoff valve located at trailer.
10. Open vent line shutoff valve located at trailer.
11. Check for leaks.
12. Tighten connection or remove and reconnect if necessary.
13. Open loading line shutoff valve located at load rack.
14. Open vent line shutoff valve located at load rack.
15. Enter driver's building.
16. Enter the following information in the DANLOAD 6000 located in the Driver's building:
 1. Driver's ID number;
 2. Trailer ID number;
 3. Destination ID number;
 4. Customer ID number;
 5. Selected product (Stench Propane);
 6. Preset quantity.

NOTE:

Pressing the START button will begin the loading operation. The propane loading pumps will start automatically and deliver the preset quantity of product into the trailer. The loading pumps will stop automatically when the measured quantity equals the pre-set quantity. Odorant will be automatically injected in an amount proportionate to the preset quantity.

17. Press the Start button on the DANLOAD 6000.
18. Monitor loading operation until delivery is completed.

19. Close loading line shutoff valve located at load rack.
20. Close vent line shutoff valve located at trailer.
21. Disconnect loading line and vent line and return to hose cradle.
22. Disconnect ground from vehicle and return to cable spool.

NOTE:

The load manifest will print automatically inside the Driver's building once the ground cable is disconnected. The load manifest will automatically advance to the tear-off position.

23. Pull the manifest at a 90° angle against the cutting edge to remove from printer.
24. Verify the accuracy of the information printed on the manifest.
25. If any information is printed incorrectly on the manifest, notify a plant operator and **DO NOT** move the truck from the Terminal.
26. Sign the manifest in the space provided.
27. Retain the Carrier Memorandum copies of the manifest.
28. Place the remaining copies in the file bin on desk.
29. Leave building and firmly close door to ensure building is secure.
30. Check loading rack for leaks.
31. Report leaks to Plant operator if necessary.
32. Remove wheel chocks.
33. Exit terminal.

5 PPE/Clothing/ Personal Effects

Site Specific Emergency Procedures are posted inside the Driver's building. All Driver's are required to locate these procedures prior to loading. General steps are as follows:

1. In the event of an emergency at the Terminal:
 - 1.1. Press the Terminal Emergency Shutdown button located near the Driver's Building keypad and/or at load rack, if so equipped, **only if doing so does not place you in danger.**
 - 1.2. Exit on foot through the nearest gate that is upwind or crosswind from the emergency site. **DO NOT** use your truck to evacuate.
 - 1.3. Notify the Enogex Gas Control at 1-800-522-8048 or the plant operator at the terminal you are loading out of.

The use of leather work gloves and OSHA approved hard hat is required at all times inside the terminal.

All clothing should provide appropriate body protection for the work being performed. The following minimum requirements apply to clothing:

1. 100% cotton or cotton blend full-length shirt with at least 6 inch sleeves.
2. 100% cotton or cotton blend full-length pant.

Excessively baggy clothing is prohibited. Jewelry, such as rings, bracelets, necklaces, and earrings should not be worn if their presence could endanger your safety. Enogex reserves the right to request the removal of any jewelry determined to be unsafe.

Excessively long hair must be restrained and confined within the Driver's hardhat. Facial hair must not interfere with the face seal of respiratory protection equipment, should this equipment be necessary.

The use of cell phones and/or pagers are not permitted inside the terminal. Such devices must be turned off and kept inside the tractor while loading operations are in progress.

Propane is a flammable gas and when handled improperly, can cause explosion and fire. The following information about the properties of propane and odorant used to give propane its distinctive “gassy” odor should be read and fully understood before loading propane at any Enogex Terminal.

Characteristics of Propane

- An odorless, colorless gas in its natural state at normal atmospheric conditions of temperature and pressure.
- Normally transported and stored as a liquid in specially designed containers. It is important that only those containers approved and prepared for use with propane be used to store and transport propane. The liquid propane is normally vaporized or changed from a liquid to a gas at the user’s storage tank for use as a fuel.
- Pressurized within a storage tank. As the temperature increases within a tank, there is a corresponding rise in the tank pressure. Propane containers should be protected from excessive pressure by a container relief valve.
- Readily expands with temperature. When liquid propane changes to a gas, it increases approximately 270 times in volume.
- Heavier than air (approximately 1 ½ times) in a vapor state; yet it readily mixes with air.
- Propane liquid is about ½ as heavy as an equal volume of water.
- An efficient source of energy, burns readily and gives off a relatively large amount of heat, approximately 2,500 BTUs per cubic foot of gas.
- Ignites easily when mixed with oxygen. Ignition sources include, but are not limited to, open flames, smoking materials, electrical switches, pilot lights, sparks caused by friction, static electricity, etc.

Propane Odorization

- A chemical malodorant with a distinctive smell is added to propane (referred to as “stented propane”) to provide a method of detection in the event of a leak. **Ethyl mercaptan** is normally used for this purpose since it is chemically stable when mixed with propane and shares many of propane’s physical characteristics. Therefore, one can be reasonably sure that if ethyl mercaptan’s distinctive odor is detected, propane vapors may also be present.
- Odorants have limitations. Under certain circumstances, not everyone can smell ethyl mercaptan. Some people simply cannot smell certain odors. Certain physical conditions such as common colds and allergies, smoking, eating, etc., may lessen a person’s ability to smell. Additionally, high concentrations of many odorous substances may shock, or essentially paralyze, a person’s sense of smell.
- Since vaporized propane is heavier than air and carries with it the odorant, the propane can stratify in environments where there is little or no air movement; thus giving a different amount of odor intensity at different elevations.
- Odorants can, to some extent, be adsorbed by new tanks, new piping and new or old building materials, such as masonry. It can also be adsorbed by soil in the event of an underground leak. All of which diminishes its distinctive smell.

- Ethyl mercaptan can oxidize if it comes in contact with other oxidizing compounds such as water and/or rust, particularly rust in the LP storage tank. The oxidation, or chemical breakdown to pungent chemicals, may result in partial fading of the odorant. This is believed to occur in tanks containing air, moisture, or rust, any of which can cause the ethyl mercaptan to oxidize. It is important that all propane containers be purged of air and/or moisture before use, and not contain rust.
- Where odorized propane has been properly handled, transported and stored, chemical odorants added to propane can be an effective warning device. However, if the odorant has oxidized, adsorbed or absorbed or if it has been covered up or masked by competing odors or a person's inability to smell it, explosive mixtures may be present but go undetected.

7 Material Safety Data Sheets

Revised 05/01/01

Section I. Company and Product Identification

MANUFACTURERS/SUPPLIERS Emergency Telephone Number
ENOGEX, INC 1-800-522-8048
515 Central Park Drive General MSDS Information
Oklahoma City, Oklahoma 73124-0300 1-800-424-9300

Product Name: **PROPANE**
CAS Number: 74-98-6
Synonyms/Common Names: HD-5, LPG, Dimethyl Methane
DOT Hazard Class: Class 2.1 Flammable Gas
DOT ID Number: UN 1075
Chemical Family: Paraffinic Hydrocarbons
Chemical Formula: C₃H₈

National Fire Protection Association Hazard Rating:

Health	Fire	Reactivity	Special Hazard
1	4	0	N/A

Hazard Rank Guide:

Least -0 Slight -1 Moderate -2
High -3 Extreme -4

Section II. Hazardous Components

<u>Ingredients</u>	<u>CAS Number</u>	<u>Percent by Wt.</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>
Propane	74-98-6	>90	1000 ppm	SA
Propylene	115-07-1	<5	NE	SA
Butanes	106-97-8*	<2.5	800 ppm*	800 ppm*
Ethyl Mercaptan	75-08-1**	<0.2	10 ppm ceiling	0.5 ppm 8 Hr. TWA

* Normal Butane

** See Section III "Physical Properties, Odor"

SA – Simple Asphyxiant

NE – Not Established

Propane MSDS, continued

Section III. Physical Properties

Appearance:	Colorless Gas & Liquid
Odor:	Commercial Natural Gas (mercaptan may be added as odorant ¹⁾)
Boiling Point:	-44°F (-42°C)
Vapor Density:	1.5 (Air = 1)
Vapor Pressure:	180 – 208 psi at 100°F
Specific Gravity:	.50 (Water = 1)
Evaporation Rate:	Very Rapid
Volatility:	Complete Water
Solubility:	Slight

While ethyl mercaptan is generally effective in a majority of situations, its intensity (odor) may fade due to chemical oxidation absorption in the presence of rust, air or moisture. Additionally, some people have nasal perception problems that may mask or hide the ethyl mercaptan odor.

Section IV. Fire and Explosion Data

Flash Point:	Stable
Lower Explosive Limit (LEL):	2%
Upper Explosive Limit (UEL):	9.5%
Auto Ignite Temp:	840°F (450°C)
Extinguishing Media:	Dry Chemical, Foam, Carbon Dioxide
Special Fire Fighting Procedures:	Shut off product source and allow fire to burn itself out. Use water fog or spray to cool exposed containers and equipment to prevent overheating, flashbacks or explosions. Firefighters must use proper protective equipment including breathing apparatus to protect against hazardous combustion products and/or oxygen deficiencies.
Fire and Explosion Hazards:	DANGER EXTREMELY FLAMMABLE! Highly flammable vapors which are heavier than air may accumulate in low areas. These vapors may travel long distances to a point of ignition and then flash back. Liquid propane will vaporize rapidly at well below ambient temperatures and readily forms flammable mixtures with air. Flames impinging on product storage vessels above the liquid level will cause sudden vessel failure, resulting in a BLEVE (Boiling Liquid Expanding Vapor Explosion), unless the vessel surfaces are kept cooled with water. If this cannot be done, evacuate the area. Toxic carbon dioxides and/or sulfur oxides may be released when burned.

Section V. Reactivity Data

Stability:	Stable
Conditions To Avoid:	Open flame, high heat, sparks
Incompatible Materials:	Oxygen and strong oxidizing agents
Hazardous Decomposition Products:	Hydrocarbon vapors; Toxic combustion products may result from burning or excessive heating, e.g., carbon monoxide, carbon dioxide, sulfur dioxide)
Hazardous Polymerization:	Will not occur

Section VI. Health Hazard Data

Primary Routes of Entry:	Inhalation
Eye Contact:	Gas is non-irritating but direct contact with liquid or frost particles can cause severe or permanent eye damage.
Skin Irritation:	Non-irritating but liquid forms of material and pressurized gas can cause freeze burns.
Inhalation:	At high concentrations a simple asphyxiant. Extreme overexposure may produce dizziness, headache, rapid breathing, fatigue, unconsciousness, and death. Combustion by products may be toxic and/or asphyxiant.

Propane MSDS, continued

Section VII. Protective Equipment

- Ventilation: To prevent accumulations of explosive mixtures, the use of local exhaust and general room ventilation may be essential. If mechanical ventilation is not used, electrical equipment must meet National Electric Code requirements.
- Respiratory: Not generally required. For entry into unknown or excessive gas concentrations use only NIOSH/MSHA approved self contained breathing apparatus.
- Eye: Use goggles and face shield when handling liquefied gasses. Safety glasses and/or face shield are recommended when handling high pressure cylinders, piping and wherever vapors may be discharged.
- Skin: Prevent potential skin contact with liquid/vapors. Use properly insulated gloves and other protective gear (apron, face shield, etc.) to protect hands and other skin areas.

Section VIII. Emergency First Aid

- Inhalation: Move victim to area of fresh air. For respiratory distress give air, oxygen or administer cardiopulmonary resuscitation if needed. Seek medical attention.
- Eye Contact: Flush eyes gently with water for at least 15 minutes.
- Skin Contact: Frozen tissues should be gradually warmed using warm water. Do not use hot water! Cryogenic burns may occur as evidenced by blistering. Protect affected area with dry gauze and get prompt medical attention.
- Ingestion: Seek immediate medical attention.

Section IX. Storage, handling and Transporting

- Storage: Keep containers tightly closed. Keep away from heat, open flames, or other sources of ignition. No smoking or open lighting. Outside or detached storage is preferred. Keep away from oxidizers, e.g. chlorine, oxygen, bleaches, fertilizers.
- Handling: Avoid breathing vapor. Use self contained breathing apparatus (SCBA) if appropriate. Use explosion-proof equipment and non sparking tools in areas where explosive vapors may form. Electrically ground and bond shipping container, transfer line and receiving container. Material may be at elevated temperatures and/or pressures. Exercise care when opening tank and/or hatches, sampling ports and/or bleeder valves.
- Transporting: DOT Proper Shipping Name: Propane
Hazard Class: 2.1
Identification Number: UN 1978
DOT Label(s): Flammable Gas
DOT Placard: Flammable Gas

Propane MSDS, continued

Section X. Spill and Disposal

Eliminate all possible sources of ignition and stop source of release with non-sparking tools. All nonessential personnel should be evacuated. Ventilate enclosed areas to prevent formation of flammable or oxygen-deficient atmospheres. Liquid spills will vaporize rapidly and produce vapor cloud. Because vapors are heavier than air they will not readily disperse. Avoid vapor cloud even with proper respiratory equipment.

Releases are expected to cause only localized non-persistent environmental damage. Waste mixtures containing these gasses should not be allowed to enter drains or sewers where there is a danger of ignition and/or explosion. This material should be disposed of as an auxiliary fuel or burned in a properly designed flare or incinerator (in conformity with all applicable disposal regulations). Venting gas to atmosphere should be avoided.

Under the Resource Conservation and Recovery Act (RCRA), it is the responsibility of the user of the product to determine, at the time of disposal, whether the material is a hazardous waste subject to RCRA. Consult local, state and federal regulations to ascertain the applicability of hazardous waste storage, transportation and disposal requirements.

The transportation, storage, treatment and disposal of RCRA waste material must be conducted in compliance with 40 CFR 262, 263, 264, 268, and 270. Disposal can occur only in permitted facilities. Check state regulations. Chemical additions, processing or otherwise altering this material may make waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate. Disposal of this material must be in compliance with all federal, state and local regulations.



Natural Gas Odorizing



Responsible Care®
Good Chemistry at Work

MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Natural Gas Odorizing

3601 Decker Drive

P.O. Box 1429

Baytown, Texas 77522-1429

24 HOUR EMERGENCY TELEPHONE:

**1-800-733-3665 or 1-972-404-3228
(U.S.);**

32.3.575.55.55 (Europe);

1800-033-111 (Australia)

TO REQUEST AN MSDS:

1-866-295-5278 or 1-615-399-5148

CUSTOMER SERVICE:

1-281-424-5568

MSDS NUMBER: M36045

SUBSTANCE: BP CAPTAN

SYNONYMS:

Mercaptan

PRODUCT USE: gas odorant

REVISION DATE: Nov 17 2004

2. COMPOSITION, INFORMATION ON INGREDIENTS

COMPONENT: TERT-BUTYL MERCAPTAN

CAS NUMBER: 75-66-1

PERCENTAGE: 75-80

COMPONENT: ISOPROPYL MERCAPTAN

CAS NUMBER: 75-33-2

PERCENTAGE: 14-22

COMPONENT: PROPYL MERCAPTAN
CAS NUMBER: 107-03-9
PERCENTAGE: 2-7

COMPONENT: SEC-BUTYL MERCAPTAN
CAS NUMBER: 513-53-1
PERCENTAGE: 0-4

3. HAZARDS IDENTIFICATION

NFPA RATINGS (SCALE 0-4): HEALTH=2 FIRE=3 REACTIVITY=0

HMS RATINGS (SCALE 0-4): HEALTH=2 FLAMMABILITY=3 REACTIVITY=0

EMERGENCY OVERVIEW:

COLOR: colorless

PHYSICAL FORM: liquid

ODOR: gassy odor

MAJOR HEALTH HAZARDS: MAY BE IRRITATING TO RESPIRATORY TRACT, SKIN AND EYES. MAY CAUSE CENTRAL NERVOUS SYSTEM EFFECTS.

PHYSICAL HAZARDS: Extremely flammable liquid and vapor.

POTENTIAL HEALTH EFFECTS:

INHALATION:

SHORT TERM EXPOSURE: irritation, central nervous system effects

LONG TERM EXPOSURE: irritation

SKIN CONTACT:

SHORT TERM EXPOSURE: irritation

LONG TERM EXPOSURE: dermatitis

EYE CONTACT:

SHORT TERM EXPOSURE: irritation, tearing

LONG TERM EXPOSURE: irritation

INGESTION:

SHORT TERM EXPOSURE: nausea, vomiting, central nervous system effects

LONG TERM EXPOSURE: to our knowledge, no effects are known

CARCINOGEN STATUS:

OSHA: No

NTP: No

IARC: No

4. FIRST AID MEASURES

INHALATION: If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. If respiration or pulse has stopped, have a trained person administer Basic Life Support (Cardio-Pulmonary

Resuscitation/Automatic External Defibrillator) and CALL FOR EMERGENCY SERVICES IMMEDIATELY.

SKIN CONTACT: Wash contaminated areas with soap and water. Thoroughly clean and dry contaminated clothing and shoes before reuse. IF IRRITATION OCCURS, GET MEDICAL ATTENTION.

EYE CONTACT: Immediately flush eyes with a directed stream of water for at least 15 minutes, forcibly holding eyelids apart to ensure complete irrigation of all eye and lid tissues. Washing eyes within several seconds is essential to achieve maximum effectiveness. GET MEDICAL ATTENTION IMMEDIATELY.

INGESTION: Never give anything by mouth to an unconscious or convulsive person. If swallowed, do not induce vomiting. If vomiting occurs spontaneously, keep airway clear. Give water when vomiting stops. GET MEDICAL ATTENTION.

5. FIRE FIGHTING MEASURES

FIRE AND EXPLOSION HAZARDS: Severe fire hazard. Vapor/air mixtures are explosive. The vapor is heavier than air. Vapors or gases may ignite at distant ignition sources and flash back.

EXTINGUISHING MEDIA: Use carbon dioxide, regular dry chemical, foam or water.

FIRE FIGHTING: Water may be ineffective as an extinguishing media. Wear NIOSH approved positive-pressure self-contained breathing apparatus. Eliminate all sources of ignition. Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Flood with fine water spray. Do not scatter spilled material with high-pressure water streams. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas.

SENSITIVITY TO MECHANICAL IMPACT: Not sensitive

SENSITIVITY TO STATIC DISCHARGE: Electrostatic charges may build up during handling. Grounding of equipment is recommended.

FLASH POINT: -16.1 F (-26.7 C) (OC)

LOWER FLAMMABLE LIMIT: 1.7% estimated

UPPER FLAMMABLE LIMIT: 10% estimated

HAZARDOUS COMBUSTION PRODUCTS:

Thermal decomposition products or combustion: oxides of sulfur (combustion product), hydrogen sulfide (decomposition product)

6. ACCIDENTAL RELEASE MEASURES

OCCUPATIONAL RELEASE:

Remove sources of ignition. Ventilate closed spaces before entering. Stop leak if possible without personal risk. Collect with absorbent into suitable container. Keep container tightly closed. Liquid material may be

removed with a vacuum truck. Keep out of water supplies and sewers. Releases should be reported, if required, to appropriate agencies.

7. HANDLING AND STORAGE

STORAGE: Store and handle in accordance with all current regulations and standards. Store in a cool, dry place. Store in a well-ventilated area. Avoid heat, flames, sparks and other sources of ignition. Subject to storage and handling regulations: U.S. OSHA 29 CFR 1910.106. Keep separated from incompatible substances.

HANDLING: Avoid breathing vapor or mist. Avoid contact with eyes, skin and clothing. Keep away from heat, sparks and flame. Keep container tightly closed. Use only with adequate ventilation. Do not reuse containers.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE LIMITS:

BP CAPTAN:

Calculated Internal Occupational Exposure Limit of the overall mixture for use with a direct reading instrument (i.e., PID) that is equally responsive to all components: 45 ppm. Maintaining full-shift (8-hour TWA) concentration of (iso-propyl mercaptan) below (12 ppm) will ensure employees are protected from the additive effects of the ingredients.

VENTILATION: Use explosion-proof equipment. Use engineering controls if feasible. Provide local exhaust ventilation where vapor may be generated. Ensure compliance with applicable exposure limits.

EYE PROTECTION: Wear chemical resistant safety goggles if eye contact is likely. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

CLOTHING: Wear protective clothing to minimize skin contact.

GLOVES: Wear appropriate chemical resistant gloves. May be based on plant experience, not ASTM permeation testing.

PROTECTIVE MATERIAL TYPES: 4H(R), CPF(R) 3, nitrile

RESPIRATOR: A NIOSH approved respirator with organic vapor cartridges may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits, or when symptoms have been observed that are indicative of overexposure.

SHORT ORGANIC VAPOR CARTRIDGE SERVICE LIFE is anticipated.

A full facepiece air-purifying respirator may be used in concentrations up to 50X the acceptable exposure level.

Supplied air should be used when the level is expected to be above 50X the acceptable level, or when there is a potential for uncontrolled release.

A respiratory protection program that meets 29 CFR 1910.134 must be followed whenever workplace conditions warrant use of a respirator.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: liquid

APPEARANCE: clear

COLOR: colorless

ODOR: gassy odor

BOILING POINT: 139-151 F (59.4-66.1 C)

FREEZING POINT: <-50.1 F (<-45.6 C)

VAPOR PRESSURE: 6.4 psia @ 38 C

VAPOR DENSITY (air=1): 3.0

SPECIFIC GRAVITY (water=1): 0.807

DENSITY: 6.73 lbs/gal @ 15.6 C

WATER SOLUBILITY: negligible

PH: Not available

VOLATILITY: 100%

ODOR THRESHOLD: 0.008 ppb (TERT-BUTYL MERCAPTAN)

EVAPORATION RATE: Not available

COEFFICIENT OF WATER/OIL DISTRIBUTION: Not available

10. STABILITY AND REACTIVITY

REACTIVITY: Stable at normal temperatures and pressure.

CONDITIONS TO AVOID: Avoid heat, flames, sparks and other sources of ignition. Containers may rupture or explode if exposed to heat. Keep out of water supplies and sewers.

INCOMPATIBILITIES: oxidizing materials

HAZARDOUS DECOMPOSITION:

Thermal decomposition products or combustion: oxides of sulfur (combustion product), hydrogen sulfide (decomposition product)

POLYMERIZATION: Will not polymerize.

11. TOXICOLOGICAL INFORMATION

BP CAPTAN:

TOXICITY DATA: This material is considered to be a moderate to strong irritant to the respiratory tract, skin and eyes (with burning sensation). High exposure levels may lead to central nervous system effects, including CNS depression, headache, nausea, weak pain, a sense of coldness in the extremities, unconsciousness and death. Overexposure may cause pulmonary edema. Repeated contact with this material to the skin may result in dermatitis. Inhalation may cause loss of smell. Ingestion of this material may cause nausea, vomiting, irritation to mouth, esophagus and stomach, potential CNS depression and unconsciousness.

12. ECOLOGICAL INFORMATION

ECOTOXICITY DATA:

FISH TOXICITY: No data available. However, if released in water, it rapidly dissipates through evaporation.

FATE AND TRANSPORT:

BIODEGRADATION: This material may biodegrade in soil and water.

PERSISTENCE: Based on volatilization and degradation rates, this material is believed not to persist in the environment.

BIOCONCENTRATION: This material is believed not to bioaccumulate.

OTHER ECOLOGICAL INFORMATION: This material is expected to rapidly oxidize in the atmosphere.

13. DISPOSAL CONSIDERATIONS

Reuse or reprocess if possible. Dispose in accordance with all applicable regulations. Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): D001.

14. TRANSPORT INFORMATION

U.S. DOT 49 CFR 172.101:

PROPER SHIPPING NAME: Mercaptan mixture, liquid, flammable, n.o.s. (TERT-BUTYL MERCAPTAN, PROPYL MERCAPTAN)

ID NUMBER: UN3336

HAZARD CLASS OR DIVISION: 3

PACKING GROUP: II

LABELING REQUIREMENTS: 3

ADDITIONAL SHIPPING DESCRIPTION: Transport by vessel domestic requires flashpoint on shipping papers.

CANADIAN TRANSPORTATION OF DANGEROUS GOODS:

SHIPPING NAME: Mercaptan mixture, liquid, flammable, n.o.s. (TERT-BUTYL MERCAPTAN, PROPYL MERCAPTAN)

UN NUMBER: UN3336

CLASS: 3

PACKING GROUP/RISK GROUP: II

15. REGULATORY INFORMATION

U.S. REGULATIONS:

CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4): Not regulated.

SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.30): Not regulated.

SARA TITLE III SARA SECTIONS 311/312 HAZARDOUS CATEGORIES (40 CFR 370.21):

ACUTE: Yes

CHRONIC: No

FIRE: Yes

REACTIVE: No

SUDDEN RELEASE: No

SARA TITLE III SECTION 313 (40 CFR 372.65): Not regulated.

OSHA PROCESS SAFETY (29CFR1910.119): Not regulated.

STATE REGULATIONS:

California Proposition 65: Not regulated.

NEW JERSEY WORKER AND COMMUNITY RIGHT TO KNOW:

REPORTING REQUIREMENT:

TERT-BUTYL MERCAPTAN 75-66-1 75-80%

ISOPROPYL MERCAPTAN 75-33-2 14-22%

PROPYL MERCAPTAN 107-03-9 2-7%

SEC-BUTYL MERCAPTAN 513-53-1 0-4%

RIGHT TO KNOW HAZARDOUS SUBSTANCE LIST:

ISOPROPYL MERCAPTAN 75-33-2 14-22%

PROPYL MERCAPTAN 107-03-9 2-7%

SPECIAL HEALTH HAZARD SUBSTANCE LIST:

Not regulated.

PENNSYLVANIA RIGHT TO KNOW:

REPORTING REQUIREMENT:

TERT-BUTYL MERCAPTAN 75-66-1 75-80%

ISOPROPYL MERCAPTAN 75-33-2 14-22%

PROPYL MERCAPTAN 107-03-9 2-7%

SEC-BUTYL MERCAPTAN 513-53-1 0-4%

HAZARDOUS SUBSTANCE LIST:

TERT-BUTYL MERCAPTAN 75-66-1 75-80%

SEC-BUTYL MERCAPTAN 513-53-1 0-4%

ENVIRONMENTAL HAZARDOUS SUBSTANCE LIST:

Not regulated.

SPECIAL HAZARDOUS SUBSTANCE LIST:

Not regulated.

CANADIAN REGULATIONS:

CONTROLLED PRODUCTS REGULATIONS (CPR): This product has been classified in accordance with the criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

WHMIS CLASSIFICATION: B2, D2B.

NATIONAL INVENTORY STATUS:

U.S. INVENTORY (TSCA): All the components of this substance are listed on or are exempt from the inventory.

TSCA 12(b) EXPORT NOTIFICATION: Not listed.

CANADA INVENTORY (DSL/NDSL): All components of this product are listed on the DSL.

16. OTHER INFORMATION

MSDS SUMMARY OF CHANGES

15. REGULATORY INFORMATION

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Driver Training Safety Certification

Section Number	Section Name	Training Date		
		Calumet	Cox City	Wetumka
1	Safety Precautions			
2	Carrier Responsibilities			
3	Loading			
4	Emergency Procedures			
5	Clothing/Personal Effects			
6	Odorant			
Recertification Dates				

Initial

1. _____	I acknowledge that failure to comply with the safety guidelines herein may result in suspension or cancellation of my loading privileges.
2. _____	Upon receipt of my Personal Identification Number (PIN), I agree that I will be the sole user of this PIN, authorized to act on behalf of the Shipper noted on the manifest.

I hereby attest that I have read the entire contents of the Enogex Driver Instruction Manual for Propane Truck Loading Terminals and fully understand the instructions contained in this booklet. Specifically, I have read and understand the safety instructions regarding the topics above.

Driver's Signature: _____ PIN# _____

Retention: 3 years from date of last training.

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