SIGMA-ALDRICH

Material Safety Data Sheet

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Section 1 - Product and Company Information

Product Name	Formaldehyde solution, 37%
Product Number	F1635
Brand	Sigma-Aldrich
Company	Sigma-Aldrich
Address	3050 Spruce Street
City, State, Zip, Country	SAINT LOUIS, MO 63103 US
Technical Phone:	800-325-5832
Emergency Phone:	314-776-6555
Fax:	800-325-5052

Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313	EC no	Annex I Index Number
FORMALDEHYDE SOLUTION >35% (10-15% MEOH)	None	Yes		

Ingredient Name	CAS #	Percent	SARA 313
FORMALDEHYDE	50-00-0	>= 35.000 %	Yes
METHANOL	67-56-1	>= 8.000 % < 15.000 %	Yes
WATER	7732-18-5	<= 50.000 %	No

Formula CH2O
Synonyms

Section 3 - Hazards Identification

Emergency Overview
Toxic.
Toxic by inhalation, in contact with skin and if swallowed.Causes burns. Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.Limited evidence of a carcinogenic effect.May cause sensitization by skin contact. May cause heritable genetic damage.
Readily absorbed through skin. Lachrymator. Contains formaldehyde.Target organ(s): Kidneys. Eyes. Combustible. Confirmed Carcinogen (US). Calif. Prop. 65 carcinogen.

HMIS Rating
Health: 3* Flammability: 2 Reactivity: 2

NFPA Rating
Health: 3 Flammability: 2 Reactivity: 2

*additional chronic hazards present.

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

Oral Exposure
If swallowed, wash out mouth with water provided person is conscious. Call a physician immediatelyDo not induce vomiting.

Inhalation Exposure
If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

Dermal Exposure
In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

Eye Exposure
In case of contact with eyes, flush with copious amounts of watefor at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

Section 5 - Fire Fighting Measures

Flash Point:	133 °F	56 °C
Explosion Limits:	**Lower:** 7 %	**Upper:** 70 %
Autoignition Temp:	420 °C	

Extinguishing Media
Suitable
Carbon dioxide, dry chemical powder, or appropriate foam.

Firefighting
Protective Equipment
Wear self-contained breathing apparatus and protective clothing to prevent contactwith skin and eyes.
Specific Hazard(s)
Combustible liquid. Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

Procedure to be Followed in Case of Leak or Spill
Evacuate area.

Procedure(s) of Personal Precaution(s)
Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

Methods for Cleaning Up
Cover with dry lime or soda ash, pick up, keep in a closed container, and hold for waste disposalVentilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

Handling
User Exposure
Do not breathe vapor. Do not get in eyes, on skin, on clothing.Avoid prolonged or repeated exposure.

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Storage

Suitable

Keep tightly closed. Keep away from heat, sparks, and open flame.Store in a cool dry place.

Section 8 - Exposure Controls / PPE

Engineering Controls

Use only in a chemical fume hood.Safety shower and eye bath.

Personal Protective Equipment

Respiratory

Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).Where risk assessment shows air-purifying respirators are appropriate use a full face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full face supplied air respirator.

Hand

Compatible chemical-resistant gloves.

Eye

Chemical safety goggles.

Other

Faceshield (8-inch minimum).

General Hygiene Measures

Wash contaminated clothing before reuse.Discard contaminated shoes.Wash thoroughly after handling.

Exposure Limits

	Source	Type	Value
Remarks: FORMALDEHYDE	ACGIH	TLV	0.3 ppm
	OSHA	PEL	0.9 mg/m3 0.75 ppm
Remarks: FORMALDEHYDE	ACGIH	TLV	262 mg/m3 200 ppm
Remarks: METHANOL	OSHA	PEL	260 mg/m3 200 ppm
Remarks: METHANOL			

Section 9 - Physical/Chemical Properties

Appearance

Physical State	Color	Odor
Clear liquid	Colorless	Pungent

Molecular Weight	30.03 AMU	
pH	N/A	
BP/BP Range	100 °C	
MP/MP Range	N/A	
Freezing Point	N/A	
Vapor Pressure	40 mmHg	39 °C
Vapor Density	1 g/l	
Saturated Vapor Conc.	N/A	
SG/Density	1.09 g/cm3	
Bulk Density	N/A	
Odor Threshold	N/A	
Volatile%	N/A	
VOC Content	N/A	
Water Content	N/A	

Solvent Content	N/A	
Evaporation Rate	1	
Viscosity	N/A	
Partition Coefficient	Log Kow: 0.35	
Decomposition Temp.	N/A	
Flash Point °F	133 °F	Method: closed cup
Flash Point °C	56 °C	Method: closed cup
Explosion Limits	Lower: 7 % Upper: 70 %	
Flammability	N/A	
Autoignition Temp	420 °C	
Refractive Index	1.3765	

Solubility

Solubility in Water: Complete

N/A = not available

Section 10 - Stability and Reactivity

Stability

Stable

Stable.

Materials to Avoid

Strong oxidizing agents, Incompatible with: aniline, phenol, isocyanates, anhydrides, Strong acids, Strong bases, Amines, Peroxides, Acid chlorides, Acid anhydrides, Alkali metals, Reducing agents

Hazardous Decomposition Products

Hazardous Decomposition Products

Carbon monoxide, Carbon dioxide

Hazardous Polymerization

Hazardous Polymerization

Will not occur.

Section 11 - Toxicological Information

Route of Exposure

Skin Contact

Causes burns.

Skin Absorption

Toxic if absorbed through skin. Readily absorbed through skin.

Eye Contact

Causes burns.

Inhalation

Toxic if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

Ingestion

Toxic if swallowed.

Sensitization

Skin

May cause allergic skin reaction.

Target Organ(s) or System(s)

Eyes. Kidneys. Liver. Heart.

Signs and Symptoms of Exposure

Inhalation may result in spasm, inflammation and edema othe larynxand bronchi, chemical pneumonitis, and pulmonary edema. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting. Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skinExposure can cause: Coughing, chest pains, difficulty in breathing.Gastrointestinal disturbances. May cause convulsions.To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

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RTECS Number: N/A

Chronic Exposure- Carcinogen
Result: This is or contains a component that has been reported to be carcinogenic based on its IARC, OSHA, ACGIH, NTP, or EPA classification.

OSHA Carcinogen List
Rating
Known to be carcinogenic.

IARC Carcinogen List
Rating
Group 1

ACGIH Carcinogen List
Rating
A2

IRIS/EPA Carcinogen List
Rating
Group B1

Chronic Exposure- Teratogen
Result:Laboratory experiments have shown teratogenic effects.

Chronic Exposure- Mutagen
Result: Laboratory experiments have shown mutagenic effects.

Chronic Exposure- Reproductive Hazard
Result: Overexposure may cause reproductive disorder(s) based on testswith laboratory animals.

Section 12 - Ecological Information

N/A

Physical Properties Affecting Ecotoxicity
BOD: **BOD after 5 Days:** 60 %

Section 13 - Disposal Considerations

Appropriate Method of Disposal of Substance or Preparation
Contact a licensed professional waste disposal service to dispose of this material.
Observe all federal, state, and local environmental regulations.
This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber

Section 14 - Transport Information

DOT
Proper Shipping Name: Formaldehyde, solutions, flammable
UN#: 1198
Class: 3
Packing Group: Packing Group III
Hazard Label: Flammable liquid
Hazard Label: Corrosive
PIH: Not PIH

IATA
Proper Shipping Name: Formaldehyde solution, flammable
IATA UN Number: 1198
Hazard Class: 3
Packing Group: III

Section 15 - Regulatory Information

EU Additional Classification
Symbol of Danger: T
Indication of Danger
Toxic.
Risk Statements **R:** 23/24/25 34 39/23/24/25 40 43
Toxic by inhalation, in contact with skin and if swallowed.Causes burns. Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.Limited evidence of a carcinogenic effect.May cause sensitization by skin contact.
Safety Statements **S:** 26 36/37/39 45 51
In case of contact with eyes, rinse immediately with plenty of water and seek medical adviceWear suitable protective clothing, gloves, and eye/face protection.In case of accident or if you feel unwell, seek medical advice immediately (show the labelwhere possible). Use only in well ventilated areas.

US Classification and Label Text
Indication of Danger
Toxic.
Risk Statements
Toxic by inhalation, in contact with skin and if swallowed.Causes burns. Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.Limited evidence of a carcinogenic effect.May cause sensitization by skin contact. May cause heritable genetic damage.
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US Statements
Readily absorbed through skin.Lachrymator. Contains formaldehyde.Target organ(s): Kidneys. Eyes. Combustible. Confirmed Carcinogen (US). Calif. Prop. 65 carcinogen.

United States Regulatory Information
SARA Listed: Yes
Notes: This product is or contains a component that is subject to SARA313 reporting requirements.

United States- State Regulatory Information
California Prop- 65
This product is or contains chemical(s) known to the state of California to cause cancer.

Canada Regulatory Information
WHMIS Classification
This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.
DSL: No
NDSL: No

Section 16 - Other Information

Disclaimer
For R&D use only. Not for drug, household or other uses.

Warranty
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present stateof our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. SigmAldrich Inc., shall not be held liable for any damage resulting from handling or fom contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright2009 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

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