



Tissue-Tek® 10% Neutral Buffered Formalin

Safety Data Sheet

US-SDS according to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

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SECTION 1: Identification

1.1. Identification

Product form : Mixture
Product name : Tissue-Tek® 10% Neutral Buffered Formalin
Product code : 5993

1.2. Recommended use and restrictions on use

Formalin Fixative

1.3. Supplier

Sakura Finetek USA Inc.
1750 West 214th St.
Torrance, CA 90501
T 1-310-972-7800

1.4. Emergency telephone number

CHEMTREC 1-800-424-9300
Email: SDSsupport@sakuraus.com

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Physical hazards	Not classified.	
Health hazards	Acute toxicity, oral	Category 4
	Sensitization, skin	Category 1
	Germ cell mutagenicity	Category 2
	Carcinogenicity	Category 1A
	Specific target organ toxicity, single exposure	Category 2
Environmental hazards	Not classified	

2.2. GHS Label elements, including precautionary statements

GHS US labeling

Hazard symbol



Signal word

Danger

Hazard statement

Harmful if swallowed. May cause an allergic skin reaction. Suspected of causing genetic defects.
May cause cancer. May cause damage to organs.

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Precautionary statement *Prevention* - Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe mist or vapor. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Contaminated work clothing must not be allowed out of the workplace. Wear protective gloves/protective clothing/eye protection/face protection.

Response - If on skin: Wash with plenty of water/. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If swallowed: Rinse mouth. If skin irritation or rash occurs: Get medical advice/attention. If exposed or concerned: Call a poison center/doctor. Wash contaminated clothing before reuse.

Storage - Store locked up.

Disposal - Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3. Other hazards which do not result in classification

None known.

2.4. Unknown acute toxicity (GHS US)

None.

SECTION 3: Composition/Information on ingredients

3.1. Substances

Enter applicable information

3.2. Mixtures

Name	CAS Number	%
Formaldehyde	50-00-0	3.7 - 4
Methanol	67-56-1	1.1

The specific chemical component identities and/or the exact component percentages of this material may be withheld as trade secrets.

This information is made available to health professionals, employees, and designated representatives in accordance with the applicable provisions of 29 CFR 1910.1200 (I)(1). Trace ingredients (if any) are present in < 1% concentration, (< 0.1% for potential carcinogens, mutagen, and reproductive toxicant, respiratory tract and skin sensitizers in addition to oral/ inhalation acute toxicant in category 1 and 2). None of the trace ingredients contribute significant additional hazards at the concentrations that may be present in this product. All pertinent hazard information has been provided in this document, per the requirements of the Federal Occupational Safety and Health Administration Standard (29 CFR 1910.1200), U.S. State equivalents.

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : Move to fresh air. Call a physician if symptoms develop or persist.

First-aid measures after skin contact : Remove contaminated clothing immediately and wash skin with soap and water. In case of eczema or other skin disorders: Seek medical attention and take along these instructions.

First-aid measures after eye contact : Rinse with water. Get medical attention if irritation develops and persists.

First-aid measures after ingestion : Rinse mouth. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical advice/attention if you feel unwell.

4.2. Most important symptoms and effects (acute and delayed)

Provide general supportive measures and treat symptomatically. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

4.3. Immediate medical attention and special treatment, if necessary

Provide general supportive measures and treat symptomatically. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

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If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before reuse.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media Water fog. Foam. Dry chemical powder. Carbon dioxide (CO₂).

5.2. Specific hazards arising from the chemical

Hazardous decomposition products in case of fire During fire, gases hazardous to health may be formed.

5.3. Special protective equipment and precautions for fire-fighters

Protection during firefighting : Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Move containers from fire area if you can do so without risk.
Use standard firefighting procedures and consider the hazards of other involved materials.
No unusual fire or explosion hazards noted.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation.

6.1.2. For emergency responders

Protective equipment : Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

6.2. Environmental precautions

Avoid discharge into drains, water courses or onto the ground.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Other information : Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Provide adequate ventilation. Do not breathe mist or vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Do not taste or swallow. When using, do not eat, drink or smoke. Should be handled in closed systems, if possible.

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Hygiene measures : Wear appropriate personal protective equipment. Wash hands thoroughly after handling.
Observe good industrial hygiene practices.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)		
Components	Type	Value
Formaldehyde (CAS 50-00-0)	STEL	2 ppm
	TWA	0.75 ppm
US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)		
Components	Type	Value
Methanol (CAS 67-56-1)	PEL	260 mg/m3
		200 ppm
US. ACGIH Threshold Limit Values		
Components	Type	Value
Formaldehyde (CAS 50-00-0)	Ceiling	0.3 ppm
Methanol (CAS 67-56-1)	STEL	250 ppm
	TWA	200 ppm
US. NIOSH: Pocket Guide to Chemical Hazards		
Components	Type	Value
Formaldehyde (CAS 50-00-0)	Ceiling	0.1 ppm
Methanol (CAS 67-56-1)	TWA	0.016 ppm
	STEL	325 mg/m3
		250 ppm
	TWA	260 mg/m3
		200 ppm

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US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)		
ACGIH Biological Exposure Indices		
Components	Value	Specimen
Methanol (CAS 67-56-1) * - For sampling details, please see the source document	15 mg/L	Urine
Exposure guidelines US - California OELs: Skin designation Methanol (CAS 67-56-1) Can be absorbed through the skin. US - Minnesota Haz Subs: Skin designation applies Methanol (CAS 67-56-1) Skin designation applies. US - Tennessee OELs: Skin designation Methanol (CAS 67-56-1) Can be absorbed through the skin. US ACGIH Threshold Limit Values: Skin designation Methanol (CAS 67-56-1) Can be absorbed through the skin. US. NIOSH: Pocket Guide to Chemical Hazards Methanol (CAS 67-56-1) Can be absorbed through the skin.		

8.2. Appropriate engineering controls

Appropriate engineering controls

: Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

General hygiene considerations

: Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

8.3. Individual protection measures/Personal protective equipment

Hand protection:
Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.
Eye protection:
Safety glasses with side-shields.
Skin and body protection:
Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended. Wear appropriate thermal protective clothing, when necessary.
Respiratory protection:
Chemical respirator with organic vapor cartridge and full facepiece.

Personal protective equipment symbol(s):



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SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Color	: Colorless
Odor	: Pungent
Odor threshold	: No data available.
pH	: 7.1 - 7.3
Melting point	: No data available.
Freezing point	: No data available.
Boiling point	: 207 °F (97.22 °C)
Flash point	: > 199.4 °F (> 93.0 °C) Closed Cup
Relative evaporation rate (butyl acetate=1)	: Not available.
Flammability	: (Class) IIIB
Vapor pressure	: Not available.
Relative vapor density at 20°C	: Not available.
Relative density	: Not available.
Solubility	: 100 %
Partition coefficient n-octanol/water (Log Pow)	: No data available.
Auto-ignition temperature	: No data available.
Decomposition temperature	: No data available.
Viscosity, kinematic	: No data available.
Viscosity, dynamic	: No data available.
Explosion limits	: Not explosive.
Explosive properties	: Not explosive.
Oxidizing properties	: Not oxidizing.

9.2. Other information

None

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is stable and non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Material is stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reaction known under conditions of normal use.

10.4. Conditions to avoid

Contact with incompatible materials.

10.5. Incompatible materials

Strong oxidizing agents. Ammonia. Chlorine. Hydrochloric acids

10.6. Hazardous decomposition products

No hazardous decomposition products are known.

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SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Harmful if swallowed.

Components	Species	Test Results
Formaldehyde (CAS 50-00-0)		
Acute		
Oral		
LD50	Rat	100 mg/kg

Acute toxicity (dermal) : May cause an allergic skin reaction. May cause an allergic skin reaction. Dermatitis. Rash.

Acute toxicity (inhalation) : May cause damage to organs by inhalation. Prolonged inhalation may be harmful.

Components	Species	Test Results
Formaldehyde (CAS 50-00-0)		
Acute		
Inhalation		
LC50	Rat	0.48 mg/l, 4 Hours

Skin corrosion/irritation : Prolonged skin contact may cause temporary irritation

Serious eye damage/irritation : Direct contact with eyes may cause temporary irritation

Respiratory or skin sensitization : ACGIH sensitization - Formaldehyde (CAS 50-00-0) Sensitizer.
Not a respiratory sensitizer. May cause an allergic skin reaction

Germ cell mutagenicity : Suspected of causing genetic defects.

Carcinogenicity : May cause cancer.

IARC Monographs. Overall Evaluation of Carcinogenicity NTP Report on Carcinogens:

Formaldehyde (CAS 50-00-0) Carcinogenic to humans.

Formaldehyde (CAS 50-00-0) Known To Be Human Carcinogen.

OSHA Specifically Regulated Substances (29 CFR 1910.1001- 1050):

Formaldehyde (CAS 50-00-0) Cancer

Reproductive toxicity : This product is not expected to cause reproductive or developmental effects.

STOT-single exposure : May cause damage to organs.

STOT-repeated exposure : Not classified.

Aspiration hazard : Not an aspiration hazard.

Chronic effects : Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Components	Species	Test Results
Formaldehyde (CAS 50-00-0)		
Aquatic		
Crustacea	EC50	Water flea (Daphnia pulex) 4.3 - 7.8 mg/l, 48 hours
Fish	LC50	Striped bass (Morone saxatilis) 10.302 - 16.743 mg/l, 96 hr

Components	Species	Test Results
Methanol (CAS 67-56-1)		
Aquatic		
Crustacea	EC50	Daphnia magna > 10000 mg/l, 48 hours
Fish	LC50	Bluegill (Lepomis macrochirus) 15400 mg/l, 96 hours

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12.2. Persistence and degradability

No data is available on the degradability of this product.

12.3. Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow)

Formaldehyde (CAS 50-00-0) 0.35

Methanol (CAS 67-56-1) -0.77

12.4. Mobility in soil

Mobile in soil.

12.5. Other adverse effects

No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods : Since emptied containers may retain product residue, follow label warnings even after container is emptied. Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose in accordance with all applicable regulations. The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

SECTION 14: Transport information

In accordance with DOT / IMDG / IATA

14.1. UN number

UN3334

14.2. UN proper shipping name

Proper Shipping Name (DOT) : Aviation regulated liquid, n.o.s. (Formaldehyde)

Proper Shipping Name (IMDG) : Aviation regulated liquid, n.o.s. (Formaldehyde)

Proper Shipping Name (IATA) : Aviation regulated liquid, n.o.s. (Formaldehyde)

14.3. Transport hazard class(es)

DOT

Transport hazard class(es) (DOT) : 9

IMDG

Transport hazard class(es) (IMDG) : 9

IATA

Transport hazard class(es) (IATA) : 9

14.4. Packing group

Packing group (DOT) : III

Packing group (IMDG) : N/A

Packing group (IATA) : III

14.5. Environmental hazards

Other information : No

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14.6. Special precautions for user

DOT

Ground: Not regulated as a dangerous good.

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IMDG

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IATA

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

No information available.

SECTION 15: Regulatory information

15.1. US Federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D) Not regulated.				
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)				
Formaldehyde (CAS 50-00-0)				
Cancer				
Skin sensitization				
Respiratory sensitization				
Eye irritation				
Skin irritation				
Respiratory tract irritation				
Acute toxicity				
Flammability				
CERCLA Hazardous Substance List (40 CFR 302.4)				
Formaldehyde (CAS 50-00-0) LISTED				
Methanol (CAS 67-56-1) LISTED				
Superfund Amendments and Reauthorization Act of 1986 (SARA)				
Immediate Hazard - Yes				
Delayed Hazard – Yes				
Fire Hazard - No				
Pressure Hazard - No				
Reactivity Hazard - No				
SARA 302 Extremely hazardous substance	Formaldehyde	50-00-0	100	500
SARA 311/312 Hazardous chemical	Yes			
SARA 313 (TRI reporting)				
<u>Chemical name</u>	<u>CAS number</u>	<u>% by wt.</u>		
Formaldehyde	50-00-0	4		
Methanol	67-56-1	1.1		

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15.2. US State regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Formaldehyde (CAS 50-00-0)

Methanol (CAS 67-56-1)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Formaldehyde (CAS 50-00-0)

Safe Drinking Water Act Not regulated. (SDWA)

Not regulated

US. Massachusetts RTK - Substance List

Formaldehyde (CAS 50-00-0)

Methanol (CAS 67-56-1)

US. New Jersey Worker and Community Right-to-Know Act

Formaldehyde (CAS 50-00-0)

Methanol (CAS 67-56-1)

US. Pennsylvania Worker and Community Right-to-Know Law

Formaldehyde (CAS 50-00-0)

Methanol (CAS 67-56-1)

US. Rhode Island RTK

Formaldehyde (CAS 50-00-0)

Methanol (CAS 67-56-1)

US. California Proposition 65

WARNING: This product can expose you to chemicals including Formaldehyde, which is known to the State of California to cause cancer, and Methanol, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Formaldehyde (CAS 50-00-0)

Methanol (CAS 67-56-1)

SECTION 16: Other information

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Sakura Finetek USA, Inc. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.