

8.2 Personal Protection

Where formaldehyde gas concentrations can exceed acceptable criteria, use NIOSH (42 CFR Part 84) approved full-facepiece respiratory protection equipment. Respirators should be selected based on the concentration of formaldehyde in air in accordance with the OSHA Formaldehyde Standard Respiratory Protection requirements at 29CFR 1910.1048y, and the OSHA Respiratory Protection Standard at 29CFR 1910.134 or other applicable standards or guidelines, including ANSI standards regarding respiratory protection. A full-facepiece respirator with cartridges or canisters specifically approved for formaldehyde may be used for exposure levels up to 7.5 ppm (10 times the PEL). Chemical safety goggles must be worn if there is a possibility of contact with liquid formaldehyde or excessive gas-phase exposures. A full-facepiece respirator complies with this requirement. Wear protective gloves as required to prevent skin contact. Protective gloves must be worn when handling formaldehyde solutions of 1% or higher. Consult your glove manufacturer for specific information on permeation, degradation and breakthrough data to ensure proper selection. Based on available information, butyl, nitrile and Viton appear to be quite impervious to various strengths of formaldehyde solutions. Other glove materials may be equally suitable depending on composition, thickness and use conditions. Where high concentrations of formaldehyde may be present, such as in an emergency, full body protection should be worn. Other protective equipment that must be available when handling formaldehyde solutions of 1% or higher include eye wash fountains and safety showers. Reusable protective clothing should be cleaned and ventilated after any formaldehyde contamination. See the OSHA Formaldehyde Standard requirements at 29CFR 1910.1048(h) Protective Equipment and Clothing and OSHA 29CFR 1910.1048(i) Hygiene Protection for other specific protective measures based on the form of formaldehyde, the conditions of use and the hazards to be prevented.

8.3 Exposure Guidelines

50-00-0		Formaldehyde		A2 - Suspected Human Carcinogen; SEN
ACGIH TLV	Ceiling	0.3 ppm	0.37 mg/m ³	
OSHA PEL	8-hr TWA	0.75 ppm	0.9 mg/m ³	
	STEL (15 min)	2 ppm	2.5 mg/m ³	
67-56-1		Methanol		Skin
ACGIH TLV	8-hr TWA	200 ppm	262 mg/m ³	
OSHA PEL	STEL (15 min)	250 ppm	328 mg/m ³	
	8-hr TWA	200 ppm	260 mg/m ³	
	Remanded TWA	200 ppm	260 mg/m ³	
	Remanded STEL	250 ppm	310 mg/m ³	
				Skin; 1989 PEL remanded, but in effect in some states

9. Physical and Chemical Properties

Appearance	Clear, colorless liquid
Odor	Pungent
Odor threshold	Not available
Specific gravity	Approx. 1.08
pH	3.0 - 4.5
Solubility in water	Infinite
Octanol/water partition coefficient	Pow 0.35
Vapor pressure	Approx. 40 mm Hg @25 °C (77 °F)
Vapor density	Approx. 1
Evaporation rate	Less than 1 (Butyl Acetate = 1)
Boiling point, 760 mm Hg	Approx. 100 °C (212 °F)

10. Stability and Reactivity

Normally stable, but may further react at high temperatures to form methanol, formic acid or methylals. At low temperatures will self-polymerize to form paraformaldehyde.

Incompatibilities:

Reacts with many compounds. Reaction with phenol, strong acids or alkalis may be violent. Reaction with hydrochloric acid may form bis-chloromethyl ether, an OSHA regulated carcinogen.

Decomposition products may include:

CO, CO₂.

Hazardous polymerization:

Will not occur.

11. Toxicological Information

See Section 3 Hazards Identification information.

50-00-0 Formaldehyde

LC50: rat=0.59 mg/l (Sax)

LD50: Oral-rat= 800 mg/kg (Merck); Skin-rabbit= 270 mg/kg (Sax)

67-56-1 Methanol

LC50: rat=64,000 mg/l/4 h (Sax)

LD50: Oral-rat= 5,628 mg/kg (Sax); Skin-rabbit= 20,000 mg/kg (Sax)

12. Ecological Information

Formaldehyde is highly toxic to algae, protozoa and other unicellular organisms and slightly toxic to fish. In the atmosphere the material is rapidly degraded by photolysis and photooxidation. Formaldehyde is mobile in the soil. In water or soil, formaldehyde is biodegraded in a few days. Experiments performed on a variety of fish and shrimp show no bioconcentration of formaldehyde.

Ecotoxicity:

Algae(scenedesmus): toxic: 0.3-0.5 mg/l

Arthropoda(daphnia): toxic: 2 mg/l

Fish (guppies): TLm = 50-200 mg/l

Environmental Fate:

BOD5 = 60% of ThOD = 0.6-1.07 standard dilution at <260 mg/l

Octanol/Water Partition Coefficient = 0.35 (LKOW)

13. Disposal Considerations

Recover free liquid. Absorb residue and dispose of according to local, state/provincial, and federal requirements. Empty container: May contain explosive vapors. DO NOT cut, puncture or weld on or nearby.

14. Transport Information**14.1 U.S. Department of Transportation (DOT)**

The data provided in this section is for information only and may not be specific to your package size. You will need to apply the appropriate regulations to properly classify your shipment for transportation.

Proper shipping name	FORMALDEHYDE SOLUTION
UN/NA number	2209
Class	8
Packing group	III
Label	8
RQ Ingredients	

14.2 Canadian Transportation of Dangerous Goods (TDG)

Proper shipping name	FORMALDEHYDE SOLUTION
UN number:	2209
Class	Class 8
Packing group	III
Label	8

15. Regulatory Information (Selected Regulations)

15.1 U.S. Federal Regulations

OSHA Hazards Communication Standard 29CFR1910.1200

This material is a "health hazard" and/or a "physical hazard" as determined when reviewed according to the requirements of the Occupational Safety and Health Administration 29 CFR Part 1910.1200 "Hazard Communication" Standard.

SARA Title III: Section 311/312

Immediate health hazard
Delayed health hazard
Fire hazard

SARA Title III: Section 313 and 40 CFR Part 372

This product contains the following toxic chemical(s) subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986, and Subpart C-Supplier Notification Requirement of 40 CFR Part 372.

Methanol	67-56-1	11.98%
Formaldehyde	50-00-0	37.00%

TSCA Section 8(b) Inventory

All reportable chemical substances are listed on the TSCA Inventory. We rely on certifications of compliance from our suppliers for chemical substances not manufactured by us.

15.2 Canadian Regulations

Workplace Hazardous Materials Information System (WHMIS)

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This product has been classified in accordance with the hazard criteria of the Controlled Products Regulation (CPR) and the MSDS contains all the information required by the CPR.

Class B3
Class D1A
Class D1B
Class D2A
Class D2B
Class E

Canadian Environmental Protection Act (CEPA)

All reportable chemical substances are listed on the Domestic Substances List (DSL) or otherwise comply with CEPA new substance notification requirements.

National Pollutant Release Inventory (NPRI)

This product contains the following chemical(s) subject to the reporting requirements of the Canadian Environmental Protection Act (CEPA) subsection 16(1), National Pollutant Release Inventory.

Methanol	67-56-1	11.98%
Formaldehyde	50-00-0	37.00%

16. Other Information

User's Responsibility

The OSHA Hazard Communication Standard 29CFR 1910.1200 and the Workplace Hazardous Materials Information System (WHMIS) require that the information contained on these sheets be made available to your workers. Educate and train your workers regarding OSHA and WHMIS precautions. Instruct your workers to handle this product properly. Consult with appropriate experts to guard against hazards associated with use of this product and its ingredients.

Disclaimer

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