



## MATERIAL SAFETY DATA SHEET

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### 1. Product and Company Identification

<b>Material name</b>	<b>Natural Gas - Odorized</b>
<b>Revision date</b>	March 17, 2010
<b>MSDS number</b>	SWG MSDS 1
<b>Product use</b>	Fuel gas.
<b>Manufacturer/Supplier</b>	Southwest Gas Corporation P.O. Box 98510, Las Vegas, NV 89150-0002 Telephone: (702) 876-7011 Contact Person: Corporate Safety Department
<b>Emergency</b>	<b>Central Arizona: (800) 528-4277</b> (Areas in and around Phoenix and Wickenburg) <b>Southern Arizona: (800) 722-4277</b> (Areas in and around Tucson, Green valley, Casa Grande, Coolidge, Sierra Vista, Douglas, Morenci, Globe, Oracle, and Yuma) <b>Southern Nevada: (800) 447-5422</b> (Areas in and around Las Vegas, Boulder City, and Laughlin NV; Bullhead City, Parker, and Ehrenberg AZ; and Needles CA) <b>Northern Nevada: (800) 772-4555</b> (Areas in and around Carson City, Lake Tahoe, Fallon, Elko, and Winnemucca) <b>Northern California: (800) 772-4555</b> (Areas in and around Truckee and Lake Tahoe) <b>Southern California: (800) 867-9091</b> (Areas in and around Barstow, Big Bear and Victorville)

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### 2. Hazards Identification

<b>Physical state</b>	Gas.
<b>Appearance</b>	Colorless gas.
<b>Odor</b>	Gassy, sulfurous, rotten egg type odor.
<b>Emergency overview</b>	DANGER Flammable gas - may cause flash fire. Gas reduces oxygen available for breathing.
<b>OSHA regulatory status</b>	This product is hazardous according to OSHA 29 CFR 1910.1200.
<b>Potential health effects</b>	
<b>Routes of exposure</b>	Inhalation.
<b>Eyes</b>	Pressurized gas, and contaminants within piping, may cause mechanical injury.
<b>Skin</b>	Pressurized gas, and contaminants within piping, may cause mechanical injury.
<b>Inhalation</b>	Sufficient concentrations can displace oxygen in the air and can cause symptoms of oxygen deprivation (asphyxiation), including unconsciousness.
<b>Ingestion</b>	Not applicable.
<b>Target organs</b>	Not applicable.
<b>Chronic effects</b>	Not applicable.
<b>Signs and symptoms</b>	Not applicable.
<b>Potential environmental effects</b>	Not expected to be harmful to aquatic organisms.

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### 3. Composition / Information on Ingredients

Components	CAS #	Percent
Natural Gas (Includes a blend of tertiary-Butyl Mercaptan and Tetrahydrothiophene of <0.1% mole)	8006-14-2	100

Primary constituents of natural gas	CAS #	Percent
Butane	106-97-8	Varies
Carbon dioxide	124-38-9	Varies
Ethane	74-84-0	Varies
Methane	74-82-8	Varies
Pentane	109-66-0	Varies
Propane	74-98-6	Varies

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### 4. First Aid Measures

#### First aid procedures

<b>Eye contact</b>	Not applicable. No effects expected.
<b>Skin contact</b>	Not applicable. No effects expected.
<b>Inhalation</b>	Remove victim to fresh air. If not breathing, clear airway and start mouth-to-mouth artificial respiration or use a bag-mask respirator. Get immediate medical attention. If the victim is having trouble breathing, transport to medical care and if available, give supplemental oxygen.
<b>Ingestion</b>	This material is a gas under normal atmospheric conditions and ingestion is unlikely.

#### Notes to physician

Provide general supportive measures and treat symptomatically.

#### General advice

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

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### 5. Fire Fighting Measures

<b>Flammable properties</b>	Flammable gas. Gas forms mixtures with air which can ignite and burn with explosive violence. Gas is lighter than air and explosive mixtures may occur if gas is released into enclosed or confined areas. Gas leaking from underground piping may travel through soil and into nearby structures and underground facilities, and may create explosion hazards within those structures. Gas entry into sewer, conduit, or abandoned underground pipe may create explosion hazards within those underground facilities and within structures attached to those underground facilities.
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#### Extinguishing media

<b>Suitable extinguishing media</b>	Extinguish with carbon dioxide, dry powder, or foam.
<b>Unsuitable extinguishing media</b>	Water may be ineffective on flames but useful for other purposes, including cooling.

#### Protection of firefighters

<b>Specific hazards arising from the chemical</b>	During fire, combustion gases may be formed that are hazardous to health.
<b>Protective equipment and precautions for firefighters</b>	Evacuate area and fight fire from a safe distance. Extinguish the fire by stopping the flow of gas. If leak is from Southwest Gas facilities, do not stop the flow of gas but call the appropriate Southwest Gas emergency number for gas control assistance. The gas could form an explosive mixture with air and re-ignite resulting in a sudden violent flash fire, which may cause far more damage than if the original fire had been allowed to burn.

## Specific methods

In the event of fire or explosion do not breathe fumes. Do not enter a gaseous or suspected gaseous environment without first checking the gas concentration with a properly calibrated combustible gas indicator. If gas is detected, do not enter without first eliminating potential ignition sources (see Section 6); without appropriate lockout-tagout safeguards; without appropriate personal protective equipment, such as flame resistant clothing that is treated to avoid static buildup; without an emergency retrieval-system (defined in Section 16), such as a harness with a retrieval line; without self-contained breathing air; and without a fire-watch (defined in Section 16) stationed outside the gaseous environment that is equipped with an appropriate fire suppressant.

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## 6. Accidental Release Measures

### General

Any suspected natural gas leak requires immediate emergency action.

#### Hazard recognition

Natural gas is likely to be present if a gassy or unusual odor, like rotten eggs is detected. A dangerous concentration of natural gas may be present if the odor is constant or momentary, or if the odor is strong or slight. **Extreme caution is called for since the potential for death or serious injury from a flash fire or explosion is very great if a leak, a suspected leak, or odor is ignored.**

As explained in Section 7, persons should not rely solely on their sense of smell to determine if a gas leak exists or if natural gas is present. Other indications that a natural gas leak may be present and that call for extreme caution include: damaged or worn hoses, fittings, or other connections to a gas appliance or piping; discolored or dead vegetation over or near pipelines; dirt or water being thrown in the air; hissing, whistling, or roaring sound near a gas pipe; bubbling water (including water in a toilet bowl); burning soil; a fire or explosion near a pipeline; an exposed pipe after an earthquake, flood, or other natural disaster; or physical symptoms from exposure that may include dizziness, light-headedness, headache, nausea, loss of coordination, or eye irritation.

#### Emergency action

Immediately stop all hot-work (defined in Section 16). Immediately evacuate all personnel from all suspected leak areas and areas that may be impacted by the ignition of natural gas. Activate the evacuation procedures of the facility's Emergency Action Plan, but do not activate any electric alarm or communication systems. Secure all such areas to prevent entry or reentry. From a safe location, call 911.

#### Prevention of ignition

All existing **ignition sources**, including but not limited to open **flames or embers** (such as water heaters, fire in boilers, pilot lights, blow torches, matches, candles, lighters, cigarettes, cigars or pipes), should be extinguished if it is possible to do so without entering the suspected leak area.

**Static electricity discharges** and **electrical arcing** can be potential ignition sources and should be avoided. If it can be done safely, turn off the gas supply to the affected equipment or piping system and disconnect any electrical supply at a circuit breaker or elsewhere outside the affected structure or area.

However, do not do so without first verifying the absence of gas in the switch with a properly calibrated combustible gas indicator. Sources of static electricity and electrical arcing include, but are not limited to, torch igniters, cutting or welding, friction of certain clothing; charges within natural gas and gas piping; the use of tools that are not spark-proof, the use of equipment that is not explosion-proof (or is not within explosion-proof enclosures), and the use of non-intrinsically safe electrical switches, illumination, thermostats, fans, motors (including motor operated doors), battery operated equipment, and electronic equipment.

**Hot surfaces** that are at or above the auto-ignition temperature can be potential ignition sources and should be cooled if it is possible to do so without entering the suspected leak area.

#### Precautions for entering a gaseous environment

Do not enter a gaseous or suspected gaseous environment without first checking the gas concentration with a properly calibrated combustible gas indicator. If gas is detected, do not enter without first eliminating potential

ignition sources; without appropriate lockout-tagout safeguards; without appropriate personal protective equipment, such as flame resistant clothing that is treated to avoid static buildup; without an emergency retrieval-system (defined in Section 16), such as a harness with a retrieval line; without self-contained breathing air; and without a fire-watch (defined in Section 16) stationed outside the gaseous environment that is equipped with an appropriate fire suppressant.

**Precautions if the release is from Southwest Gas operated pipelines or facilities**

If the release is from Southwest Gas operated pipelines or facilities:

- Move to a safe location and call 911 and the appropriate Southwest Gas emergency number;
- Communicate requested information to Southwest Gas emergency dispatch;
- Secure the area and keep others from entering;
- Eliminate sources of ignition;
- Wait for the Fire Department and Southwest Gas emergency crews to arrive;
- Do not attempt to control the flow of natural gas;
- Do not turn off equipment unless the equipment manufacturer's instructions provide otherwise;
- Do not attempt to move equipment;
- Do not enter the area where natural gas is escaping;
- Do not attempt to extinguish a fire should ignition occur;
- Do not allow others to enter the area; and
- Do not leave the scene of the incident until assistance has arrived.

**Additional reference information**

- (1) National Fire Protection Association's NFPA 70, *National Electrical Code*, Article 504, Intrinsically Safe Systems (2008), NFPA 77, *Recommended Practice on Static Electricity* (2007), and NFPA 329, *Recommended Practice for Handling Releases of Flammable and Combustible Liquids and Gases* (2010).
- (2) FM Approvals, *Approval Standard for Intrinsically Safe Apparatus and Associated Apparatus for Use in Class I, II, and III, Division 1, Hazardous (Classified) Locations* (January 2007).

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## 7. Handling and Storage

### General

Southwest Gas adheres to United States Department of Transportation (DOT) and all applicable state rules and regulations regarding the odorizing of natural gas. **Decades of experience has established that the addition of chemical odorants to natural gas has proven to be a safe, reliable and effective means to warn of the presence of leaks, accidental releases, and other dangerous concentrations of natural gas.** However, this odorization is only one phase of protection and so one should not rely on their sense of smell alone to determine if there is a gas leak; other practices for minimizing and locating gas leaks should be employed. Specifically, odorization provides added protection by allowing persons to detect the presence of natural gas, but is not a substitute for proper installation, use, protection, and upkeep of gas systems and appliances. All gas pipe should be designed, installed and inspected as required by the applicable fire code, plumbing code, mechanical code, fuel gas code and administrative code prior to operation. After installation, all gas pipe should be properly maintained and protected from damage because the primary cause of leakage from underground gas pipes is damage by third parties. Please see the back of the bill (or [www.swgas.com/ebpp/terms](http://www.swgas.com/ebpp/terms)) to obtain information about the need to inspect, maintain and repair customer-owned service lines that are not maintained by Southwest Gas. Appliance and equipment manufacturers' instruction manuals should be followed for their recommended installation, operation, maintenance, and inspection practices, even if those practices conflict with the practices contained in this material safety data sheet.

## Other Precautions

### Impaired sense of smell and environmental conditions that reduce odorant effectiveness

As noted above, persons should not rely solely on their sense of smell to determine if a gas leak exists or if natural gas is present. Some persons may not be able to detect the added odorant because they have a diminished or impaired sense of smell or olfactory fatigue. Specifically, some physical conditions, including common colds, allergies, sinus congestion, inattentiveness, eating, and use of tobacco, alcohol and drugs may temporarily lessen one's ability to detect the odorant. Acute exposure to high concentrations of odorant may shock, or even temporarily paralyze, one's sense of smell. Continued exposure to a low concentration of odorized gas may slow or dull a person's ability to detect odorized gas, including the ability to detect higher concentrations of odorized gas. Exposure to extreme cold may temporarily impair the ability to smell. Some people suffer from temporary or permanent anosmia. That is, they have no sense of smell. When a person's ability to smell natural gas odorant is in doubt, the person may undergo an evaluation by a physician or other licensed health care professional.

Certain environmental conditions including competing odors (such as cooking, damp or musky smells), may cover up or mask the smell of odorized gas. Extreme cold weather may also reduce the effectiveness of the odorant.

**Special precautions, including but not limited to the use of gas detection equipment, should be taken by persons using odorized gas or persons who may be exposed to planned or accidental releases of odorized gas, where those persons have a diminished or impaired sense of smell or work in environments that may mask or reduce the effectiveness of the odorant.**

### Odor fade

Certain conditions cause **odor fade**, a phenomenon that causes the odorant to diminish so that it is not as detectable and, in some cases, is not detectable at all. Persons should not rely on their sense of smell alone to detect the presence of natural gas without first considering the presence or absence of conditions that may cause odor fade and without advance consideration of the potential for the creation or presence of a flammable concentration of odor-faded gas. **Odor fade (loss of odorant)** occurs when the level of odorant in the gas is reduced due to physical and/or chemical processes including adsorption, absorption and oxidation. This causes the effectiveness of odorant as a warning agent to be reduced. In piping systems conveying dry natural gas, like that delivered by Southwest Gas, odor fade occurs predominantly in installations of new pipe rather than in pipe that has been in continuous use. It is generally more pronounced in new steel pipe of larger diameters and longer lengths with intermittent, little or no gas flow through the piping system over an extended period of time. Other factors that may cause odor fade in a gas piping system include: the construction and configuration of the gas piping system; the presence of rust, moisture, liquids or other substances in the pipe; and gas composition, pressure and/or flow.

In industrial, commercial, and public applications and in large residential applications such as housing tracts and residential towers, new pipeline installations may require periodic purging, the conditioning of the pipe, or fuel gas system modifications (including pressure reduction) during start-up operations to prevent occurrences of odor fade. If Southwest Gas conditioned the customer's pipe before it was placed into service, contact Southwest Gas for instruction on work controls and personal protective equipment recommendations before cutting the pipe with an oxyacetylene torch or welding pipe that is near to, and downstream of, the odorant injection point(s).

If a natural gas leak occurs underground, the surrounding soil may cause odor fade. Inspections for underground gas leaks should include looking for discolored or dead vegetation over or near pipe areas.

Immediately call the appropriate Southwest Gas emergency number (Section 1) if odor-faded gas is detected or suspected and follow the instructions given by the emergency dispatch.

## Purging gas piping

**Gas piping should only be purged by a licensed professional** that is fully trained and knowledgeable about safe gas purging practices, the proper use of gas detectors, and the danger of relying on the sense of smell alone to detect the presence of gas during purging operations. An improperly performed purge may cause serious bodily injury or death to the person(s) performing the purge and to all other persons in the affected area.

Do not purge the contents of a gas pipe into a confined space. (See 29 CFR 1910.146).

Consider stopping hot-work (defined in Section 16) in the area receiving the product of the purge.

Do not leave the point(s) of discharge unattended while purging. Whenever practical, purged gases should be directly vented to a safe location outdoors and away from people, structures, and ignition sources. (Examples of ignition sources are in Section 6). This can be done using a temporary hose or piping or permanently installed vent pipes, depending on the facility design. All hose or piping used for this purpose should be grounded to reduce the possibility of static electricity build-up within the gas or a static charge on the hose or pipe. Whenever possible, each purge should be continued without interruption until the purge gases have been fully discharged. Consider monitoring the discharge point with gas detection equipment and stopping the purge once all the purge gases have been discharged. To provide the most accurate information about combustible gas levels where the gas is purged, sampling should be conducted frequently or continuously at appropriate locations. When purging indoors, consider opening doors and windows to maximize ventilation. When purging to the outdoors, the valve should be opened quickly and fully to create a rapid flow that minimizes the stratification of gases within the piping.

Immediately call the appropriate Southwest Gas emergency number (Section 1) if odor-faded gas is detected or suspected and follow the instructions given by the emergency dispatch.

Special additional precautions should be taken when purging piping systems that contain extensive branch piping, that cannot maintain appropriate purge velocities, or that are exceptionally large. For example, Southwest Gas employs special precautions when purging its pipelines that cannot maintain a purge velocity greater than 200 feet per minute or are 6 inches or larger with a volume of 200 cubic feet or more. Special precautions include but are not limited to preparing and following a purge plan that minimizes gas mixing due to turbulence, minimizes the stratification of gases within the piping, and addresses the diffusion due to the contact duration of the gases.

Special additional precautions should be taken when purging indoors at industrial, commercial, public, and large residential applications such as residential towers. Additional precautions may include but are not limited to:

- Preparing and following a written purge plan;
- Evacuating nonessential personnel;
- Providing supplemental ventilation with appropriate equipment that discharges the air away from the enclosed space, such as a grounded air-ejector (defined in Section 16);
- Wearing flame-resistant clothing that is appropriately treated to avoid static buildup;
- Eliminating open flames and other ignition sources;
- Employing appropriate lockout-tagout safeguards to control access to piping and valves and to control access to ignition sources including electrical switches, circuit breakers, appliances, equipment, and motors;
- Purging at a controlled rate that takes into account the volume of gas or air displaced from the gas piping, the amount of ventilation present, and the volume of the enclosed premises or structure receiving the product of the purge; and

- Using gas detection equipment at appropriate locations within the enclosed space where the purged gases are released and stopping the purge upon the detection of a concentration of no more than 25% of the lower flammable limit.

#### Sewer work precautions

Some Southwest Gas pipes that were installed by a boring method have been found to have physically intersected and breached sewer laterals and mains. Some of these conflicts resulted in blockage of the sewer pipe. Should persons encounter indications of blockage in a sewer pipe, call 811 for a free emergency line locate to determine the location of Southwest Gas pipe before cleaning the sewer pipe with a flexible auger (roter device or plumber's snake). Should persons sense or see, but not penetrate, an obstruction in the sewer line, call the Southwest Gas emergency number (Section 1) to ensure that Southwest Gas pipe has not been damaged. (See Section 6 for hazard recognition, emergency action, and prevention of ignition).

#### Additional reference information

- (1) International Society for Automation's (ISA) RP 12.13-2003, *Recommended Practice for the Installation, Operation, and Maintenance of Combustible Gas Detection Instruments*.
- (2) American Petroleum Institute's (API) 2009, *Safe Welding, Cutting, and Hot Work Practices in the Petroleum and Petrochemical Industries*.
- (3) Local fire codes, plumbing codes, mechanical codes, fuel gas codes, fire alarm and signal codes, departments of building and safety, and departments of occupational health and safety.
- (4) National Fire Protection Association's NFPA 54, *National Fuel Gas Code* (2009) and NFPA 72, *National Fire Alarm and Signaling Code* (2010).
- (5) U.S. Chemical Safety and Hazard Investigation Board's Safety Bulletin (9/2009), *Dangers of Purging Gas Piping into Buildings*.
- (6) California Contractors State License Board (09/28/2009), *Contractors State License Board Encourages Natural Gas Project Safety*.
- (7) Bruno, T.J., *The Loss of Odor through Conjugation, Suppression and Cross-Adaptation: How One Plus One Can Sometimes Equal Zero*, Thermophysical Properties Division, Chemical Science and Technology Laboratory National Institute of Standards and Technology (2005).
- (8) American Gas Association's *Purging Principles and Practice*, Third Edition, (2001) and *Gas Engineers Handbook* (1965).
- (9) *Pipeline Purging Principles and Practice Research*, James A. Johnson, Steven J. Svedeman, Christopher A. Kuhl; Gas Research Institute (01/1997).
- (10) Harris, R.J., *The Investigation and Control of Gas Explosions in Building and Heating Plants* (British Gas, 1983).

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## 8. Exposure Controls / Personal Protection

#### Occupational exposure limits

ACGIH Components	Type	Value
Butane (106-97-8)	TWA	1000 ppm
Carbon dioxide (124-38-9)	STEL	30000 ppm
	TWA	5000 ppm
Ethane (74-84-0)	TWA	1000 ppm
Methane (74-82-8)	TWA	1000 ppm
Natural Gas (8006-14-2)	TWA	1000 ppm
Pentane (109-66-0)	TWA	600 ppm
Propane (74-98-6)	TWA	1000 ppm

<b>U.S. - OSHA Components</b>	<b>Type</b>	<b>Value</b>
Butane (106-97-8)	TWA	800 ppm
		1900 mg/m <sup>3</sup>
Carbon dioxide (124-38-9)	PEL	9000 mg/m <sup>3</sup>
		5000 ppm
	STEL	30000 ppm
	TWA	54000 mg/m <sup>3</sup>
Pentane (109-66-0)		18000 mg/m <sup>3</sup>
		10000 ppm
	PEL	1000 ppm
		2950 mg/m <sup>3</sup>
	STEL	2250 mg/m <sup>3</sup>
Propane (74-98-6)		750 ppm
	TWA	600 ppm
		1800 mg/m <sup>3</sup>
	PEL	1800 mg/m <sup>3</sup>
	1000 ppm	
	TWA	1000 ppm
		1800 mg/m <sup>3</sup>
<b>Exposure guidelines</b>	OSHA: The acceptable max. peak above the ceiling concentration for an 8-hour shift is: 50 ppm. The acceptable duration of the peak above the ceiling concentration is: 10 minutes once, only if no other measureable exposure occurs See Section 7.	
<b>Engineering controls</b>		
<b>Personal protective equipment</b>		
<b>Eye / face protection</b>	Wear safety glasses, goggles, or face shields around pressurized systems.	
<b>Skin protection</b>	Wear gloves.	
<b>Clothing</b>	Wear cotton clothing or clothing that is flame resistant or flame retardant. Avoid rayon or other petrochemical fabrics. Wear long sleeves and long pants.	
<b>Respiratory protection</b>	In case of inadequate ventilation or in the case of pressurized gas displacing the air, use a supplied-air respirator.	

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## 9. Physical & Chemical Properties

<b>Appearance</b>	Colorless gas.
<b>Color</b>	Not relevant.
<b>Odor</b>	Gassy, sulfurous, rotten egg type odor.
<b>Odor threshold</b>	Readily detectable by a person with a normal sense of smell at a concentration in air of one-fifth of the lower flammability limit.
<b>Physical state</b>	Gas.
<b>Form</b>	Gas.
<b>pH</b>	Not relevant.
<b>Melting point</b>	Not available.
<b>Freezing point</b>	Not available.
<b>Boiling point</b>	-258.7 °F (-161.5 °C)
<b>Flash point</b>	-297.8 °F (-183.2 °C) (Methane) Cleveland Closed Cup
<b>Evaporation rate</b>	Not available.
<b>Flammability</b>	Not available.
<b>Flammability limits in air, upper, % by volume</b>	14 - 15
<b>Flammability limits in air, lower, % by volume</b>	4 - 5
<b>Vapor pressure</b>	Not available.
<b>Vapor density</b>	Not relevant.



<b>Specific gravity</b>	0.56 - 0.60 at 60°F (15°C)
<b>Solubility (water)</b>	Insoluble.
<b>Partition coefficient (n-octanol/water)</b>	No data available.
<b>Auto-ignition temperature</b>	900 - 1170 °F (482.2 - 632.2 °C)
<b>Decomposition temperature</b>	Not available.
<b>Viscosity</b>	Not relevant.

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## 10. Chemical Stability & Reactivity Information

<b>Chemical stability</b>	Stable at normal conditions.
<b>Conditions to avoid</b>	Heat, flames and sparks.
<b>Incompatible materials</b>	Strong oxidizing agents.
<b>Hazardous decomposition products</b>	Carbon dioxide. Carbon monoxide.
<b>Possibility of hazardous reactions</b>	Hazardous polymerization does not occur.

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## 11. Toxicological Information

### Toxicological data

Components	Test Results
Butane (106-97-8)	Acute Inhalation LC50 Rat: 658 mg/l 4 Hours
Pentane (109-66-0)	Acute Inhalation LC50 Rat: 364 mg/l 4 Hours
Propane (74-98-6)	Acute Inhalation LC50 Rat: > 1442.847 mg/l 15 Minutes
Methane (74-82-8)	Not available

<b>Acute effects</b>	Breathing of high vapor concentrations may cause dizziness, light-headedness, headache, nausea and loss of coordination. Continued inhalation may result in unconsciousness. Asphyxiants displace oxygen in the air and can cause symptoms of oxygen deprivation (asphyxiation).
<b>Local effects</b>	Contact with compressed gas can cause damage (frostbite) due to rapid evaporative cooling.
<b>Sensitization</b>	Not a skin sensitizer.
<b>Chronic effects</b>	No data available.
<b>Carcinogenicity</b>	No data available.
<b>Mutagenicity</b>	No data available.
<b>Reproductive effects</b>	No data available.
<b>Teratogenicity</b>	No data available.
<b>Further information</b>	No other specific acute or chronic health impact noted.

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## 12. Ecological Information

<b>Ecotoxicity</b>	The product is a volatile organic compound which has a photochemical ozone creation potential.
<b>Aquatic toxicity</b>	Not expected to be harmful to aquatic organisms.
<b>Persistence and degradability</b>	The product is easily biodegradable.
<b>Bioaccumulation / Accumulation</b>	The product is not bioaccumulating.
<b>Mobility in environmental media</b>	The product is a volatile substance, which may spread in the atmosphere.

**Partition coefficient (n-octanol/water)** No data available.

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### 13. Disposal Considerations

**Waste codes D001:** Waste Flammable material with a flash point <140 °F

**Disposal instructions** This material safety data sheet concerns non-containerized natural gas that is delivered by pipeline from a Southwest Gas meter. See Section 16 for more information.

Do not dispose of waste into sewer. This product, in its unaltered state, when discarded or disposed of, is not a hazardous waste according to Federal regulations (40 CFR 261.4(b)(4)). Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste.

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### 14. Transport Information

**DOT** This material safety data sheet concerns non-containerized natural gas that is delivered by pipeline from a Southwest Gas meter. Re-transportation of natural gas by pipeline may be governed by 49 CFR Part 192 and applicable pipeline safety codes.

**Basic shipping requirements** If this product is placed into a pressurized container and offered for shipment, refer to 49 CFR, Parts 171 to 185, for appropriate regulatory information. See Section 16.

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### 15. Regulatory Information

**US federal regulations** This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.  
Some components are on the U.S. EPA TSCA Inventory List.

**US TSCA Section 12(b) Export Notification: Export Notification requirement / De minimis concentration**  
Pentane (CAS 109-66-0) 1.0 % One-Time Export Notification only.

Natural gas reporting requirements are contained in 40 CFR Part 311, 40 CFR Part 370, and 40 CFR Part 372 for industrial users of natural gas and for government employees of hazardous waste operations. Southwest Gas has not attempted to assess the applicability of these regulations to the unique operating characteristics of the applicable employers

#### Superfund Amendments and Reauthorization Act of 1986 (SARA)

<b>Section 302 extremely hazardous substance</b>	No
<b>Section 311 hazardous chemical</b>	Yes

**State regulations** California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) Warning: This product and its combustion by-products are known to the State of California to cause cancer, birth defects or other reproductive harm.

**US - California Hazardous Substances (Director's): Listed substance**

Butane (CAS 106-97-8)	Listed.
Carbon dioxide (CAS 124-38-9)	Listed.
Pentane (CAS 109-66-0)	Listed.

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## 16. Other Information

<b>Containerized natural gas and LNG</b>	This material safety data sheet concerns non-containerized natural gas that is delivered by pipeline from a Southwest Gas meter. <b>Containerized natural gas</b> and <b>liquefied natural gas</b> have their own unique hazards that are not provided for in this material safety data sheet. For example, those products require substantially different and specialized engineering controls, safe handling precautions, personal protective equipment, accidental release measures, fire fighting measures, transportation requirements, and product labeling requirements.
<b>Odorant added by Southwest Gas</b>	This material safety data sheet is for natural gas that is odorized by Southwest Gas. Some natural gas supplied by Southwest Gas is already odorized from upstream distributors and may contain different odorant blends than those used by Southwest Gas. Please contact Southwest Gas for more information about the source of the natural gas for any particular location. Some downstream users may remove the odorant from the natural gas supplied by Southwest Gas, or may add similar or different odorant blends.
<b>HMIS® ratings</b>	Health: 1* Flammability: 4 Physical hazard: 0 (HMIS® is a registered trade and service mark of the NPCA.)
<b>NFPA ratings</b>	Health: 1 Flammability: 4 Instability: 0
<b>Definitions</b>	
<b>Air-ejector</b>	A device that uses the Venturi principle to siphon air or other gases. Compressed air or pressurized inert gas is introduced to allow the pressure at the throat to drop below atmospheric pressure, allowing air or other gases at atmospheric pressure to flow into the throat.
<b>Fire-watch</b>	The assignment of a person or persons to an area for the express purpose of notifying the fire department, the building occupants, or both of an emergency; preventing a fire from occurring; extinguishing small fires; or protecting the public from fire or life safety dangers.
<b>Hot-work</b>	Work or operations capable of providing a source of ignition. Includes, but is not limited to: burning, heating, thermal spraying, thawing pipe, torch-applied roofing, or other work involving open flames; sparking of electrical equipment; and cutting, welding, grinding, riveting, buffing, drilling, blasting, chipping, scraping, sawing, brazing, soldering, or other similar operations that create hot metal, sparks, or hot surfaces from friction or impact.
<b>Retrieval-system</b>	Combinations of rescue equipment used for nonentry (external) rescue of persons from hazardous environments or confined spaces.
<b>Disclaimer</b>	This product has not been tested by Southwest Gas to determine its specific health hazards. Therefore, the information in this material safety data sheet may be incomplete. The information includes health hazard information on the product components that was drawn from external sources. All information is provided without warranty, express or implied. The information is believed to be correct: if errors are discovered, please promptly report them to Southwest Gas. All information contained in this material safety data sheet is provided to allow the user to make an independent determination of the methods required to safeguard workers, the public and the environment. This document is not intended to convey legal advice: users should consult all applicable building and construction codes, occupational and process safety codes, environmental regulations, and all other applicable ordinances, rules, codes, regulations, statutes or other law that may include different or more stringent provisions. No effort is made to identify any transportation, environmental, or other regulatory requirements beyond the states of Arizona, California, and Nevada.

**Notice of future revisions**

Notices of revision to this material safety data sheet will be provided in customer bill inserts and in messages on the front of the customer bill. Request a current version of this material safety data sheet by contacting Southwest Gas (Section 1) or by visiting [www.swgas.com/emergencysafety](http://www.swgas.com/emergencysafety).

**Original issue date**

02-26-2010

**Summary of revisions**

The prior version was dated 02-26-2010. The revisions include the clarification of the emergency contact information; the addition of hazard recognition in Section 5, the addition of retrieval-systems in Sections 5 & 6; the addition of ignition sources in Section 6; the inclusion of hot-work related instructions in Sections 6 & 7; the addition of sewer work precautions in Section 7; the addition of informational references in Sections 6 & 7; the addition of definitions in Section 16; and a clarification of the information contained in the disclaimer in Section 16.