

Material Safety Data Sheet



Nonflammable Gas Mixture: Methyl Chloride / Nitrogen / Oxygen

Section 1. Chemical product and company identification

Product Name : Nonflammable Gas Mixture: Methyl Chloride / Nitrogen / Oxygen
Supplier : Ideal Gases, Inc.
14056 Fort St.
Southgate, MI 48195

(248) 663-2377
Product use : Synthetic/Analytical chemistry.
MSDS# : 007304
Date of Preparation/Revision : **6/8/2007.**
In case of emergency : 1-800-424-9300

Section 2. Hazards identification

Physical state : Gas.
Emergency overview : Warning!
CONTENTS UNDER PRESSURE.
CONTAINS MATERIAL WHICH CAUSES DAMAGE TO THE FOLLOWING ORGANS:
KIDNEYS, REPRODUCTIVE SYSTEM, LIVER, SKIN, CENTRAL NERVOUS SYSTEM.
MAY BE HARMFUL IF SWALLOWED.
POSSIBLE CANCER HAZARD
CONTAINS MATERIAL WHICH MAY CAUSE CANCER BASED ON ANIMAL DATA.
Do not ingest. Do not puncture or incinerate container. Wash thoroughly after handling.
Risk of cancer depends on duration and level of exposure.
Contact with rapidly expanding gases can cause frostbite.

Routes of entry :
Potential acute health effects

Eyes : No known significant effects or critical hazards.
Skin : No known significant effects or critical hazards.
Inhalation : Acts as a simple asphyxiant.
Ingestion : Ingestion is not a normal route of exposure for gases

Potential chronic health effects : **CARCINOGENIC EFFECTS** Classified + (Proven.) by NIOSH [Chloromethane].
Classified 3 (Possible for human.) by European Union [Chloromethane]. Classified A4
(Not classifiable for human or animal.) by ACGIH, 3 (Not classifiable for human.) by
IARC [Chloromethane].
MUTAGENIC EFFECTS Not available.
TERATOGENIC EFFECT : Not available.

Medical conditions aggravated by overexposure : Repeated exposure to a highly toxic material may produce general deterioration of health
by an accumulation in one or many human organs.

See toxicological Information (section 11)

Section 3. Composition, Information on Ingredients

Name

ACGIH TLV (United States, 5/2004). Skin
Notes: Substance identified by other
sources as a suspected or confirmed
human carcinogen. 1996 Adoption
Substances for which the TLV is higher
than the OSHA Permissible Exposure Limit
(PEL) and/or the NIOSH Recommended

Exposure Limit (REL). See CFR 58(124) :36338-33351, June 30, 1993, for revised OSHA PEL. Refers to Appendix A -- Carcinogens.

STEL: 207 mg/m³ 15 minute(s). Form: All forms

STEL: 100 ppm 15 minute(s). Form: All forms

TWA: 103 mg/m³ 8 hour(s). Form: All forms

TWA: 50 ppm 8 hour(s). Form: All forms

OSHA PEL Z2 (United States, 6/2002).

AMP: 300 ppm 5 minute(s). Form: All forms

CEIL: 200 ppm Form: All forms

TWA: 100 ppm 8 hour(s). Form: All forms

Section 4. First aid measures

No action shall be taken involving any personal risk or without suitable training. If fumes are still suspected to be present, the rescuer should wear an appropriate mask or a self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

- Eye contact** : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation occurs.
- Skin contact** : 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. Get medical attention.
- Frostbite** : Try to warm up the frozen tissues and seek medical attention.
- Inhalation** : If inhaled, remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.
- Ingestion** : Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.

Section 5. Fire fighting measures

- Flammability of the product** : Non-flammable.
- Auto-ignition temperature** : The lowest known value is 632.22°C (1170°F) (Chloromethane).
- Flash point** : The lowest known value is Closed cup: -45.56°C (-50°F). (Chloromethane)
- Products of combustion** : These products are carbon oxides (CO, CO₂), nitrogen oxides (NO, NO₂...), halogenated compounds, hydrogen chloride.
- Fire fighting media and instructions** : Use an extinguishing agent suitable for surrounding fires.

If involved in fire, shut off flow immediately if it can be done without risk. Apply water from a safe distance to cool container and protect surrounding area.
No specific hazard.
- Special protective equipment for fire-fighters** : Fire fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full facepiece operated in positive pressure mode.

Section 6. Accidental release measures

- Personal precautions** : Immediately contact emergency personnel. Keep unnecessary personnel away. Use suitable protective equipment (Section 8). Shut off gas supply if this can be done safely. Isolate area until gas has dispersed.
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 7. Handling and storage

- Handling** : Do not ingest. Do not puncture or incinerate container. Wash thoroughly after handling. High pressure gas. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.
- Storage** : Keep container tightly closed. Keep container in a cool, well-ventilated area. Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52 °C (125 °F).

Section 8. Exposure Controls, Personal Protection

- Engineering controls** : Use only with adequate ventilation. If user operations generate dust, fumes, vapor or mist, use process enclosures, local exhaust ventilation, or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
- Personal protection**
- Eyes** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.
- Skin** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
- The applicable standards are (US) 29 CFR 1910.134 and (Canada) Z94.4-93
- Hands** : Chemical-resistant, impervious gloves or gauntlets complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
- Personal protection in case of a large spill** : A self-contained breathing apparatus should be used to avoid inhalation of the product.
- Consult local authorities for acceptable exposure limits.**

Section 9. Physical and chemical properties

- Molecular weight** : Not applicable.
- Molecular formula** : Not applicable.
- Boiling/condensation point** : Not available.
- Melting/freezing point** : -97.76°C (-144°F) based on data for: Chloromethane. Weighted average: -210.84°C (-347.5°F)
- Critical temperature** : The lowest known value is -146.9°C (-232.4°F) (Nitrogen).
- Vapor density** : The highest known value is 1.8 (Air = 1) (Chloromethane). Weighted average: 1.01 (Air = 1)
- Specific Volume (ft³/lb)** : Not applicable.
- Gas Density (lb/ft³)** : Weighted average: 0.07

Section 10. Stability and reactivity

- Stability and reactivity** : The product is stable.
- Incompatibility with various substances** : Not considered to be reactive according to our database.
- Hazardous decomposition products** : These products are halogenated compounds, hydrogen chloride.

Section 11. Toxicological information

<u>Ingredient name</u>	<u>Test</u>	<u>Result</u>	<u>Route</u>	<u>Species</u>
Methyl Chloride (R40)	LD50	1800 mg/kg	Oral	Rat
	LC50	5300 mg/m ³ (4 hour(s))	Inhalation	Rat
	LC50	2200 ppm (6 hour(s))	Inhalation	Mouse

Chronic effects on humans : **CARCINOGENIC EFFECTS** Classified + (Proven.) by NIOSH [Chloromethane]. Classified 3 (Possible for human.) by European Union [Chloromethane]. Classified A4 (Not classifiable for human or animal.) by ACGIH, 3 (Not classifiable for human.) by IARC [Chloromethane].
Contains material which causes damage to the following organs: kidneys, the reproductive system, liver, skin, central nervous system (CNS).

Other toxic effects on humans : No specific information is available in our database regarding the other toxic effects of this material for humans.

Specific effects

Carcinogenic effects : Contains material which may cause cancer based on animal data. Risk of cancer depends on duration and level of exposure.

Mutagenic effects : No known significant effects or critical hazards.

Reproduction toxicity : No known significant effects or critical hazards.

Section 12. Ecological information

<u>Ingredient name</u>	<u>Species</u>	<u>Period</u>	<u>Result</u>
Methyl Chloride (R40)	Lepomis macrochirus (LC50)	96 hour(s)	550 mg/l

Products of degradation : These products are carbon oxides (CO, CO₂) and water, nitrogen oxides (NO, NO₂...), halogenated compounds.

Toxicity of the products of biodegradation : The products of degradation are as toxic as the product itself.

Environmental fate : Not available.



Environmental hazards : Practically non-toxic to aquatic organisms.


Toxicity to the environment : Not available.

Section 13. Disposal considerations

Product removed from the cylinder must be disposed of in accordance with appropriate Federal, State, local regulation. Return cylinders with residual product to Airgas, Inc. Do not dispose of locally.

Section 14. Transport information

<u>Regulatory information</u>	<u>UN number</u>	<u>Proper shipping name</u>	<u>Class</u>	<u>Packing group</u>	<u>Label</u>	<u>Additional information</u>
DOT Classification	UN1956	COMPRESSED GAS, N.O.S.	2.2	Not applicable (gas).		-
TDG Classification	UN1956	COMPRESSED GAS, N.O.S.	2.2	Not applicable (gas).		Explosive Limit and Limited Quantity Index 0.125 Passenger Carrying Road or Rail

Nonflammable Gas Mixture: Methyl Chloride / Nitrogen / Oxygen						
						Index 75
Mexico Classification	UN1956	COMPRESSED GAS, N.O.S.	2.2	Not applicable (gas).		-

Section 15. Regulatory information

United States

- U.S. Federal regulations** : TSCA 8(b) inventory: Oxygen; Nitrogen; Chloromethane
 SARA 302/304/311/312 extremely hazardous substances: No products were found.
 SARA 302/304 emergency planning and notification: No products were found.
 SARA 302/304/311/312 hazardous chemicals: Oxygen; Nitrogen; Chloromethane
 SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Oxygen: Fire hazard, Sudden Release of Pressure, Delayed (Chronic) Health Hazard; Nitrogen: Sudden Release of Pressure; Chloromethane: Fire hazard, Sudden Release of Pressure, Immediate (Acute) Health Hazard, Delayed (Chronic) Health Hazard
 Clean Water Act (CWA) 307: Chloromethane
 Clean Water Act (CWA) 311: No products were found.
 Clean air act (CAA) 112 accidental release prevention: Chloromethane
 Clean air act (CAA) 112 regulated flammable substances: No products were found.
 Clean air act (CAA) 112 regulated toxic substances: Chloromethane

SARA 313

	<u>Product name</u>	<u>CAS number</u>	<u>Concentration</u>
Form R - Reporting requirements	: Methyl Chloride (R40)	74-87-3	0.005 - 1
Supplier notification	: Methyl Chloride (R40)	74-87-3	0.005 - 1

SARA 313 notifications must not be detached from the MSDS and any copying and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.

- State regulations** : Pennsylvania RTK: Oxygen: (generic environmental hazard); Nitrogen: (generic environmental hazard); Chloromethane: (environmental hazard, generic environmental hazard)
 Massachusetts RTK: Oxygen; Nitrogen; Chloromethane
 New Jersey: Oxygen; Nitrogen; Chloromethane

- California prop. 65** : **WARNING:** This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

<u>Ingredient name</u>	<u>Cancer</u>	<u>Reproductive</u>	<u>No significant risk level</u>	<u>Maximum acceptable dosage level</u>
Methyl Chloride (R40)	No.	Yes.	No.	No.

Canada

- WHMIS (Canada)** : Class A: Compressed gas.
 Class D-2A: Material causing other toxic effects (VERY TOXIC).
 CEPA DSL: Oxygen; Nitrogen; Chloromethane

Section 16. Other information

United States

- Label Requirements** : CONTENTS UNDER PRESSURE.
 CONTAINS MATERIAL WHICH CAUSES DAMAGE TO THE FOLLOWING ORGANS: KIDNEYS, REPRODUCTIVE SYSTEM, LIVER, SKIN, CENTRAL NERVOUS SYSTEM. MAY BE HARMFUL IF SWALLOWED.
 POSSIBLE CANCER HAZARD
 CONTAINS MATERIAL WHICH MAY CAUSE CANCER BASED ON ANIMAL DATA.

Canada

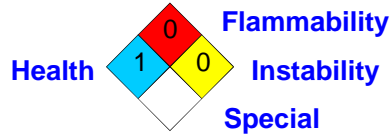
- Label Requirements** : Class A: Compressed gas.
 Class D-2A: Material causing other toxic effects (VERY TOXIC).

Nonflammable Gas Mixture: Methyl Chloride / Nitrogen / Oxygen

Hazardous Material Information System (U.S.A.) :

Health	*	1
Fire hazard		0
Reactivity		0
Personal protection		C

National Fire Protection Association (U.S.A.) :



Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.