Tissue-Tek Xpress® Processing Reagent #1 & #2, Formula 3

Safety Data Sheet

US-SDS according to the federal final rule of hazard communication revised on 2012 (HazCom 2012)
Issue date: 12/01/2008
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SECTION 1: Identification

1.1. Identification

Product form	:	Mixture
Product name	:	Tissue-Tek Xpress® Processing Reagent #1 & #2, Formula 3
Product code	:	7151 (Reagent #1) and 7152 (Reagent #2)

1.2. Recommended use and restrictions on use

Tissue-Tek Xpress® Rapid Tissue Processors

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

Flammable liquids	Category 2
Serious eye damage/eye irritation	Category 2A
Specific target organ toxicity, single exposure	Category 3 narcotic effects

2.2. GHS Label elements, including precautionary statements

GHS US labeling

Signal Word Danger

Hazard Statement Highly flammable liquid and vapor. Causes serious eye irritation. May cause drowsiness or dizziness.

Precautionary Statement Keep away from heat/sparks/open flames/hot surfaces. No smoking. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting// equipment. Keep container tightly closed. Use only non-sparking tools. Take precautionary measures against static discharge. Avoid breathing mist or vapor. Wash hands thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves/eye protection/face protection.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
If inhaled: Remove person to fresh air and keep comfortable for breathing.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a poison center/doctor if you feel unwell.
If eye irritation persists: Get medical advice/attention.
In case of fire: Use appropriate media to extinguish.
Store in a well-ventilated place. Keep container tightly closed. Keep cool. Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3. Other hazards which do not result in classification

None

2.4. Unknown acute toxicity (GHS US)

None

SECTION 3: Composition/Information on ingredients

3.1. Substances

Mixture

3.2. Mixtures

Name	CAS Number	%
TRADE SECRET #1	Proprietary	Trade Secret
TRADE SECRET #2	Proprietary	Trade Secret
TRADE SECRET #3	Proprietary	Trade Secret

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 : 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.

First-aid measures after skin contact : Take off immediately all contaminated clothing. Rinse skin with water/shower.
Get medical attention if irritation develops and persists.

First-aid measures after eye contact : Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

First-aid measures after ingestion : Rinse mouth. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical attention if symptoms occur.

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

May cause drowsiness and dizziness. Headache. Nausea, vomiting. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. 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.

4.3. Immediate medical attention and special treatment, if necessary

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

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Alcohol resistant foam. Water fog. Dry chemical powder. Dry chemicals. Carbon dioxide (CO2).
Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Specific hazards arising from the chemical

Hazardous decomposition products in case of fire: Vapors may form explosive mixtures with air. Vapors may travel considerable distance to a source of ignition and flash back. 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. In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk. Cool containers exposed to heat with water spray and remove container, if no risk is involved. Use standard firefighting procedures and consider the hazards of other involved materials.

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.

6.1.2. For emergency responders

Protective equipment : Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained.

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 : Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Take precautionary measures against static discharge. Use only non-sparking tools. Keep combustibles (wood, paper, oil, etc.) away from spilled material. This product is miscible in water. Never return spills to original containers for re-use.

Other information : 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. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water.
Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

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 : Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. When using do not smoke. Explosion-proof general and local exhaust ventilation. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Avoid breathing mist or vapor. Avoid contact with eyes. Avoid prolonged or repeated contact with skin. Avoid prolonged exposure. Use only in well-ventilated areas. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Hygiene measures : When using do not smoke. 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.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store locked up. Keep away from heat and sources of ignition. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in a cool, dry place out of direct sunlight. Store in original tightly closed container. Store in a well-ventilated place. Keep in an area equipped with sprinklers. Store away from incompatible materials (see Section 10 of the SDS).

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
TRADE SECRET #1 (CAS Proprietary)	PEL	980 mg/m3	
TRADE SECRET #2 (CAS Proprietary)	PEL	400 ppm 2400 mg/m3	
TRADE SECRET #3 (CAS Proprietary)	PEL	1000 ppm 5 mg/m3	 Mist

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
TRADE SECRET #1 (CAS Proprietary)	STEL	400 ppm	
	TWA	200 ppm	
TRADE SECRET #2 (CAS Proprietary)	STEL	750 ppm	
	TWA	500 ppm	
TRADE SECRET #3 (CAS Proprietary)	TWA	5 mg/m3	Inhalable Fraction

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
TRADE SECRET #1 (CAS Proprietary)	STEL	1225 mg/m3 500 ppm	
	TWA	980 mg/m3 400 ppm	
TRADE SECRET #2 (CAS Proprietary)	TWA	590 mg/m3 250 ppm	
TRADE SECRET #3 (CAS Proprietary)	STEL	10 mg/m3	Mist
	TWA	5 mg/m3	Mist

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
TRADE SECRET #1 (CAS Proprietary)	40 mg/l	Acetone	Urine	*
TRADE SECRET #2 (CAS Proprietary)	50 mg/l	Acetone	Urine	*

*- For sampling details, please see the source document.

8.2. Appropriate engineering controls

Appropriate engineering controls : If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash fountain and emergency showers are recommended.

Environmental exposure controls	:	Explosion-proof general and local exhaust ventilation. 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.

8.3. Individual protection measures/Personal protective equipment

Hand protection:
Wear appropriate chemical resistant gloves.

Eye protection:
Wear safety glasses with side shields (or goggles).

Skin and body protection:
Wear suitable protective clothing.

Respiratory protection:
Chemical respirator with organic vapor cartridge and full facepiece.

Personal protective equipment symbol(s):

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Liquid.
Color	:	Clear, colorless.
Odor	:	Sharp Odor.
Odor threshold	:	Not available.
pH	:	Not available.
Melting point	:	-139 °F (-95 °C)
Freezing point	:	-139 °F (-95 °C)
Boiling point	:	133.7 °F (56.5 °C) @ 760 mmHg
Flash point	:	-4.0 °F (-20.0 °C)
Relative evaporation rate (butyl acetate=1)	:	7.7 (BuAc = 1)
Flammability	:	Not applicable.
Vapor pressure	:	400 mm Hg @ 39.5 °C
Relative vapor density at 20°C	:	2 (Air = 1)
Relative density	:	0.792 @ 20 °C
Solubility	:	Soluble
Partition coefficient n-octanol/water (Log Pow)	:	Not available.
Auto-ignition temperature	:	869 °F (465 °C)
Decomposition temperature	:	Not available.
Viscosity, kinematic	:	Not available.
Viscosity, dynamic	:	Not available.
Explosion limits	:	Not available.
Explosive properties	:	Not explosive.
Oxidizing properties	:	Not oxidizing.

9.2. Other information

No information available.

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

Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.

10.5. Incompatible materials

Concentrated nitric and sulfuric acid mixtures, oxidizing materials, chlorine compounds Chloroformates. Acids. Strong oxidizing agents. Alkalis. Bases. Bromine. Hydrogen peroxide (H2O2). Magnesium. Calcium carbide. Potassium tert-butoxide.

10.6. Hazardous decomposition products

Carbon monoxide (CO) Carbon dioxide (CO2).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Expected to be a low ingestion hazard.

TRADE SECRET #1 (CAS Proprietary)

Component	Species	Test Results
LD50	Rat	4.7 g/kg

TRADE SECRET #2 (CAS Proprietary)

Component	Species	Test Results
LD50	Rat	5800 mg/kg

TRADE SECRET #3 (CAS Proprietary)

Component	Species	Test Results
LD50	Rat	> 5000 mg/kg

Acute toxicity (dermal) : Prolonged skin contact may cause temporary irritation.

TRADE SECRET #1 (CAS Proprietary)

Component	Species	Test Results
LD50	Rabbit	12800 mg/kg

TRADE SECRET #2 (CAS Proprietary)

Component	Species	Test Results
LD50	Rabbit	20 ml/kg

TRADE SECRET #3 (CAS Proprietary)

Component	Species	Test Results
LD50	Rabbit	> 2000 mg/kg

Acute toxicity (inhalation) : May cause drowsiness and dizziness. Prolonged inhalation may be harmful.

TRADE SECRET #2 (CAS Proprietary)

Component	Species	Test Results
LC50	Rat	50 mg/l, 8 Hours

TRADE SECRET #3 (CAS Proprietary)

Component	Species	Test Results
LC50	Rat	> 5 mg/l

Skin corrosion/irritation	:	Prolonged skin contact may cause temporary irritation
Serious eye damage/irritation	:	Causes serious eye irritation.
Respiratory or skin sensitization	:	Not a respiratory sensitizer. This product is not expected to cause skin sensitization.
Germ cell mutagenicity	:	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	:	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
Reproductive toxicity	:	This product is not expected to cause reproductive or developmental effects.
STOT-single exposure	:	May cause drowsiness and dizziness.
STOT-repeated exposure	:	Not classified.
Aspiration hazard	:	Not an aspiration hazard.
Other	:	Prolonged inhalation may be harmful.Headache. May cause drowsiness and dizziness. Nausea, vomiting. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.

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
TRADE SECRET #1			
Aquatic			
Fish	LC50	Bluegill (Lepomis macrochirus)	> 1400 mg/l, 96 hours
TRADE SECRET #2			
Aquatic			
Fish	LC50	Fathead minnow (Pimephales promelas)	> 100 mg/l, 96 hours
TRADE SECRET #3			
Aquatic			
Acute			
Crustacea	LL50	Invertebrates (Invertebrates)	100 mg/l
Fish	LL50	Fish	10 mg/l

12.2. Persistence and degradability

This material is readily biodegraded.

12.3. Bioaccumulative potential

The product is not expected to bioaccumulate.

Partition coefficient n-octanol / water (log Kow)

TRADE SECRET #1	0.05
TRADE SECRET #2	-0.24

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 : Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Empty containers or liners may retain some product residues. Dispose of contents/container in accordance with local/regional/national/international regulations.

SECTION 14: Transport information

In accordance with DOT / IMDG / IATA

14.1. UN number

UN1993

14.2. UN proper shipping name

Proper Shipping Name (DOT) : Flammable liquids, n.o.s. (Acetone)
Proper Shipping Name (IMDG) : Flammable liquids, n.o.s. (Acetone)
Proper Shipping Name (IATA) : Flammable liquids, n.o.s. (Acetone)

14.3. Transport hazard class(es)

DOT
Transport hazard class(es) (DOT) : 3

IMDG
Transport hazard class(es) (IMDG) : 3

IATA
Transport hazard class(es) (IATA) : 3

14.4. Packing group

Packing group (DOT) : II
Packing group (IMDG) : II
Packing group (IATA) : II

14.5. Environmental hazards

Other information : No

14.6. Special precautions for user

DOT
Read safety instructions, SDS and emergency procedures before handling. Not subject to regulation if transported by ground or water.

IMDG
Read safety instructions, SDS and emergency procedures before handling. Not subject to regulation if transported by ground or water.

IATA
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

Not established.

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)
Not listed.
CERCLA Hazardous Substance List (40 CFR 302.4)
TRADE SECRET #2 (CAS Proprietary) LISTED
Superfund Amendments and Reauthorization Act of 1986 (SARA)
Hazard categories Immediate Hazard - Yes Delayed Hazard – No Fire Hazard - Yes Pressure Hazard - No Reactivity Hazard - No
SARA 302 Extremely hazardous substance
Not listed.
SARA 311/312 Hazardous Chemical - Yes
SARA 313 (TRI reporting)
Not regulated.

15.2. International regulations

Country(s) or Region	Inventory Name	On Inventory (Yes/No)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes
*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).		
*A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).		

15.3. US State regulations

US. Massachusetts RTK - Substance List

TRADE SECRET #2 (CAS Proprietary)

TRADE SECRET #3 (CAS Proprietary)

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

TRADE SECRET #2 (CAS Proprietary)

TRADE SECRET #3 (CAS Proprietary)

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

TRADE SECRET #2 (CAS Proprietary)

TRADE SECRET #3 (CAS Proprietary)

US. Rhode Island RTK

TRADE SECRET #2 (CAS Proprietary)

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

SECTION 16: Other information

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

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.