



Material Safety Data Sheet

1. Product and Company Identification

Product name : **Formaldehyde Gas**

Chemical formula : H-C-H-O

Synonyms : Formaldehyde; Methanol; Oxomethane; Oxymethylene; Methylene Oxide; Formic Aldehyde; Methyl Aldehyde; Formalin (Formulation); Methaldehyde; CH₂O

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
Formaldehyde Gas	50-00-0	100%

3. Hazards Identification

Emergency Overview

Potentially fatal if inhaled, harmful on contact with the skin or swallowed.
May cause respiratory tract burns, skin burns, eye burns, allergic reactions, cancer hazard (in humans).
Flammable gas. May cause flash fire. Flash back hazard. May polymerize. Containers may rupture or explode.

Potential Health Effects

Inhalation : Allergic reactions, burns, death. May cause cancer in long term exposure.
Eye contact : Burns.
Skin contact : Allergic reactions, burns.
Ingestion : Ingestion of a gas is unlikely.
Chronic Health Hazard : None known.

4. First Aid Measures

General advice : None.

Eye contact : Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

Skin contact : Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention, if needed. Thoroughly clean and dry contaminated clothing before reuse. Destroy contaminated shoes.

Ingestion : If a 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.

5. Fire-Fighting Measures

Suitable extinguishing media : Regular dry chemical, carbon dioxide.
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. Containers may rupture or explode if exposed to heat.
Fire fighting : Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. For fires in cargo or storage area: Cool containers with water from unmanned hose holder or monitor nozzles until well after the fire is out. If this is impossible then take the following precautions: Keep unnecessary people away, isolate hazard area and deny entry. Let the fire burn. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. For tank, rail car or tank truck: Evacuation radius: 800 meters (1/2 mile). Do not attempt to extinguish fire unless flow of material can be stopped first. Flood with fine water spray. Cool containers with water. Apply water from a protected location or from a safe distance. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas. Stop flow of gas.

6. Accidental Release Measures

Air Release : Reduce vapors with water spray. Stay upwind and keep out of low areas.
Water Release : Subject to California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65). Keep out of water supplies and sewers.
Occupational spill/release : Avoid heat, flames, sparks and other sources of ignition. Stop leak if possible without personal risk. Reduce vapors with water spray. Keep unnecessary people away, isolate hazard area and deny entry. Remove sources of ignition. Ventilate closed space before entering. 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

Subject to handling regulations: U.S. OSHA 29 CFR 1910.119.

Storage

Store and handle in accordance with all current regulations and standards. Protect from physical damage. Use diking sufficient to contain total contents plus 10%. Subject to storage regulations: U.S. OSHA 29 CFR 1910.101. 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 355.30 Part B). Keep separated from incompatible substances.

8. Exposure Controls / Personal Protection

Exposure limits

ACGIH : 0.3 ppm Ceiling

OSHA (final)	:	2 ppm STEL (see 29 CFR 1910.1048) 0.75 ppm TWA
OSHA (vacated)	:	10 ppm STEL unless specified in 1910.1048 30 minute 3 ppm TWA unless specified in 1910.1048 5 ppm Ceiling unless specified in 1910.1048
NIOSH	:	0.016 ppm TWA 0.1 ppm Ceiling 15 min

IDLH

20 ppm

Engineering measures/Ventilation

Ventilation equipment should be explosion-proof if explosive concentrations of material are present. Provide local exhaust or process enclosure ventilation system. 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. OSHA Standard: Respirator selection should comply with 29 CFR 1910.134, 29 CFR 1910.1048, and the final rule published in the Federal Register on August 24, 2006. NIOSH recommendations: At any detectable concentration – 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 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 a 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 canister providing protection against the compound of concern. Any appropriate escape-type, self-contained breathing apparatus.
Hand protection	:	Wear appropriate chemical resistant gloves. OSHA REGULATED SUBSTANCES: U.S. OSHA 29 CFR 1910.1048.
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	:	Wear appropriate chemical resistant clothing.

9. Physical and Chemical Properties

Form	:	Gas.
Color	:	Colorless.
Odor	:	Pungent odor.
Molecular weight	:	30.03
Vapor pressure	:	400 mmHg @ -33°C
Vapor density	:	1.07 (air = 1)
Specific gravity	:	0.815 @ -20°C (water = 1)
Boiling point	:	-6°F (-21°C)
Melting point	:	-134° F (-92°C)
Water solubility	:	55%
Solvent solubility	:	Soluble: alcohol, ether, acetone, benzene, chloroform

10. Stability and Reactivity

Stability	: Stable at normal temperatures and pressure.
Conditions to avoid	: Avoid heat, flames, sparks and other sources of ignition. Minimize contact with material. Containers may rupture or explode if exposed to heat.
Materials to avoid	: Acids, bases, reducing agents, metals, metal salts, halogens, combustible materials, peroxides, oxidizing materials.
Hazardous decomposition products	: Thermal decomposition products: oxides of carbon.

11. Toxicological Information

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

FORMALDEHYDE : Inhalation LC50 Rat: 0.578 mg/L/4H; Oral LD50 Rat: 500 mg/kg
GAS (50-00-0)

Acute Toxicity Level

FORMALDEHYDE : Highly toxic: inhalation
GAS (50-00-0) Toxic: dermal absorption, ingestion

Component Carcinogenicity

ACGIH : A2 – Suspected Human Carcinogen
IARC : Monograph 88 [2006]; Monograph 62 [1995]; Supplement 7 [1987] (Group 1 (carcinogenic to humans))
DFG : Category 4 (no significant contribution to human cancer)
Present
Reasonably Anticipated To Be A Human Carcinogen

Local Effects

FORMALDEHYDE : Irritant: skin, eye
GAS (50-00-0) Corrosive: inhalation, skin, eye, ingestion

Target Organs

FORMALDEHYDE : Immune system (sensitizer)
GAS (50-00-0)

Medical Conditions Aggravated by Exposure

Respiratory disorders, skin disorders and allergies.

12. Ecological Information

Aquatic Toxicity

FORMALDEHYDE : Fish: 96 Hr LC50 Pimephales promales: 22.6-25.7 mg/L [flow-through]; 96 Hr
GAS (50-00-0) LC50 Lepomis macrochirus: 1510 µg/L [static]; 96 Hr LC50 Brachydanio rerio:
41 mg/L [static]; 96 Hr LC50 Oncorhynchus mykiss: 100-136 mg/L [static]; 96 Hr
LC50 Pimephales promelas: 23.2-29.7 mg/L [static]
Invertebrate: 48 Hr LC50 Daphnia magna: 2 mg/L; 48 Hr EC50 Daphnia magna:
11.3-18 mg/L [static]

13. Disposal Considerations

Waste from residues : Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste
/ unused products Number(s): U122.
Contaminated : Return cylinder to supplier.
packaging

14. Transport Information

DOT (US only)

Proper shipping name : Compressed gas, toxic, flammable, corrosive, n.o.s. (Contains: FORMALDEHYDE GAS)
Class : 2.3
UN/ID No. : UN3305
Labeling : Poison Gas, Flammable Gas, Corrosive

15. Regulatory Information

U.S. Federal Regulations

This material contains one or more of the following chemicals required to be identified 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.

FORMALDEHYDE GAS (50-00-0)

SARA 302 : 500 lb TPQ
100 lb final RQ; 45.4 kg final RQ
SARA 313 : 1.0% de minimis concentration
CERCLA : 100 lb final RQ; 45.4 kg final RQ
OSHA (safety) : 1000 lb TQ

SARA 311/312

Acute: Yes
Chronic: Yes
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
FORMALDEHYDE GAS	50-00-0	Yes	Yes	Yes	Yes	Yes	Yes

The following statement(s) are provided under the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):

WARNING! This product contains a chemical known to the state of California to cause cancer.

16. Other Information

Prepared by : Specialty Gases of America, Inc.
For additional information, please visit our website at www.americangasgroup.com.