

Revision Date 03-Feb-2025

Version 9

## 1. IDENTIFICATION

<b>Product Name</b>	10% Formalin Fixative, Neutral, Phosphate Buffered
<b>Product Code</b>	4499
<b>Recommended Use</b>	Routine histology fixative. For laboratory and in-vitro diagnostic use only.
<b>Company</b>	E K Industries, Inc. 1403 Herkimer St. Joliet, IL 60432 Tel. (800) 283-4244
<b>Emergency Telephone</b>	Call CHEMTREC 1-800-424-9300 (EKI CCN 7453)

## 2. HAZARDS IDENTIFICATION

### Classification

#### OSHA Regulatory Status

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

Acute toxicity - Inhalation (Gases)	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 1
Skin sensitization	Category 1
Germ cell mutagenicity	Category 2
Carcinogenicity	Category 1A
Specific target organ toxicity (single exposure)	Category 1
Flammable liquids	Category 4

### Label elements

#### Signal word

DANGER

#### Hazard statements

Harmful if inhaled. Causes skin irritation. Causes serious eye damage. May cause an allergic skin reaction. Suspected of causing genetic defects. May cause cancer. Causes damage to organs.  
Combustible liquid.



#### Precautionary Statements - Prevention

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal

protective equipment as required. Use only outdoors or in a well-ventilated area. Wash face, hands and any exposed skin thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves. Do not breathe dust/fume/gas/mist/vapors/spray. Do not eat, drink or smoke when using this product. Keep away from heat/sparks/open flames/hot surfaces. No smoking.

**Precautionary Statements - Response**

IF exposed: Call a POISON CENTER or doctor/physician.  
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.  
 IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash before reuse. If skin irritation or rash occurs: Get medical advice/attention.  
 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.  
 In case of fire: Use CO2, dry chemical, or foam for extinction.

**Precautionary Statements - Storage**

Store locked up. Store in a well-ventilated place. Keep cool.

**Precautionary Statements - Disposal**

Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable.

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Chemical Name	CAS No.	Weight-%
Water	7732-18-5	>90
Formaldehyde	50-00-0	3.5-4.0
Sodium Phosphate, monobasic	7558-80-7	<1
Sodium Phosphate, dibasic	7558-79-4	<1
Methyl alcohol	67-56-1	1.0-1.5

**4. FIRST AID MEASURES**

**Description of first aid measures**

**General advice** Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing.

**Eye contact** Immediately flush with plenty of water for at least 15 minutes, separating eyelids occasionally. Remove contact lenses if present. Get immediate medical attention if irritation develops or persists.

**Skin contact** Wash thoroughly with soap and water while removing contaminated garments. Get medical attention if irritation develops.

**Inhalation** Remove to fresh air. Get medical attention for any breathing difficulty.

**Ingestion** Do NOT induce vomiting unless instructed to do so by medical personnel. If conscious, rinse mouth and give several glasses of water to drink. Never give anything by mouth to an unconscious person. Get immediate medical attention.

**Most important symptoms and effects, both acute and delayed**

**Symptoms** Causes skin, eye and respiratory tract irritation. If swallowed, causes GI disturbances. May cause allergic skin reaction.

**5. FIRE-FIGHTING MEASURES**

**Suitable extinguishing media**

CO2, dry chemical, dry sand, alcohol-resistant foam. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment

**Specific hazards arising from the chemical**

May cause sensitization by skin contact. The product causes irritation of eyes, skin and mucous membranes.

**Hazardous combustion products**

Carbon oxides. Formaldehyde.

**Protective equipment and precautions for firefighters**

Firefighters should wear self-contained breathing apparatus with full facepiece operated in pressure-demand or other positive pressure mode.

**NFPA**                      **Health hazards** 2                      **Flammability** 1                      **Instability** 0                      **Physical and Chemical Properties** -

**6. ACCIDENTAL RELEASE MEASURES**

**Personal precautions, protective equipment and emergency procedures**

- Personal precautions**                      Avoid contact with skin, eyes or clothing. Ensure adequate ventilation, especially in confined areas. Use personal protective equipment as required.
- For emergency responders**                      Use personal protective equipment as required. Wear respiratory protection. Ventilate the area.
- Environmental precautions**                      Prevent product from entering drains. Should not be released into the environment. Prevent entry into waterways, sewers, basements or confined areas.

**Methods and material for containment and cleaning up**

- Methods for containment**                      Dike far ahead of spill; use dry sand to contain the flow of material. Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container.
- Methods for cleaning up**                      Absorb spill with inert material, scoop up and containerize for disposal.

**7. HANDLING AND STORAGE**

- Precautions for safe handling**                      Use personal protective equipment as required  
Handle in accordance with good industrial hygiene and safety practice.
- Storage Conditions**                      Keep container tightly closed in a dry and well-ventilated place. Store at 15C to 30C.
- Incompatible materials**                      Oxidizers. Bases.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Occupational exposure limits**

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Formaldehyde 50-00-0	STEL: 0.3 ppm TWA: 0.1 ppm	TWA: 0.75 ppm (vacated) TWA: 3 ppm unless specified in 1910.1048 (vacated) STEL: 10 ppm 30 min unless specified in 1910.1048 (vacated) Ceiling: 5 ppm unless specified in 1910.1048 STEL: 2 ppm see 29 CFR 1910.1048	IDLH: 20 ppm Ceiling: 0.1 ppm 15 min TWA: 0.016 ppm
Methyl alcohol	STEL: 250 ppm	TWA: 200 ppm	IDLH: 6000 ppm

67-56-1	TWA: 200 ppm Skin	TWA: 260 mg/m <sup>3</sup> (vacated) TWA: 200 ppm (vacated) TWA: 260 mg/m <sup>3</sup> (vacated) STEL: 250 ppm (vacated) STEL: 325 mg/m <sup>3</sup> (vacated) Skin	TWA: 200 ppm TWA: 260 mg/m <sup>3</sup> STEL: 250 ppm STEL: 325 mg/m <sup>3</sup>
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**Appropriate engineering controls**

**Engineering Controls** Emergency showers, eyewash stations, ventilation systems.

**Individual protection measures, such as personal protective equipment**

- Eye/face protection** Wear safety glasses with side shields (or goggles).
- Skin and body protection** Wear protective gloves and protective clothing.
- Respiratory protection** If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

**General Hygiene Considerations** Handle in accordance with good industrial hygiene and safety practice.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

**Information on basic physical and chemical properties**

<b>Physical state</b>	Liquid
<b>Appearance</b>	Clear, colorless
<b>Odor</b>	Odor of formaldehyde
<b>Odor threshold</b>	No Data Available
<b>pH</b>	6.90-7.10
<b>Melting point / freezing point</b>	No Data Available
<b>Boiling point / boiling range</b>	No Data Available
<b>Flash point</b>	85 °C
<b>Evaporation rate</b>	No Data Available
<b>Flammability (solid, gas)</b>	No Data Available
<b>Flammability Limit in Air</b>	
<b>Upper flammability limit:</b>	No Data Available
<b>Lower flammability limit:</b>	No Data Available
<b>Vapor pressure</b>	No Data Available
<b>Vapor density</b>	No Data Available
<b>Relative density</b>	No Data Available
<b>Water solubility</b>	Miscible with water
<b>Solubility in other solvents</b>	No Data Available
<b>Partition coefficient</b>	No Data Available
<b>Autoignition temperature</b>	No Data Available
<b>Decomposition temperature</b>	No Data Available
<b>Kinematic viscosity</b>	No Data Available

**10. STABILITY AND REACTIVITY**

- Stability** Stable under recommended storage conditions.
- Possibility of Hazardous Reactions** None under normal processing.
- Conditions to avoid** Extremes of temperature and direct sunlight.

**Incompatible materials** Oxidizers. Bases.

**Hazardous Decomposition Products** Formaldehyde. Carbon monoxide. Carbon dioxide (CO2).

**11. TOXICOLOGICAL INFORMATION**

**Information on likely routes of exposure**

**Inhalation** Harmful by inhalation.  
**Eye contact** Risk of serious damage to eyes.  
**Skin contact** May cause sensitization by skin contact.  
**Ingestion** No data available.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Water 7732-18-5	> 90 mL/kg ( Rat )	-	-
Formaldehyde 50-00-0	= 100 mg/kg ( Rat )	= 270 mg/kg ( Rabbit )	= 0.578 mg/L ( Rat ) 4 h
Sodium Phosphate, monobasic 7558-80-7	= 8290 mg/kg ( Rat )	> 7940 mg/kg ( Rabbit )	-
Sodium Phosphate, dibasic 7558-79-4	= 17 g/kg ( Rat )	-	-
Methyl alcohol 67-56-1	= 6200 mg/kg ( Rat )	= 15800 mg/kg ( Rabbit ) = 15840 mg/kg ( Rabbit )	= 22500 ppm ( Rat ) 8 h = 64000 ppm ( Rat ) 4 h

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Skin corrosion/irritation** Irritating to skin.  
**Serious eye damage/eye irritation** Risk of serious damage to eyes. Irritating to eyes.  
**Sensitization** May cause sensitization by skin contact.  
**Germ cell mutagenicity** No Data Available.  
**Carcinogenicity** The table below indicates whether each agency has listed any ingredient as a carcinogen

**Legend**

- ACGIH (American Conference of Governmental Industrial Hygienists)
- A2 - Suspected Human Carcinogen
- IARC (International Agency for Research on Cancer)
- Group 1 - Carcinogenic to Humans
- NTP (National Toxicology Program)
- Known - Known Carcinogen
- OSHA (Occupational Safety and Health Administration of the US Department of Labor)
- X - Present

**12. ECOLOGICAL INFORMATION**

**Ecotoxicity**

Chemical Name	Algae/aquatic plants	Fish	Crustacea
Formaldehyde 50-00-0	-	0.032 - 0.226: 96 h Oncorhynchus mykiss mL/L LC50 flow-through 23.2 - 29.7: 96 h Pimephales promelas mg/L LC50 static 22.6 - 25.7: 96 h Pimephales promelas mg/L LC50 flow-through 41: 96 h Brachydanio rerio mg/L LC50 static 1510: 96 h Lepomis macrochirus µg/L LC50 static 100 - 136: 96 h Oncorhynchus mykiss mg/L LC50 static	2: 48 h Daphnia magna mg/L LC50 11.3 - 18: 48 h Daphnia magna mg/L EC50 Static

Methyl alcohol 67-56-1	-	19500 - 20700: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 13500 - 17600: 96 h Lepomis macrochirus mg/L LC50 flow-through 18 - 20: 96 h Oncorhynchus mykiss mL/L LC50 static 28200: 96 h Pimephales promelas mg/L LC50 flow-through 100: 96 h Pimephales promelas mg/L LC50 static	-
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**Persistence and degradability**

No Data Available.

**Bioaccumulation**

No Data Available.

Chemical Name	Partition coefficient
Formaldehyde 50-00-0	0.35
Methyl alcohol 67-56-1	-0.77

**Other adverse effects**

No Data Available

**13. DISPOSAL CONSIDERATIONS**

**Waste treatment methods**

**Disposal of wastes**

Dispose of in accordance with federal, state and local regulations.

**Contaminated packaging**

Do not reuse container. Emptied containers may contain residue. Continue to follow label warnings after container is emptied.

Chemical Name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Formaldehyde 50-00-0	U122	Included in waste streams: K009, K010, K038, K040, K156, K157	-	U122
Methyl alcohol 67-56-1	-	Included in waste stream: F039	-	U154

Chemical Name	California Hazardous Waste Status
Formaldehyde 50-00-0	Toxic Ignitable
Methyl alcohol 67-56-1	Toxic Ignitable

**14. TRANSPORT INFORMATION**

Transportation information is provided as a general reference only and may not be applicable in all situations. This information applies to non-bulk shipments only. Per 49 CFR §173.22, it is the shipper's responsibility to ensure that all materials are properly packaged, classified and labeled prior to shipment.

**DOT**

Not regulated

**IATA**

Not regulated

**15. REGULATORY INFORMATION**

**US Federal Regulations**

**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	SARA 313 - Threshold Values %
Formaldehyde - 50-00-0	0.1
Methyl alcohol - 67-56-1	1.0

**SARA 311/312 Hazard Categories**

Acute health hazard	Yes
Chronic Health Hazard	Yes
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

**CWA (Clean Water Act)**

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Formaldehyde 50-00-0	100 lb	-	-	X
Sodium Phosphate, dibasic 7558-79-4	5000 lb	-	-	X

**CERCLA**

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Formaldehyde 50-00-0	100 lb	100 lb	RQ 100 lb final RQ RQ 45.4 kg final RQ
Sodium Phosphate, dibasic 7558-79-4	5000 lb	-	RQ 5000 lb final RQ RQ 2270 kg final RQ
Methyl alcohol 67-56-1	5000 lb	-	RQ 5000 lb final RQ RQ 2270 kg final RQ

**US State Regulations**

**WARNING California Proposition 65. Cancer and Reproductive Harm.**

This product contains the following Proposition 65 chemicals

Chemical Name	WARNING California Proposition 65. Cancer and Reproductive Harm.
Formaldehyde - 50-00-0	Carcinogen
Methyl alcohol - 67-56-1	Developmental

**U.S. State Right-to-Know Regulations**

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Formaldehyde 50-00-0	X	X	X
Sodium Phosphate, dibasic 7558-79-4	X	X	X
Methyl alcohol 67-56-1	X	X	X

**16. OTHER INFORMATION**

Prepared By  
Revision Date

EKI Regulatory Affairs (Email: reg@eki-chem.com)  
03-Feb-2025

Disclaimer

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**End of Safety Data Sheet**