

Revision Date 09-Jun-2015

Version 1

1. IDENTIFICATION

Product Name 10% Formalin Fixative (NBF)
Product Code MER 4499
Synonyms Neutral Buffered Formalin, 10% NBF
Recommended Use Routine histology fixative. For laboratory and in-vitro diagnostic use only.
Company E K Industries, Inc. **Distributor** Mercedes Scientific
 1403 Herkimer St. 12210 Rangeland Pkwy
 Joliet, IL 60432 Lakewood Ranch, FL 34211
 Tel. (800) 283-4244 800.331.2716
Emergency Telephone 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
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
 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 to an approved waste disposal plant.

3. COMPOSITION/INFORMATION ON INGREDIENTS

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

4. FIRST AID MEASURES

Description of first aid measures**General advice**

Do not get in eyes, on skin, or on clothing. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. Do not breathe gas/fumes/vapor/spray.

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.

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.

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 No information available.

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.

Environmental precautions

Prevent product from entering drains. Should not be released into the environment.

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

Prevent further leakage or spillage if safe to do so.

Methods for cleaning up

Absorb spill with inert material, scoop up and containerize for disposal.

7. HANDLING AND STORAGE**Precautions for safe handling**

Handle in accordance with good industrial hygiene and safety practice. Use personal protective equipment as required

Storage Conditions

Keep container tightly closed in a dry and well-ventilated place. Protect from moisture.

Incompatible materials

Oxidizers. Bases.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Occupational exposure limits**

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Formaldehyde 50-00-0	Ceiling: 0.3 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 67-56-1	STEL: 250 ppm TWA: 200 ppm Skin	TWA: 200 ppm TWA: 260 mg/m ³ (vacated) TWA: 200 ppm (vacated) TWA: 260 mg/m ³ (vacated) STEL: 250 ppm (vacated) STEL: 325 mg/m ³ (vacated) Skin	IDLH: 6000 ppm TWA: 200 ppm TWA: 260 mg/m ³ STEL: 250 ppm STEL: 325 mg/m ³

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 Ensure adequate ventilation, especially in confined areas. 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**

Physical state	Liquid
Appearance	Clear, colorless
Odor	Faint odor of formaldehyde
Odor threshold	No information available
pH	7.0
Melting point / freezing point	No information available
Boiling point / boiling range	No information available
Flash point	85 C
Evaporation rate	No information available
Flammability (solid, gas)	No information available
Flammability Limit in Air	
Upper flammability limit:	No information available
Lower flammability limit:	No information available
Vapor pressure	No information available
Vapor density	No information available
Relative density	No information available
Water solubility	Miscible with water
Solubility in other solvents	No information available
Partition coefficient	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Kinematic viscosity	No information available

10. STABILITY AND REACTIVITY

Stability Stable under recommended storage conditions.

Possibility of Hazardous Reactions None under normal processing.

Conditions to avoid None known

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
Formaldehyde 50-00-0	= 500 mg/kg (Rat)	= 270 mg/kg (Rabbit)	= 0.578 mg/L (Rat) 4 h
Methyl alcohol 67-56-1	= 5628 mg/kg (Rat)	-	= 83.2 mg/L (Rat) 4 h
Sodium Phosphate, dibasic 7558-79-4	= 17 g/kg (Rat)	-	-
Sodium Phosphate, monobasic 7558-80-7	= 8290 mg/kg (Rat)	> 7940 mg/kg (Rabbit)	-

Information on toxicological effectsDelayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization	May cause sensitization by skin contact.
Germ cell mutagenicity	No information available.
Carcinogenicity	The table below indicates whether each agency has listed any ingredient as a carcinogen

Chemical Name	ACGIH	IARC	NTP	OSHA
Formaldehyde 50-00-0	A2	Group 1	Known	X

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 INFORMATIONEcotoxicity

Chemical Name	Algae/aquatic plants	Fish	Crustacea
Formaldehyde 50-00-0	-	22.6 - 25.7: 96 h Pimephales promelas mg/L LC50 flow-through 1510: 96 h Lepomis macrochirus µg/L LC50 static 41: 96 h Brachydanio rerio mg/L LC50 static 0.032 - 0.226: 96 h Oncorhynchus mykiss mL/L LC50 flow-through 100 - 136: 96 h Oncorhynchus mykiss mg/L LC50 static 23.2 - 29.7: 96 h Pimephales promelas 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	-	28200: 96 h Pimephales promelas mg/L LC50 flow-through 100: 96 h Pimephales promelas mg/L LC50 static 19500 - 20700: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 18 - 20: 96 h Oncorhynchus mykiss mL/L LC50 static 13500 - 17600: 96 h Lepomis	-

		macrochirus mg/L LC50 flow-through	
--	--	---------------------------------------	--

Persistence and degradability

No information available.

Bioaccumulation

No information available.

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

Other adverse effects

No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes

Disposal should be in accordance with applicable regional, national and local laws and 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

Note:

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 CRF 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	No
Chronic Health Hazard	No
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
Methyl alcohol 67-56-1	5000 lb	-	RQ 5000 lb final RQ RQ 2270 kg final RQ
Sodium Phosphate, dibasic 7558-79-4	5000 lb	-	RQ 5000 lb final RQ RQ 2270 kg final RQ

US State Regulations**California Proposition 65**

This product contains the following Proposition 65 chemicals

Chemical Name	California Proposition 65
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
Methyl alcohol 67-56-1	X	X	X
Sodium Phosphate, dibasic 7558-79-4	X	X	X

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. OTHER INFORMATION

Prepared By EKI Regulatory Affairs
Email: reg@eki-chem.com

Revision Date 09-Jun-2015

Disclaimer

E K Industries, Inc. makes no representation as to the comprehensiveness or accuracy of this document. Individuals using this information, or the product to which it refers, must exercise their independent judgment in determining all appropriateness for a particular purpose. Accordingly, E K Industries, Inc. will not be responsible for damages of any kind or nature resulting from the use of this information or the corresponding product. No representations or warranties

of any kind or nature, including but not limited to: express warranties, implied warranties or merchantability, or warranties of fitness for a particular purpose, are made hereunder with respect to the information set forth herein or to the product to which the information refers.

End of Safety Data Sheet