SAFETY DATA SHEET

SDS#: 0004409-01 Rev F
Revision Date: 5/27/16

Original Preparation Date: 03/29/10

1. Identification

Product identifier **Tissue-Tek Xpress® x Series Processing Reagent #1**

Other means of identification

Product code 7731 (a component of Reagent Kit 7730), 7731-04 (a component of Reagent Kit 7760)

Recommended use Tissue-Tek Xpress® x-series processing instruments

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer/Supplier Sakura Finetek USA Inc.

Address 1750 West 214th St.
Torrance, CA 90501

Telephone 1-310-972-7800

Emergency phone number CHEMTREC: 1-800-424-9300

Email SDSsupport@sakuraus.com

2. Hazard(s) identification

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

OSHA defined hazards Not classified.

Label elements

Signal word Danger

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

Precautionary statement

Prevention 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.

Response 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.

Storage Store in a well-ventilated place. Keep container tightly closed. Keep cool. Store locked up.

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

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information None.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Proprietary #1	Proprietary	Proprietary

Proprietary #2	Proprietary	Proprietary
Proprietary #3	Proprietary	Proprietary
Dimethyl Sulfoxide	67-68-5	1.4

4. First-aid measures

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.

Skin contact Take off immediately all contaminated clothing. Rinse skin with water/shower. Get medical attention if irritation develops and persists.

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.

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.

Most important symptoms/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.

Indication of immediate medical attention and special treatment needed Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

General information 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.

5. Fire-fighting measures

Suitable extinguishing media Alcohol resistant foam. Water fog. Dry chemical powder. Dry chemicals. Carbon dioxide (CO2).

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical 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.

Special protective equipment and precautions for firefighters Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions 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.

Specific methods Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards Highly flammable liquid and vapor.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. 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. For personal protection, see section 8 of the SDS.

Methods and materials for containment and 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.

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.

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

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

7. Handling and storage

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.

Conditions for safe storage, including any incompatibilities

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).

8. Exposure controls/personal protection

Occupational exposure limits

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

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

US. ACGIH Threshold Limit Values

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

US. NIOSH: Pocket Guide to Chemical Hazards

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

US. Workplace Environmental Exposure Level (WEEL) Guides

Components	Type	Value
Dimethyl Sulfoxide (CAS 67-68-5)	TWA	250 ppm

Biological limit values

ACGIH Biological Exposure Indices

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

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

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

Individual protection measures, such as personal protective equipment

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

Skin protection

Hand protection Wear appropriate chemical resistant gloves.

Skin protection

Other Wear suitable protective clothing.

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

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations 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.

9. Physical and chemical properties

Appearance Clear, colorless liquid.

Physical state Liquid.

Form Liquid.

Color Clear, colorless.

Odor Sharp Odor.

Odor threshold Not available.

pH Not available.

Melting point/freezing point -139 °F (-95 °C)

Initial boiling point and boiling range 133.7 °F (56.5 °C) @ 760 mmHg

Flash point -4.0 °F (-20.0 °C)

Evaporation rate 7.7

Flammability (solid, gas) Not applicable.

Upper/lower flammability or explosive limits

Flammability limit - lower (%) 2.5 %

Flammability limit - upper (%) 12.8 %

Explosive limit - lower (%) Not available.

Explosive limit - upper (%) Not available.

Vapor pressure 400 mm Hg @ 39.5 °C

Vapor density 2 (Air=1)

Relative density 0.79 @ 20 °C

Solubility(ies)

Solubility (water) Soluble

Partition coefficient (n-octanol/water) Not available.

Auto-ignition temperature	869 °F (465 °C)
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
VOC (Weight %)	100 % @ 21 °C

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Concentrated nitric and sulfuric acid mixtures, oxidizing materials, chlorine compounds Chloroformates. Acids. Strong oxidizing agents. Chlorine. Alkalis. Bases. Bromine. Hydrogen peroxide (H2O2). Magnesium. Calcium carbide. Potassium tert-butoxide.
Hazardous decomposition products	Carbon monoxide (CO) Carbon dioxide (CO2).

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause drowsiness and dizziness. Prolonged inhalation may be harmful.
Skin contact	Prolonged skin contact may cause temporary irritation.
Eye contact	Causes serious eye irritation.
Ingestion	Expected to be a low ingestion hazard.
Symptoms related to the physical, chemical and toxicological characteristics	Headache. May cause drowsiness and dizziness. Nausea, vomiting. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.

Information on toxicological effects

Acute toxicity Narcotic effects.

Components	Species	Test Results
Proprietary #1 (CAS Proprietary)		
Acute		
Dermal		
LD50	Rabbit	20 ml/kg
Inhalation		
LC50	Rat	50 mg/l, 8 Hours
Oral		
LD50	Rat	5800 mg/kg
Proprietary #2 (CAS Proprietary)		
Acute		
Dermal		
LD50	Rabbit	12800 mg/kg
Oral		
LD50	Rat	4.7 g/kg
Proprietary #3 (CAS Proprietary)		
Acute		
Dermal		
LD50	Rabbit	> 2000 mg/kg
Inhalation		
LC50	Rat	> 5 mg/l

Components	Species	Test Results
Oral		
LD50	Rat	> 5000 mg/kg

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

Serious eye damage/eye irritation Causes serious eye irritation.

Respiratory or skin sensitization

Respiratory sensitization Not a respiratory sensitizer.

Skin sensitization 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.

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

NTP Report on Carcinogens

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

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

Specific target organ toxicity - single exposure May cause drowsiness and dizziness.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Not an aspiration hazard.

Chronic effects Prolonged inhalation may be harmful.

12. Ecological information

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

Persistence and degradability This material is readily biodegraded.

Bioaccumulative potential The product is not expected to bioaccumulate.

Partition coefficient n-octanol / water (log Kow)

Dimethyl Sulfoxide (CAS 67-68-5)	-2.03
Proprietary #1	-0.24
Proprietary #2	0.05

Mobility in soil Mobile in soil.

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.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

UN number	UN1993
UN proper shipping name	Flammable liquids, n.o.s. (Acetone)
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Label(s)	3
Packing group	II
Environmental hazards	
Marine pollutant	No
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling. Not subject to regulation if transported by ground or water.
Special provisions	IB2, T7, TP1, TP8, TP28
Packaging exceptions	150
Packaging non bulk	202
Packaging bulk	242

IATA

UN number	UN1993
UN proper shipping name	Flammable liquid, n.o.s. (Acetone)
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	II
Environmental hazards	No.
ERG Code	3H
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	UN1993
UN proper shipping name	FLAMMABLE LIQUID, N.O.S. (Acetone)
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	II
Environmental hazards	
Marine pollutant	No.
EmS	F-E, S-E
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling. Not subject to regulation if transported by ground or water.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not established.

15. Regulatory information

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)

Not 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.

Other federal regulations

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

Not regulated.

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

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

US. Massachusetts RTK - Substance List

Proprietary #3 (CAS Proprietary)

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

Dimethyl Sulfoxide (CAS 67-68-5)
Proprietary #3 (CAS Proprietary)

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

Proprietary #3 (CAS Proprietary)

US. Rhode Island RTK

Not regulated.

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.

International Inventories

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).

16. Other information, including date of preparation or last revision

Issue date 29-MAR-2010
Revision date 27-MAY-2016

Version #	F
HMIS® ratings	Health: 2 Flammability: 3 Physical hazard: 0
NFPA ratings	
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