Material Safety Data Sheet

1. Product and Company Identification

Product name : **Methyl Mercaptan**

Chemical formula : CH3SH

Synonyms : Methanethiol; Thiomethanol; Mercaptomethane; Methyl Sulfhydrate; Thiomethyl Alcohol; UN 1064

Company : Specialty Gases of America, Inc
6055 Brent Dr.
Toledo, OH 43611

Telephone : 419-729-7732

Emergency : 800-424-9300

2. Composition/Information on Ingredients

Components	CAS Number	% Volume
Methyl Mercaptan	74-93-1	100%

3. Hazards Identification

Emergency Overview

Harmful if inhaled, respiratory tract irritation, skin irritation, eye irritation, central nervous system depression. Flammable gas. May cause flash fire.

Potential Health Effects

Inhalation : Irritation, nausea, vomiting, wheezing, irregular heartbeat, headache, symptoms of drunkenness, bluish skin color, suffocation, lung congestion, blood disorders, kidney damage, liver damage, convulsions, coma. May cause lung damage in long term exposure.

Eye contact : Irritation, blurred vision.

Skin contact : Irritation, blisters.

Ingestion : Same as effects reported in other routes of exposure, frostbite.

Chronic Health Hazard : None known.

4. First Aid Measures

General advice : None.

Eye contact : Wash eyes immediately with large amounts of water, occasionally lifting upper and lower lids, until no evidence of chemical remains. Then get immediate medical attention.

Skin contact : If frostbite occurs, immediately flush with plenty of lukewarm water (105-115°F; 41-46°C). DO NOT USE HOT WATER. If warm water is not available, gently wrap affected parts in blankets. Get immediate medical attention.

Ingestion : If large amount is swallowed, get medical attention.

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. Get immediate medical attention.
Note to physicians	:	For inhalation, consider oxygen.
Antidote	:	Amyl nitrite, inhalation; Sodium nitrite, intravenous; Pyridoxine, intravenous; Urea, intravenous. CAUTION! Get medical attention immediately.

5. Fire-Fighting Measures

Suitable extinguishing media	:	Alcohol-resistant foam. Let burn unless leak can be stopped immediately. Large fires: Use regular foam or flood with fine water spray.
Specific hazards	:	Severe fire hazard. The vapor is heavier than air. Vapors or gases may ignite at distant ignition sources and flash back. Vapor/air mixtures are explosive. Electrostatic charges may be generated by flow or agitation resulting in ignition or explosion.
Fire fighting	:	Move container from fire area if it can be done without risk. Withdraw immediately n case of rising sound from venting safety device or any discoloration of tanks due to fire. Cool containers with water spray until well after the fire is out. Keep unnecessary people away, isolate hazard area and deny entry. For tank, rail car or tank truck: Evacuation radius: 800 meters (1/2 mile).

6. Accidental Release Measures

Air release	:	Reduce vapors with water spray. Stay upwind and keep out of low areas.
Soil release	:	Dig holding area such as lagoon, pond or pit for containment. Dike for later disposal. Absorb with sand or other non-combustible material.
Water release	:	Absorb with activated carbon. Collect spilled material using mechanical equipment.
Occupational spill/release	:	Do not touch spilled material. Stop leak if possible without personal risk. Avoid heat, sparks, flames and other sources of ignition. Remove sources of ignition. Reduce vapors with water spray. Do not get water directly on material. Keep unnecessary people away. Isolate hazard area and deny entry. Stay upwind and keep out of low areas. Ventilate closed spaces before entering. Evacuation radius: 150 feet. For tank, rail car or tank truck: 800 meters (1/2 mile). Notify Local Emergency Planning Committee and State Emergency Response Commission for release greater than or equal to RQ (U.S. SARA Section 304). If release occurs in the U.S. and is reportable under CERCLA Section 103, notify the National Response Center at (800)424-8802 (USA) or (202)426-2675 (USA).
Additional advice	:	None.

7. Handling and Storage

Handling

Secure cylinder when using to protect from falling. Use suitable hand truck to move cylinders.

Storage

Store in accordance with all current regulations and standards. Subject to storage regulations: U.S. OSHA 29 CFR 1910.101. Grounding and bonding required. Keep separated from incompatible substances. Notify State Emergency Response Commission for storage or use at amounts greater than or equal to the TPQ (U.S. SARA Section 302). SARA Section 303 requires facilities storing a material with a TPQ to participate in local emergency response planning (U.S. EPA 40 CFR 355 Part B).

8. Exposure Controls / Personal Protection

Exposure limits

ACGIH	:	0.5 ppm TWA
OSHA (final)	:	10 ppm Ceiling; 20 mg/m3 Ceiling
OSHA (vacated)	:	0.5 ppm TWA; 1 mg/m3 TWA
NIOSH	:	0.5 ppm Ceiling 15 min; 1 mg/m3 Ceiling 15 min

IDLH

150 ppm

Engineering measures/Ventilation

Provide local exhaust or process enclosure ventilation system. Ventilation equipment should be explosion-resistant if explosive concentrations of materials are present. Ensure compliance with applicable exposure limits.

Personal protective equipment

Respiratory protection	:	The following respirators and maximum use concentrations are drawn from NIOSH and/or OSHA. 5 ppm – Any air-purifying half-mask respirator equipped with organic vapor cartridge(s). Any supplied-air respirator. 12.5 ppm – Any supplied-air respirator operated in a continuous-flow mode. Any powered, air-purifying respirator with organic vapor cartridge(s). 25 ppm – Any air-purifying respirator with a full facepiece and an organic vapor canister(s). Any air-purifying full-facepiece respirator (gas mask) with a chin-style, front-mounted or back-mounted organic vapor canister. Any powered, air-purifying respirator with a tight-fitting facepiece and organic vapor cartridge(s). Any supplied-air respirator with a tight-fitting facepiece that is operated in a continuous-flow mode. Any self-contained breathing apparatus with a full facepiece. Any supplied-air respirator with a full facepiece. 150 ppm – Any supplied-air respirator operated in a pressure-demand or other positive-pressure mode. Emergency or planned entry into unknown concentrations or IDLH conditions – Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode. Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive-pressure mode. Escape – Any air-purifying full-facepiece respirator (gas mask) with a chin-style, front-mounted or back-mounted organic vapor canister. Any appropriate escape-type, self-contained breathing apparatus.
Hand protection	:	Wear insulated gloves.
Eye protection	:	Wear splash resistant safety goggles with a faceshield. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.
Skin and body protection	:	For the gas: Wear appropriate chemical resistant clothing. For the liquid: Wear appropriate protective, cold insulating clothing.

9. Physical and Chemical Properties

Form	:	Gas.
Color	:	Colorless.
Odor	:	Garlic odor.
Molecular weight	:	48.11

Vapor pressure	:	1535 mmHg @ 21.1°C
Vapor density	:	1.66 (air = 1)
Boiling point	:	6°C
Melting point	:	-123°C
Water solubility	:	2.4% @ 20°C
Solvent solubility	:	Soluble: alcohol, ether, petroleum, naphtha.

10. Stability and Reactivity

Stability	:	Contact with water or moist air may form flammable and/or toxic gases or vapors.
Conditions to avoid	:	Avoid heat, flames, sparks or other sources of ignition. Minimize contact with material. Avoid inhalation of material or combustion by-products. Keep out of water supplies and sewers.
Materials to avoid	:	Acids, metals, combustible materials, halo carbons, reducing agents, metal oxides, peroxides, oxidizing materials.
Hazardous decomposition products	:	Thermal decomposition products: oxides of sulfur.

11. Toxicological Information

The components of this material have been reviewed in various sources and the following endpoints are published:

METHYL MERCAPTAN (74-93-1)	:	Inhalation LC50 Rat: 675 ppm/4H; Oral LD50 Rat: 109.6 mg/kg; Dermal LD50 Rat: > 84.8 mg/kg

Acute Toxicity Level

METHYL MERCAPTAN (74-93-1)	:	Toxic: Inhalation

Component Carcinogenicity

None of this product's components are listed by ACGIH, IARC, NTP, OSHA or DFG.

Local Effects

METHYL MERCAPTAN (74-93-1)	:	Irritant: Inhalation, skin, eye.

Target Organs

METHYL MERCAPTAN (74-93-1)	:	Central nervous system, blood.

12. Ecological Information

No LOLI ecotoxicity data are available for this product's components.

13. Disposal Considerations

Waste from residues / unused products	:	Dispose in accordance with all applicable regulations. Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): U153.
Contaminated	:	Return cylinder to supplier.

packaging

Component Waste Numbers : RCRA: waste_number U153 (Ignitable waste, Toxic waste)

14. Transport Information

DOT (US only)

Proper shipping name : Methyl Mercaptan

Class : 2.3

UN/ID No. : UN1064

Labeling : Poison Gas, Flammable Gas

Additional Info : Toxic-Inhalation Hazard Zone C

15. Regulatory Information

U.S. Federal Regulations

This material contains one or more of the following chemicals required under SARA Section 302/304 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), and/or require an OSHA process safety plan.

METHYL MERCAPTAN (74-93-1) : SARA 302: 500 lb TPQ
100 lb final RQ; 45.4 kg final RQ
CERCLA: 100 lb final RQ; 45.4 kg final RQ
TSCA 12b: Section 4, 1%
OSHA (safety): 5000 lb TQ

SARA 311/312

Acute: Yes
Chronic: No
Fire: Yes
Reactive: No
Pressure: Yes

U.S. State Regulations

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA	RI
METHYL MERCAPTAN	74-93-1	Yes	Yes	Yes	Yes	Yes	Yes

Not regulated under California Proposition 65.

16. Other Information

Prepared by : Specialty Gases of America, Inc.

For additional information, please visit our website at www.americangasgroup.com.