



SIGMA-ALDRICH

Material Safety Data Sheet

Date Printed: 06/26/2008
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Version 1.130

Section 1 - Product and Company Information

Product Name: Formaldehyde, 37 wt. % solution in water
Product Number: F15587
Brand: Aldrich Chemical
Company: Sigma-Aldrich
Address: 3050 Spruce Street, SAINT LOUIS, MO 63103 US
Technical Phone: 800-325-5832
Fax: 800-325-5052
Emergency Phone: 314-776-6555

Section 2 - Composition/Information on Ingredient

Table with columns: Substance Name, CAS #, SARA 313, EC no, Annex I Index Number. Rows include FORMALDEHYDE SOLUTION >35% (10:15% MEOH), METHANOL, WATER, and Formula Synonyms (CH2O).

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 immediately. Do 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 water for 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 contact with 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 disposal. Ventilate 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.

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 fullface 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 fullface 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

| Remarks | Source | Type | Value |
|--------------|--------|------|--------------------------------|
| FORMALDEHYDE | ACGIH | TLV | 0.3 ppm |
| FORMALDEHYDE | OSHA | PEL | 0.9 mg/m ³ 0.75 ppm |
| FORMALDEHYDE | ACGIH | TLV | 262 mg/m ³ 200 ppm |
| METHANOL | OSHA | PEL | 260 mg/m ³ 200 ppm |
| 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/cm ³ | | |
| 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 |
| Flash Point °C | 56 °C |

Method: closed cup
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 of the larynx and 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 skin. Exposure 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.

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 tests with 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

Aldrich Chemical - F15587

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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 advice. Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where 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.

Safety Statements

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Use only in well ventilated areas.

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 state of 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. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2008 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

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