

Creation date: 11-02-17

Revision date: 02-22-21

Revision number: 1.2

Section I - Product Identification

Product: An aqueous solution of formaldehyde, acetic acid and picric acid.

Intended Uses: An in-vitro diagnostic reagent intended to be used as a laboratory fixative.

Uses advised against: Only for use by laboratory professionals.

Manufacturer Identification

Medical Chemical Corp.
19430 Van Ness Ave.
Torrance, CA 90501

Customer Service: Phone (310)787-6800
Email: Christinaavena@med-chem.com
FAX (310)787-4464

Emergency Telephone Number

CHEMTREC Emergency Response Telephone Number: (800)424-9300. Note: The CHEMTREC phone number is only for emergencies involving spills, leaks, fire, exposure or accident. Please direct all other inquiries to our customer service phone number.



Section II - Hazard Identification

This item is considered hazardous by 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin corrosion/irritation: Category 2 (H315). Causes skin corrosion/irritation.

Skin sensitization: Category 1 (H317). May cause an allergic skin reaction.

Serious eye damage/eye Irritation: Category 1 (H318). Causes serious eye damage.

Specific organ toxicity: Category 2 (H335). May cause respiratory irritation.

Mutagen: Category 2 (H341). Suspected of causing genetic defects.

Carcinogenicity: Category 1B (H350). May cause cancer.

Specific organ toxicity: Category 2 (H371). May cause damage to organs.

Signal word: Danger.

Hazard statements

According to the harmonized classification and labeling approved by OSHA and the European Union, this substance is toxic if swallowed and in contact with the skin, causes skin burns and eye damage, is toxic if inhaled, may cause cancer, is suspected of causing genetic defects and may cause an allergic skin reaction. Formaldehyde is a known carcinogen.

Precautionary Statements

- P261 Avoid breathing dust/fume/gas/mist/vapors/spray.
- P264 Wash thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P271 Use only outdoors or in a well-ventilated area.
- P272 Contaminated work clothing should not be allowed out of the workplace.
- P281 Use personal protective equipment as required.
- P285 In case of inadequate ventilation wear respiratory protection.

Safety Ratings

Health: Hazardous *Flammability:* None *Reactivity:* Reactive *Contact:* Hazardous

Recommended safety equipment: safety goggles, lab coat and proper gloves

Storage: General storage

NFPA Ratings

Health = 2 Flammability = 0 Reactivity = 2

Potential Health Effects

Inhalation of formaldehyde can lead to congestion, coughing and shortness of breath. Frequent skin contact leads to drying and scaling. Ingestion will damage the throat, stomach and intestines resulting in nausea, vomiting, abdominal pain and diarrhea. Lowered blood pressure, spontaneous abortion, loss of consciousness and kidney damage may result. Inhalation of high concentrations of vapor (14 ppm) have caused cancer in laboratory animals. Genetic damage in bacteria has been demonstrated.

Inhalation: Irritating to respiratory tract. May cause asthma like symptoms in sensitive individuals.

Ingestion: Can cause irritation and chemical burns to the mouth, throat, esophagus and stomach. Can also cause nausea, vomiting, diarrhea, etc.

Skin contact: May cause skin irritation or aggravation of existing dermatitis. May cause discoloration of the skin.

Eye contact: Vapors may cause stinging sensation and tearing. Solution contact can cause corneal injury which can cause visual impairment if not dealt with immediately.

Aggravation of preexisting conditions: May aggravate preexisting asthma and other lung diseases.

Section III - Composition/Information on Components

Ingredients	CAS#	EC-No.	% w/w
Formaldehyde	50-00-0	200-001-8	9.7% w/w
Methanol	67-56-1	200-659-6	2% w/w
Acetic acid	64-19-7	200-580-7	5.1% w/w
Picric acid	88-89-1	201-865-9	0.7% w/w

Section IV - First Aid Measures

Inhalation: Remove from source of exposure and get medical attention for any breathing difficulty.

Ingestion: Drink large quantities of fluids and call a physician immediately. Administer activated charcoal or other adsorbent if available.

Skin Contact: Wash affected area with soap and water. Get medical advice if irritation develops.

Eye Contact: Immediately flush thoroughly with running water for several minutes. Get immediate medical advice.

Section V - Fire Fighting Measures

Flash point: Not applicable.

Flammable Limits: Not applicable.

Fire: Not normally a fire hazard,

Explosion: Picric acid can be an explosion hazard if concentrated and dried. Also, metal salts of picric acid, e.g. lead picrate, are extremely explosive.

Fire Extinguishing Media: Any means suitable for surrounding fire.

Special information: Pyrolysis will release corrosive oxides.

Section VI - Accidental Release Measures

Wear appropriate protective gear such as gloves, apron and protective eye wear. Absorb with a suitable absorbent (such as paper towels) and store in a suitable container for disposal. Large spills may be neutralized with formalin neutralizers. Should not be released into the environment.

Section VII - Handling and Storage

P102+P233+P403. Store in a closed container. Store in a well ventilated area at controlled room temperature, 59 °F to 86 °F (15 °C to 30 °C).

Section VIII - Exposure Control/Personal Protection

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH
Formaldehyde	0.75 ppm TWA	0.3 ppm (CEIL)	20 ppm
Methyl alcohol	200 ppm TWA	200 ppm TWA	6000 ppm
Acetic acid	25 mg/m ³ TWA	25 mg/m ³ TWA	50 ppm
Picric acid	0.1 mg/m ³ TWA (Skin)	0.1 mg/m ³ TWA (Skin)	75 mg/m ³

Legend

ACGIH: American Conference of Governmental Industrial Hygienists.

OSHA: Occupational Safety and Health Administration.

NIOSH: National Institute for Occupational Safety and Health.

IDLH: Immediately dangerous to life or health.

Ventilation System: Local exhaust such as explosion proof chemical fume hoods are recommended. When required, Refer to the ACGIH document, "Industrial Ventilation, a Manual of Recommended Practices" for details about ventilation.

Personal Respirator: Usually not required. In case of emergency, or when exposure levels are unknown, use a positive pressure, full face piece, air supplied respirator.

Skin protection: Protective gloves are recommended as part of good laboratory practice.

Eye Protection: Laboratory safety goggles or similar products are recommended as part of good laboratory practice.

Section IX - Physical and Chemical Properties

Boiling Point: 100 °C

Vapor pressure (mm Hg): 24 @ 25 °C

Vapor Density (air = 1): 0.6

Appearance and Odor: A clear colorless liquid with the acrid odor of formaldehyde.

Density: 1.04 g/ml @ 22.5 °C

Evaporation Rate (water = 1): 1

Solubility: Infinitely miscible with water

Section X - Stability and Reactivity

Stability: Stable under normal conditions.

Hazardous Decomposition Products: Nitrous oxides, carbon monoxide and aromatic compounds.

Hazardous polymerization: Will not occur.

Incompatibilities: metal salts.

Conditions to avoid: Some metal picrates are highly explosive and highly sensitive to shock.

Section XI - Toxicological Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Formaldehyde	500 mg/kg (Rat)	270 mg/kg (Rat)	0.578 mg/l/4h (Rat)
Methyl alcohol	5628 mg/kg (Rat)	15,800 mg/kg (Rabbit)	131 mg/l/4h (Rat)
Acetic acid	3.31 g/kg (Rat)	1.11 g/kg (Rabbit)	11.4 mg/l 4 h (Rat)
Picric acid	200 mg/kg (Rat)	No data	No data

Toxic by ingestion or inhalation. The chronic toxicity of this product is unknown but may include sensitization in sensitive individuals. Formaldehyde is a known human carcinogen

Cancer lists

Ingredient	Known Carcinogenicity?	NTP?	Anticipated?	IARC Category
Formaldehyde	yes	No	yes	1
Methanol	No	No	No	None
Acetic acid	No	No	No	None
Picric acid	No	No	No	None

Section XII - Ecological Information

Methanol and formaldehyde are not expected to bioaccumulate. The material is removed from the air by dry and liquid adsorption. Both chemicals biodegrade quickly and are not expected to be endocrine disrupters, persistent organic pollutants or ozone depleters.

Soil Mobility: Unknown.

Environmental Fate: Biodegradable.

Environmental Toxicity: H402. Harmful to aquatic life.

Component	Freshwater Fish	Water Flea	Freshwater algae
Formaldehyde	LC50 = 15 mg/l 96 h	EC50 = 20 mg/L 96 h	EC50 = 4.9 mg/l 72 h
Methanol	LC50 g/l 96 h	EC50 10 g/l 24 h	EC50 > 22 g/l 96 h
Acetic acid	LC50 1 g/l 96 h	EC50 > 301 mg/l 48 h	No Data
Picric acid	LC50 170 mg/l 96 h	EC50 112 mg/l	No Data

Section XIII - Disposal Considerations

Incineration at a licensed chemical disposal facility is the preferred disposal method for formaldehyde. Because formaldehyde is a known human carcinogen, local and state governments usually restrict the amount that may be flushed down the drain without neutralization. Neutralization may be achieved with glycine, bisulfite or ammonia. There are also proprietary products that are authorized for formaldehyde. In addition solutions of picric acid should not be flushed down drains because of the danger of forming explosive metal picrates. Dispose of contents and container in accord with all applicable regulations.

Section XIV - Transportation Information

Formalin solutions with less than 10% formaldehyde are not regulated by DOT or IATA.

Section XV - Regulatory Information

Chemical Inventory Status


Ingredient	TSCA	EC
Formaldehyde	Yes	Yes
Methanol	Yes	Yes
Acetic acid	Yes	Yes
Picric acid	Yes	Yes

Federal and State Regulations

Ingredient	SARA 302		SARA 313		RCRA TSCA		
	RQ	TPQ	List	Category	261.33	8(D)	Ca. Prop 65
Formaldehyde	100	500	Yes	No	U122	No	Yes
Methanol	No	No	Yes	No	U154	No	Yes
Acetic acid	No	No	Yes	No	No	No	No
Picric acid	No	No	Yes	No	No	No	No

Chemical Weapons Convention: No TSCA 12(b): No CDTA: Yes

SARA 311/312: Acute: Yes Chronic: Yes Fire: No Pressure: No Reactivity: No

 Warning: This product contains formaldehyde and methanol which are known to the state of California to cause cancer, birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov

Section XVI - Other Information

This information is believed to be correct at the time of publication but is not guaranteed as such, nor does it purport to be all inclusive. Medical Chemical Corp. assumes no liability for the accuracy or completeness of the information. The user assumes all responsibility for compliance with federal, state and local laws.

Document Number: S031

Revision number: 1.0

Revision Date: Feb. 22, 2021