

Formaldehyde, 37% Solution

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Formaldehyde, 37% Solution

Synonyms/Generic Names: Formalin

SDS Number: 292.00

Product Use: For Educational Use Only

Manufacturer: Columbus Chemical Industries, Inc.
N4335 Temkin Rd.
Columbus, WI. 53925

For More Information Contact: Ward's Science
5100 West Henrietta Rd.
PO Box 92912-9012
Rochester, NY 14692
(800) 962-2660 (Monday-Friday 7:30-7:00 Eastern Time)

In Case of Emergency Call: CHEMTREC - 800-424-9300 or 703-527-3887 (24 Hours/Day, 7 Days/Week)

2. HAZARDS IDENTIFICATION

OSHA Hazards: Flammable liquid, Skin sensitizer, Carcinogen, Target organ effect, Toxic by inhalation, Toxic by ingestion, Toxic by skin absorption, Corrosive

Target Organs: Eyes, Kidney, Liver, Heart, Central nervous system

Signal Words: Danger

Pictograms:



GHS Classification:

Flammable liquids	Category 3
Acute toxicity, Oral	Category 3
Acute Toxicity, Inhalation	Category 3
Acute toxicity, Dermal	Category 3
Skin irritation	Category 2
Serious eye damage	Category 1
Respiratory sensitizer	Category 1
Skin sensitization	Category 1
Carcinogenicity	Category 2
Acute aquatic toxicity	Category 3
Specific target organ toxicity – single exposure	Category 1

GHS Label Elements, including precautionary statements:**Hazard Statements:**

H226	Flammable liquid and vapor.
H301+H311	Toxic if swallowed or in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H331	Toxic if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H351	Suspected of causing cancer.
H370	Causes damage to organs.
H402	Harmful to aquatic life.

Precautionary Statements:

P260	Do not breathe dust/mist/gas/vapors/spray/fume.
P280	Wear protective gloves/eye protection/face protection.
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do so. Continue rinsing.
P307+P311	IF exposed: Call a POISON CENTER or doctor/physician.

Potential Health Effects

Eyes	Causes eye burns.
Inhalation	Toxic if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
Skin	Toxic if absorbed through skin.
Ingestion	Toxic if swallowed.

NFPA Ratings

Health	3
Flammability	2
Reactivity	2
Specific hazard	Not Available

HMIS Ratings

Health	3
Fire	2
Reactivity	2
Personal	H

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	Weight %	CAS #	EINECS# / ELINCS#	Formula	Molecular Weight
Formaldehyde	30-40	50-00-0	200-001-8	CH ₂ O	30.03 g/mol
Methyl Alcohol	10-20	67-56-1	200-659-6	CH ₄ O	32.04 g/mol
Water	Balance	7732-18-5	231-791-2	H ₂ O	18.01 g/mol

4. FIRST-AID MEASURES

Eyes	In case of eye contact, rinse with plenty of water and seek medical attention immediately.
Inhalation	Move casualty to fresh air and keep at rest. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention immediately.
Skin	Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and wash using soap. Get medical attention immediately.
Ingestion	Do Not Induce Vomiting! Never give anything by mouth to an unconscious person. If conscious, wash out mouth with water. Get medical attention immediately.

5. FIREFIGHTING MEASURES

Suitable (and unsuitable) extinguishing media	For small (incipient fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.
Special protective equipment and precautions for firefighters	Wear self-contained breathing apparatus and full protective gear for firefighting.
Specific hazards arising from the chemical	Vapor exposed to heat or flame may be explosive. Vapor may travel considerable distances and flash back. May emit acrid smoke and irritating fumes. May burn with neat invisible flame. Emits toxic fumes (carbon oxides) under fire conditions. (see also Stability and Reactivity Section)

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	See section 8 for recommendations on the use of personal protective equipment. Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.
Environmental precautions	Prevent spillage from entering drains. Any release to the environment may be subject to a federal/national or local reporting requirements.
Methods and materials for containment and cleaning up	Absorb spill with inert absorbent material. Keep in suitable, closed containers for disposal. Clean surfaces thoroughly with water to remove residual contamination. Dispose of all waste and cleanup materials in accordance with regulations.

7. HANDLING AND STORAGE

Precautions for safe handling

See section 8 for recommendations on the use of personal protective equipment. Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Keep away from sources of ignition – No smoking. Take measures to prevent the buildup of electrostatic charge.

Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well ventilated place. Ground all containers. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Component	Exposure Limits	Basis	Entity
Formaldehyde	0.3 ppm 0.37 mg/m ³	CEIL	ACGIH
	0.75 ppm	PEL	OSHA
	2 ppm	STEL	OSHA
	0.016 ppm	REL	NIOSH
Methyl Alcohol	0.1 ppm	CEIL	NIOSH
	200 ppm 262 mg/m ³	TLV	ACGIH
	250 ppm 328 mg/m ³	STEL	ACGIH
	200 ppm 260 mg/m ³	PEL	OSHA
	200 ppm 260 mg/m ³	REL	NIOSH
	250 ppm 325 mg/m ³	STEL	NIOSH

TWA: Time Weighted Average over 8 hours of work.

TLV: Threshold Limit Value over 8 hours of work.

REL: Recommended Exposure Limit

PEL: Permissible Exposure Limit

STEL: Short Term Exposure Limit during x minutes.

IDLH: Immediately Dangerous to Life or Health

WEEL: Workplace Environmental Exposure Levels

CEIL: Ceiling

Personal Protection

Eyes	Tightly fitting safety goggles. Face shield (8-inch minimum).
Inhalation	Provide local exhaust, preferably mechanical. If exposure levels are excessive, use an approved respirator.
Skin	Complete suit protecting against chemicals. Flame retardant antistatic protective clothing. Handle with gloves.
Other	Not Available

Other Recommendations

Provide eyewash stations, quick-drench showers and washing facilities accessible to areas of use and handling. Have supplies and equipment for neutralization and running water available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance (physical state, color, etc.)	Clear, colorless liquid
Odor	Pungent odor
Odor threshold	Not Available
pH	Not Available
Melting point/freezing point	(Depends on actual concentration): approx. -8°C (17°F)
Initial boiling point and boiling range	95°C (205°F)
Flash point	56°C (133°F): Closed cup
Evaporation rate	Approx. 1
Flammability (solid, gas)	Not Available
Upper/lower flammability or explosive limit	7.0%-73%

Vapor pressure	At 20°C (68°F): 1.3 mmHg
Vapor density	1.04
Relative density	Not Available
Solubility (ies)	Completely soluble
Partition coefficient: n-octanol/water	Log Pow: 0.35
Auto-ignition temperature	420°C (788°F)
Decomposition temperature	Not Available

10. STABILITY AND REACTIVITY

Chemical Stability	Stable
Possibility of Hazardous Reactions	Will not occur.
Conditions to Avoid	Heat, flames, sparks
Incompatible Materials	Strong oxidizing agents, aniline, phenol, isocyanates, acid anhydrides, strong acids, strong bases, amines, peroxides, acid chlorides, alkali metals, reducing agents
Hazardous Decomposition Products	Carbon oxides

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Skin	LD50 Dermal – rabbit – 15800 mg/kg
Eyes	Not Available
Respiratory	LC50 Inhalation (mist) – mouse – 454000 mg/m – 4 hours
Ingestion	LD50 Oral – mouse – 42 mg/kg

Carcinogenicity

IARC	1 – Group 1: Carcinogenic to humans (Formaldehyde)
ACGIH	Classified A2 – Suspected for human (Formaldehyde)
NTP	Reasonably anticipated to be a human carcinogen (Formaldehyde)
OSHA	No components of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Signs & Symptoms of Exposure

Eyes	Contact with liquid causes severe eye irritation and burns.
Inhalation	Dry and sore mouth and throat, thirst, and sleep disturbances, difficulty breathing, shortness of breath, coughing, sneezing, wheezing, rhinitis, chest tightness, pulmonary edema, bronchitis, tracheitis, laryngospasm, pneumonia, palpitations.
Skin	Mild to severe with possible burns depending on the extent of exposure and concentration of solution. Other symptoms may include brownish discoloration of the skin, urticaria, and pustulovesicifflar eruptions.
Ingestion	Nausea, vomiting (possibly with blood), diarrhea, severe pain in mouth, throat, and stomach, and possible corrosive injury to the gastrointestinal mucosa/ulceration or bleeding from stomach.

Chronic Toxicity	Not Available
Teratogenicity	Not Available
Mutagenicity	Not Available
Embryotoxicity	Not Available
Specific Target Organ Toxicity	Not Available

12. ECOLOGICAL INFORMATION

Ecotoxicity

Aquatic Vertebrate	Not Available
Aquatic Invertebrate	Not Available
Terrestrial	Not Available

Persistence and Degradability	Not Available
Bioaccumulative Potential	Not Available
Mobility in Soil	Not Available
PBT and vPvB Assessment	Not Available
Other Adverse Effects	Harmful to aquatic life.

13. DISPOSAL CONSIDERATIONS

Waste Residues	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste products or residues.
Product Containers	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product container.

The information offered in section 13 is for the product as shipped. Use and/or alterations to the product may significantly change the characteristics of the material and alter the waste classification and proper disposal methods.

14. TRANSPORTATION INFORMATION

US DOT	UN1198, Formaldehyde, solutions, flammable, 3, (8), pg III
TDG	UN1198, FORMALDEHYDE, SOLUTIONS, FLAMMABLE, 3, (8), pg III
IMDG	UN1198, FORMALDEHYDE, SOLUTIONS, FLAMMABLE, 3, (8), pg III
Marine Pollutant	No
IATA/ICAO	UN1198, Formaldehyde, solutions, flammable, 3, (8), pg III

15. REGULATORY INFORMATION

TSCA Inventory Status	All ingredients are listed on the TSCA inventory.
DSCL (EEC)	All ingredients are listed on the DSCL inventory.
California Proposition 65	Listed: Formaldehyde
SARA 302	Listed: Formaldehyde
SARA 304	Not Listed
SARA 311	Formaldehyde, Methanol
SARA 312	Formaldehyde, Methanol
SARA 313	Listed: Formaldehyde, Methanol
WHMIS Canada	Class B-3: Combustible liquid with a flash point between 37.8°C (100°F) and 93.3°C (200°C). Class D-1A: Material causing immediate and serious toxic effects (VERY TOXIC). Class D-2A: Material causing other toxic effects (VERY TOXIC).

16. OTHER INFORMATION

Revision	Date
Revision 1	01/29/2013

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