



MATERIAL SAFETY DATA SHEET

(In accordance with ISO 11014-1 Standard)

Product Name: Tissue-Tek[®] ClearFIX[™]

Revision Date: 2009-03-01

1. Identification of the Substance

Product Name: Tissue-Tek[®] ClearFIX[™] – (Product Codes #5996 and 5998)

Synonym(s): N/A

General Use: Formalin fixative

Manufactured For: Sakura Finetek USA, Inc.
Torrance, CA 90501 USA
Tel: 310-972-7800

Emergency Telephone Number:
800-424-9300 (Chemtrec)

2. Composition/Data on Components

Hazardous Component Specific Chemical Identity	CAS#	% Weight	Exposure Limits/Toxic Data
Formaldehyde	50-00-0	4%	PEL-0.75-ppm TWA STEL-2.00-ppm Action Level-0.5-ppm

3. Hazards Identification

EMERGENCY OVERVIEW

Colorless liquid; pungent odor.

Contains formaldehyde. Toxic by inhalation and if swallowed. Irritating to the eyes, respiratory system and skin. May cause sensitization by inhalation or by skin contact. Risk of serious damage to eyes. Potential cancer hazard; repeated or prolonged exposure increase the risk.

Potential Health Effects:

Primary route(s) of exposure: Eyes, skin, inhalation.

Inhalation: Formaldehyde vapors are irritating to the nose, throat and lower respiratory system. Human systemic effects by inhalation include olfactory, pulmonary, and personality changes.

Eye: Contact of liquid or vapor with eyes may cause irritation or burns.

Skin: Contact of liquid with skin may cause irritation.

Ingestion: Ingestion of liquid is likely to produce seriously adverse effects on the gastrointestinal system. Violent vomiting and diarrhea leading to collapse have been reported.

Chronic effects: Formaldehyde is a carcinogen and sensitizer. Allergic reactions, including contact dermatitis resembling eczema, can occur with repeated exposures. Long term exposure increases the risk of lung and nasopharyngeal cancer, as well as asthma. Individuals can become acclimated to various formaldehyde vapor concentrations.

Signs and symptoms: Affected skin will appear dry, tough and perhaps cracked. Affected corneas may appear cloudy; eyes may water and become reddened. Effects on the gastrointestinal tract may include nausea and/or vomiting. Effects on the respiratory system may include coughing and difficulty in breathing. Medical conditions known to be aggravated by exposure to this solution

HMIS Rating

Health: 2
Flammability: 1
Reactivity: 0
Protection: C

HMIS Rating Scale

Minimal: 0
Slight: 1
Moderate: 2
High: 3
Severe: 4

HMIS Rating Notes:

Protection = C (Safety Glasses, gloves, apron)

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4. First Aid Measures

Inhalation: Remove victim to fresh air if coughing or difficulty in breathing is experienced. Consult a physician if symptoms persist or worsen. Administer oxygen or artificial respiration as needed.

Eye: Flush eyes for at least 15 minutes in an eyewash station. If symptoms persist after washing, consult a physician.

Skin: Remove contaminated clothing, including footwear; wash before reuse or discard. For minor exposure, wash affected area with water and mild soap, rinsing thoroughly; apply a good quality skin lotion. In cases of prolonged, repeated or extensive exposure, rinse affected area or entire body for at least 15 minutes. For severe conditions, consult a physician.

Ingestion: Call a poison control center immediately. If victim is conscious, have him/her drink several glasses of water to dilute the solution. Induce vomiting only upon the advice of a physician or poison control authority.

Note to physician: ClearFIX™ is a histological fixative. If ingested, it will fix lining cells of the gastrointestinal tract.

5. Fire Fighting Measures

Flash point: >200°F (> 93°C), closed-cup.

Flammable limit: Not determined.

Autoignition temperature: Not determined.

Flammability classification: Combustible liquid (OSHA).

Flame propagation: None.

Hazardous products of combustion: Emits toxic vapors (formaldehyde).

Extinguishing media: ABC rated portable fire extinguishers should be used. Professional fire fighters may use water spray, dry chemical or carbon dioxide.

Fire fighting instructions: Sealed chemical suits and self-contained breathing apparatus are necessary for fighting formaldehyde fires involving substantial volumes of this product.

6. Accidental Release Measures

The size of a spill is defined in part by the local situation, especially regarding ventilation. At room temperature in a well-ventilated room, a few hundred milliliters might be considered a small spill. Toxic formaldehyde vapors are generated during a spill and may exceed OSHA's Permissible Exposure Limits (PEL). Wear protective gloves, rubber boots, impermeable aprons and full-face respirators. Use a damp sponge or mop to remove spilled liquid, or neutralize with a commercial kit. Wash contaminated area with water. Discard absorbents and other contaminated solids in a receptacle suitable for hazardous chemical waste. Liquid waste may be discarded down the drain with approval by wastewater authorities, or may be removed by a licensed waste hauler.

7. Handling and Storage

Handling: Wear a plastic or rubber apron, protective gloves and splash-proof goggles; this is mandated by OSHA. Avoid all contact with skin and eyes. Do not continue to wear contaminated clothing after a spill. Do not heat or microwave the solution, as vapor levels may become immediately dangerous to life and health.

Storage: Store at room temperature.

8. Exposure Controls/Personal Protection

Engineering Controls: Good general room ventilation is essential. Product should be used with local ventilation (fume hood).

PERSONAL PROTECTIVE EQUIPMENT

Respiratory: A NIOSH-approved respirator suitable for formaldehyde must be used if vapor levels exceed the exposure limits.

Skin: OSHA mandates the use of gloves; nitrile gloves are recommended. Do not use latex surgical gloves for protection against any hazardous liquid. An eyewash station and safety shower must be nearby, preferably in the same room, no more than 10 seconds away.

Eye: OSHA mandates the use of splash-proof goggles. If a face shield is worn as protection against biohazards, splash-proof goggles also must be used. An eyewash station and safety shower must be nearby, preferably in the same room, no more than 10 seconds away.

9. Physical and Chemical Properties

Odor: Pungent (formaldehyde) odor

Appearance: Colorless liquid

pH: 7.1-7.3

Vapor Pressure: Not determined.

Boiling Point: 207°F (97°C)

Freezing Point: Not determined.

Melting Point: Not applicable.

Pour Point: Not applicable.

Solubility in water: Complete.

Density: Not determined.

Specific Gravity: Not determined.

Viscosity: Not determined.

Volatile Organic: Not determined.

Flammability Class: III

10. Stability and Reactivity

Chemical stability: Stable at standard temperature and pressure.

Conditions to avoid: Heating this solution will give off irritating and potentially life-threatening vapors.

Incompatibility with other materials: Strong oxidants, ammonia, chlorine bleach or hydrochloric acid.

Hazardous decomposition products: None.

Hazardous polymerization: None.

11. Toxicological Information

The following toxicity data are researched from sources such as MSDS of raw materials.

Acute eye effects: Eye irritation threshold in humans is 3-10 ppm; lacrimation and discomfort at lower levels in some individuals; contact with the solution may fix the cornea and surrounding tissue. In rabbits, 50 µg of 37% formaldehyde solution over 24 hours produced severe irritation.

Acute skin effects: Contact with the solution may fix the skin, killing surface cells and causing drying, hardening and cracking.

Acute oral effects: OSHA considers chemicals to be toxic if their LD50 is at or below 500 mg/kg. LD50 is the dose killing 50% of the test animals in a given time (usually 4 hours); LDLo is the lowest dose causing death. Using 37% formaldehyde solution, the LD50 was 260 mg/kg in guinea pigs, 800 mg/kg in rats and 42 mg/kg in mice. In humans, the LDLo is 108 mg of 37% formaldehyde solution/kg.

Acute inhalation effects: OSHA considers chemicals to be toxic if their LC50 is at or below 20 mg/kg. LC50 is the airborne concentration killing 50% of the test animals; LCLo is the lowest concentration causing death. Using 37% formaldehyde solution, the LC50 was 590 mg/kg; the LCLo in humans was 17 mg/kg.

Chronic effects/carcinogenicity: Formaldehyde is an OSHA carcinogen and sensitizer.

Teratology: None known.

Reproductive effects: None known.

Mutagenicity: Positive.

12. Ecological Information

The following ecological information is taken from MSDS and the *Handbook of Environmental Data on Organic Chemicals*, 2nd Edition, 1983.

Ecotoxicity: The following data are from studies using 37% formaldehyde in flow-through bioassays.

Rainbow trout: 96 hr LC50 = 118 µl/l

Atlantic salmon: 96 hr LC50 = 173 µl/l

Lake trout: 96 hr LC50 = 100 µl/l

Black bullhead: 96 hr LC50 = 62.1 µl/l

Channel catfish: 96 hr LC50 = 65.8 µl/l

Green sunfish: 96 hr LC50 = 173 µl/l

Bluegill: 96 hr LC50 = 100 µl/l

Smallmouth bass: 96 hr LC50 = 136 µl/l

Largemouth bass: 96 hr LC50 = 143 µl/l

Environmental fate: Formaldehyde is oxidized to formic acid, then to carbon dioxide and water, or reduced to methanol, then to carbon dioxide and water. Phosphate salts may contribute to eutrophication.

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13. Advice on Disposal

Disposal Method: This product is toxic due to formaldehyde content. Dispose via a licensed waste hauler. Do not mix waste streams unless instructed to do so by your waste hauler. Some wastewater treatment authorities may grant permission for drain disposal of limited amounts. Regardless of the method chosen for disposal, be sure to follow federal, state (provincial) and local regulations. Proper waste disposal is the generator's responsibility.

14. Transport Information

Packaging for hazardous shipments must meet the specifications as required by the current editions of International Air Transportation Association (IATA) Dangerous Goods Regulations and the United States Department of Transportation 49 CFR.

DOT (ground): Not regulated.

DOT (air) and IATA: Proper Shipping Name: Aviation regulated liquid, n.o.s. (formaldehyde) UN #: 3334 Hazard Class: 9 Packing Group: None assigned

15. Regulatory Information

OSHA (USA): Under the Hazard Communication Standard, the Formaldehyde Standard and the Laboratory Standard, this product is a hazardous material: it is an irritant, sensitizer and carcinogen, and it is toxic.

This product is required to bear the OSHA hazard warning for formaldehyde:

Caution: Contains formaldehyde. Toxic by inhalation and if swallowed. Irritating to the eyes, respiratory system, and skin. May cause sensitization by inhalation or by skin contact. Risk of serious damage to eyes. Potential cancer hazard; repeated or prolonged exposure increases the risk.

The three OSHA Standards cited above mandate that exposed workers be monitored for formaldehyde exposure, and receive proper training in the properties of this product, work practices involved with its handling and disposal, and interpretation of its MSDS.

FDA (USA): This product is for laboratory use as a fixative in histology.

EPA (USA): For disposal purposes, formaldehyde is considered toxic. Formaldehyde is a reportable substance under SARA Title III.

16. Other Information

This Material Safety Data Sheet has been furnished on request. A revised Material Safety Data Sheet will be furnished only if requested, also in case of specification changes. The above information, which is accurate to the best of our knowledge and belief, describes the safety aspects of our product but does not warrant any product properties. The company gives no warranty as to the accuracy or completeness of such information. It is the user's responsibility to determine the suitability of the information for their particular purposes.

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