



## SAFETY DATA SHEET

# ETHYL MERCAPTAN

### 1. PRODUCT AND COMPANY IDENTIFICATION

#### Company

Bayou Gas Odorants  
300B Williams Lake Road  
Pineville, Louisiana 71360

**Customer Service Telephone Number:** (318) 767-0820  
(Monday through Friday, 8:00AM to 5:00PM CST)

#### Emergency Information

**Transportation:** CHEMTREC: (800) 424-9300  
(24 hrs., 7 days a week)

**Medical:** Rocky Mountain Poison Center: (866) 767-5089  
(24 hrs., 7 days a week)

#### Product Information

**Product name:** ETHYL MERCAPTAN  
**Synonyms:** ESH  
**Molecular formula:** C<sub>2</sub>H<sub>5</sub>SH  
**Chemical family:** mercaptans  
**Molecular weight:** 62.13 g/mol  
**Product use:** Chemical intermediate

### 2. HAZARDS IDENTIFICATION

#### Emergency Overview

**Color:** Clear - colourless  
**Physical state:** liquid  
**Odor:** mercaptans

#### \*Classification of the substance or mixture:

Flammable liquid., Category 1, H224  
Oral: Acute toxicity, Category 4, H302  
Inhalation: Acute toxicity, Category 4, H332  
Acute aquatic toxicity, Category 1, H400  
Chronic aquatic toxicity, Category 1, H410

\*For the full text of the H-Statements mentioned in this Section, see Section 16.

**GHS-Labeling**

Hazard pictograms:



Signal word:

**Danger**

**Hazard statements:**

H224 : Extremely flammable liquid and vapour.

H302 + H332 : Harmful if swallowed or if inhaled

H410 : Very toxic to aquatic life with long lasting effects.

**Supplemental Hazard Statements:**

The gas deadens the sense of smell. Do not depend on odor to detect presence of gas. May displace oxygen and cause rapid suffocation.

**Precautionary statements:**

**Prevention:**

P210 : Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
P233 : Keep container tightly closed.  
P240 : Ground/bond container and receiving equipment.  
P241 : Use explosion-proof electrical/ ventilating/ lighting/ equipment.  
P242 : Use only non-sparking tools.  
P243 : Take precautionary measures against static discharge.  
P261 : Avoid breathing gas/mist/vapours/spray.  
P264 : Wash skin thoroughly after handling.  
P270 : Do not eat, drink or smoke when using this product.  
P271 : Use only outdoors or in a well-ventilated area.  
P273 : Avoid release to the environment.  
P280 : Wear protective gloves/ eye protection/ face protection.

**Response:**

P301 + P312 : IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.  
P303 + P361 + P353 : IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.  
P304 + P340 : IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
P312 : Call a POISON CENTER or doctor/ physician if you feel unwell.  
P330 : Rinse mouth.  
P370 + P378 : In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.  
P391 : Collect spillage.

**Storage:**

P403 + P235 : Store in a well-ventilated place. Keep cool.

**Disposal:**

P501 : Dispose of contents/ container to an approved waste disposal plant.

**Supplemental information:**

**Potential Health Effects:**

Objectionable odor may cause nausea, headache or dizziness. The gas deadens the sense of smell. Do not depend on odor to detect presence of gas. Vapor is heavier than air and can cause suffocation by reducing oxygen available for breathing.

May also cause: central nervous system depression, respiratory arrest, chest discomfort, accumulation of fluid in the lungs which may be delayed for several hours, (severity of effects depends on extent of exposure).

<b>3. COMPOSITION/INFORMATION ON INGREDIENTS</b>
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Chemical Name	CAS-No.	Wt/Wt	GHS Classification**
Ethaneethiol	75-08-1	100 %	H224, H302, H332, H400, H410

\*\*For the full text of the H-Statements mentioned in this Section, see Section 16.

#### 4. FIRST AID MEASURES

**Inhalation:**

If inhaled, remove to fresh air and keep at rest in a position comfortable for breathing. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

**Skin:**

In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse.

**Eyes:**

Immediately flush eye(s) with plenty of water.

**Ingestion:**

If swallowed, DO NOT induce vomiting unless directed to do so by medical personnel. Get medical attention. Never give anything by mouth to an unconscious person. Rinse mouth.

**Notes to physician:**

Exposure to material may cause delayed lung injury resulting in pulmonary edema and pneumonitis. Exposed individuals should be monitored for 72 hours after exposure for the onset of delayed respiratory symptoms.

#### 5. FIREFIGHTING MEASURES

**Extinguishing media (suitable):**

water spray, carbon dioxide, foam, Dry chemical

**Protective equipment:**

Fire fighters and others who may be exposed to products of combustion should wear full fire fighting turn out gear (full Bunker Gear) and self-contained breathing apparatus (pressure demand / NIOSH approved or equivalent).

**Further firefighting advice:**

Cool closed containers exposed to fire with water spray.

Closed containers of this material may explode when subjected to heat from surrounding fire.

After a fire, wait until the material has cooled to room temperature before initiating clean-up activities.

Do not allow run-off from fire fighting to enter drains or water courses.

Fire fighting equipment should be thoroughly decontaminated after use.

**Fire and explosion hazards:**

When burned, the following hazardous products of combustion can occur:

Carbon oxides  
sulfur oxides  
hydrogen sulfide  
Hazardous organic compounds

## **6. ACCIDENTAL RELEASE MEASURES**

### **In case of spill or leak:**

Prevent further leakage or spillage if you can do so without risk. Evacuate area of all unnecessary personnel. Ventilate the area. Eliminate all ignition sources. Avoid generation of vapors. Contain and collect spillage with non-combustible absorbent material such as sodium bicarbonate, sodium carbonate, calcium carbonate, clean sand or non-acidic clay and then wet down (dampen) the mixture with water. Sweep or scoop up using non-sparking tools and place into suitable properly labeled containers for prompt disposal. The sweepings should be wetted down further with water. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits.

## **7. HANDLING AND STORAGE**

### **Handling**

#### **General information on handling:**

Do not taste or swallow.  
Avoid breathing vapor or mist.  
Keep away from heat, sparks and flames.  
No smoking.  
Keep container closed.  
Do not enter confined spaces unless adequately ventilated.  
Use only with adequate ventilation.  
Wash thoroughly after handling.  
Check that all equipment is properly grounded and installed to satisfy electrical classification requirements.  
Container hazardous when empty.  
Follow label warnings even after container is emptied.  
RESIDUAL VAPORS MAY EXPLODE ON IGNITION.  
DO NOT CUT, DRILL, GRIND, OR WELD ON OR NEAR THIS CONTAINER.  
Improper disposal or reuse of this container may be dangerous and/or illegal.  
Emptied container retains vapor and product residue.

### **Storage**

#### **General information on storage conditions:**

Keep in a dry, cool place. Keep away from direct sunlight. Keep container closed when not in use. Store in closed containers, in a secure area to prevent container damage and subsequent spillage. Store in well ventilated area away from heat and sources of ignition such as flame, sparks and static electricity. Ensure that all storage and handling equipment is properly grounded and installed to satisfy electrical classification requirements. Static electricity may accumulate when transferring material. All metal and groundable storage containers, including but not limited to drums, cylinders, Returnable Intermodal Bulk Containers (RIBCs) and Class C Flexible Intermodal Bulk Containers (FIBCs) must be bonded and grounded during filling and emptying operations. Observe all federal, state and local regulations and National Fire Protection Association (NFPA) Codes which pertain to the specific local

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conditions of storage and use, including OSHA 29 CFR 1910.106 and NFPA 30, 70, 77, and 497.

**Storage incompatibility – General:**

Store away from oxidizers and reactive materials.

Store separate from: hydrogen peroxide

hypochlorites

nitric acid

Avoid exposure to water in process equipment at temperatures below approx 20°C (68°F)/1 atm to avoid formation of solid hydrates.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Airborne Exposure Guidelines:**

**Ethanethiol (75-08-1)**

US. ACGIH Threshold Limit Values

Time weighted average                      0.5 ppm

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Ceiling Limit Value                              10 ppm (25 mg/m3)

Only those components with exposure limits are printed in this section. Limits with skin contact designation above have skin contact effect. Air sampling alone is insufficient to accurately quantitate exposure. Measures to prevent significant cutaneous absorption may be required. Limits with a sensitizer designation above mean that exposure to this material may cause allergic reactions.

**Engineering controls:**

Investigate engineering techniques to reduce exposures below airborne exposure limits or to otherwise reduce exposures. Provide ventilation if necessary to minimize exposures or to control exposure levels to below airborne exposure limits (if applicable see above). If practical, use local mechanical exhaust ventilation at sources of air contamination such as open process equipment.

Consult ACGIH ventilation manual or NFPA Standard 91 for design of exhaust systems.

**Respiratory protection:**

Avoid breathing vapor or mist. Where airborne exposure is likely or airborne exposure limits are exceeded (if applicable, see above), use NIOSH approved respiratory protection equipment appropriate to the material and/or its components. Full facepiece equipment is recommended and, if used, replaces need for face shield and/or chemical goggles. Consult respirator manufacturer to determine appropriate type equipment for a given application. Observe respirator use limitations specified by NIOSH or the manufacturer. For emergency and other conditions where there may be a potential for significant exposure or where exposure limit may be significantly exceeded, use an approved full face positive-pressure, self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply. Respiratory protection programs must comply

with 29 CFR § 1910.134.

**Skin protection:**

Minimize skin contamination by following good industrial hygiene practice. Wearing protective gloves is recommended. Wash hands and contaminated skin thoroughly after handling.

**Eye protection:**

Use good industrial practice to avoid eye contact.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

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<b>Color:</b>	Clear - colourless
<b>Physical state:</b>	liquid
<b>Odor:</b>	mercaptans
<b>Odor threshold:</b>	0.4 ppb
<b>Flash point</b>	-49 °F (-45 °C) (Method: Standard ASTM D 3278)
<b>Auto-ignition temperature:</b>	572 °F (300 °C)
<b>Lower flammable limit (LFL):</b>	2.8 %(V)
<b>Upper flammable limit (UFL):</b>	18 %(V)
<b>pH:</b>	not determined
<b>Density:</b>	0.839 g/cm <sup>3</sup>
<b>Specific Gravity (Relative density):</b>	0.839 (68 °F ( 20 °C))Water=1 (liquid)
<b>Vapor pressure:</b>	401 mmHg (68 °F (20 °C))calculated
<b>Relative vapor density:</b>	2.1
<b>Vapor density:</b>	2.1 kg/m <sup>3</sup>
<b>Boiling point/boiling range:</b>	95 °F (35 °C)
<b>Freezing point:</b>	-234 °F (-148 °C)
<b>Melting point/range:</b>	-234 °F (-148 °C)
<b>Evaporation rate:</b>	not determined
<b>Solubility in water:</b>	6.8 g/l 68 °F (20 °C)

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<b>Refractive index:</b>	1.431 68 °F (20 °C)
<b>Viscosity, dynamic:</b>	0.29 mPa.s 68 °F (20 °C)
<b>% Volatiles:</b>	100 %
<b>Molecular weight:</b>	62.13 g/mol
<b>Oil/water partition coefficient:</b>	1.26
<b>Thermal decomposition</b>	No data available
<b>Critical point:</b>	Critical pressure: 40,653 mmHg Critical temperature: 437.9 °F (225.5 °C)
<b>Henry's constant:</b>	455.8E+00 Pa.m <sup>3</sup> /mol
<b>Flammability:</b>	See GHS Classification in Section 2

## 10. STABILITY AND REACTIVITY

**Stability:**

This material is chemically stable under normal and anticipated storage, handling and processing conditions.

**Materials to avoid:**

Risk of violent reaction.  
Strong oxidizing agents  
Hydrogen peroxide  
Nitric acid  
Reactive materials  
Hypochlorites

**Conditions / hazards to avoid:**

Sparks, flames, ignition points and static electricity. Avoid exposure to water in process equipment at temperatures below approx 20°C (68°F)/1 atm to avoid formation of solid hydrates.

**Hazardous decomposition products:**

Thermal decomposition giving flammable and toxic products  
Carbon oxides  
sulfur oxides  
hydrogen sulfide  
Hazardous organic compounds



**11. TOXICOLOGICAL INFORMATION**

**Data for ETHYL MERCAPTAN**

**Acute toxicity**

**Oral:**

Harmful if swallowed. (rat) LD50 = 682 mg/kg.

**Dermal:**

No deaths occurred. (rabbit) LD50 > 2,000 mg/kg.

**Inhalation:**

Harmful if inhaled. (rat) 4 h LC50 = 11.2 mg/l = 4420 ppm. signs: Central nervous system effects (vapor)

**Skin Irritation:**

Causes mild skin irritation. (rabbit) (4 h)

**Eye Irritation:**

Causes mild eye irritation. (rabbit) (data for a similar material)

**Repeated dose toxicity**

Subchronic oral administration to rat / affected organ(s): blood, liver / signs: changes in blood cell counts, changes in organ structure or function / (data for a similar material)

Subchronic inhalation administration to rat / affected organ(s): blood, liver, kidney / signs: changes in blood cell counts, changes in organ structure or function / (data for a similar material)

Subchronic inhalation administration to rat / affected organ(s): lung, kidney / signs: inflammation, changes in organ structure or function, changes in organ weights / (data for a similar material)

**Genotoxicity**

**Assessment in Vitro:**

Both positive and equivocal responses have been reported in tests using: animal cells

No genetic changes were observed in laboratory tests using: bacteria

**Assessment in Vivo:**

No genetic changes were observed in laboratory tests using: mice, (data for similar material)

**Developmental toxicity**

Exposure during pregnancy. inhalation (mouse) / No birth defects were observed. at doses that produce effects in mothers

**Human experience**

**Inhalation:**

Central nervous system: headache, nausea, respiratory depression.

Nose: The gas deadens the sense of smell. Do not depend on odor to detect presence of gas.

## 12. ECOLOGICAL INFORMATION

### Chemical Fate and Pathway

Data on this material and/or a similar material are summarized below.

#### Data for ETHYL MERCAPTAN

##### **Biodegradation:**

Not readily biodegradable. (28 d) biodegradation 27.10 %

##### **Octanol Water Partition Coefficient:**

log Pow = 1.5

##### **Mobility and Distribution in the Environment:**

Slight adsorption / Log Koc= 1.53

### Ecotoxicology

Data on this material and/or a similar material are summarized below.

#### Data for ETHYL MERCAPTAN

##### **Aquatic toxicity data:**

Toxic. *Oncorhynchus mykiss* (rainbow trout) 96 h LC50 = 2.4 mg/l

##### **Aquatic invertebrates:**

Very toxic. *Daphnia magna* (Water flea) 48 h EC50 = 0.1 mg/l

##### **Algae:**

Toxic. *Pseudokirchneriella subcapitata* (green algae) 72 h EC50 = 3.0 mg/l

## 13. DISPOSAL CONSIDERATIONS

### **Waste disposal:**

Disposal via incineration is recommended. Dispose of in accordance with federal, state and local regulations. Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits. Note: Chemical additions to, processing of, or otherwise altering this material may make this waste management information incomplete, inaccurate, or otherwise inappropriate. Furthermore, state and local waste disposal requirements may be more restrictive or otherwise different from federal laws and regulations.

Take appropriate measures to prevent release to the environment.

## 14. TRANSPORT INFORMATION

### **US Department of Transportation (DOT)**

UN Number : 2363  
Proper shipping name : Ethyl mercaptan  
Class : 3  
Packaging group : I



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Marine pollutant : yes

**International Maritime Dangerous Goods Code (IMDG)**

UN Number : 2363  
Proper shipping name : ETHYL MERCAPTAN  
Class : 3  
Packaging group : I  
Marine pollutant : yes  
Flash point : -49 °F (-45 °C)

**15. REGULATORY INFORMATION**

**Chemical Inventory Status**

EU. EINECS	EINECS	Conforms to
United States TSCA Inventory	TSCA	The components of this product are all on the TSCA Inventory.
Canadian Domestic Substances List (DSL)	DSL	All components of this product are on the Canadian DSL.
China. Inventory of Existing Chemical Substances in China (IECSC)	IECSC (CN)	Conforms to
Japan. ENCS - Existing and New Chemical Substances Inventory	ENCS (JP)	Conforms to
Japan. ISHL - Inventory of Chemical Substances	ISHL (JP)	Conforms to
Korea. Korean Existing Chemicals Inventory (KECI)	KECI (KR)	Conforms to
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	PICCS (PH)	Conforms to
Australia Inventory of Chemical Substances (AICS)	AICS	Conforms to

**United States – Federal Regulations**

**SARA Title III – Section 302 Extremely Hazardous Chemicals:**

The components in this product are either not SARA Section 302 regulated or regulated but present in negligible concentrations.

**SARA Title III - Section 311/312 Hazard Categories:**

Acute Health Hazard, Fire Hazard

**SARA Title III – Section 313 Toxic Chemicals:**

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.



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**Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) - Reportable Quantity (RQ):**

The components in this product are either not CERCLA regulated, regulated but present in negligible concentrations, or regulated with no assigned reportable quantity.

**United States – State Regulations**

**New Jersey Right to Know**

<u>Chemical Name</u>	<u>CAS-No.</u>
Ethanethiol	75-08-1

**New Jersey Right to Know – Special Health Hazard Substance(s)**

<u>Chemical Name</u>	<u>CAS-No.</u>
Ethanethiol	75-08-1

**Pennsylvania Right to Know**

<u>Chemical Name</u>	<u>CAS-No.</u>
Ethanethiol	75-08-1

**California Prop. 65**

This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive defects.

**16. OTHER INFORMATION**

**Full text of H-Statements referred to under sections 2 and 3.**

- H224 Extremely flammable liquid and vapour.
- H302 Harmful if swallowed.
- H332 Harmful if inhaled.
- H400 Very toxic to aquatic life.
- H410 Very toxic to aquatic life with long lasting effects.

Miscellaneous:

Other information: This MSDS covers the following grades: Odorant Grade  
**Latest Revision(s):**

Reference number: EshA20190108  
Date of Revision: 01/08/2019  
Date Printed: 01/11/2019



## SAFETY DATA SHEET

# ETHYL MERCAPTAN

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