SAFETY DATA SHEET

Issue Date 26-Sept-2014 **Revision Date** **Version** 1

1. IDENTIFICATION

Product Identifier
Product Name TEMPO LIQUID

Other means of identification
SDS# 025
UN/ID No UN1993
Product Code 1003, 1004, 1006, 1007, 1008, 1012, 1023, 1034, 1056

Recommended use of the chemical and restrictions on use
Recommended Use Fabrication of denture relines

Details of the supplier of the safety data sheet
Supplier Address
Lang Dental Mfg. Co., Inc.
175 Messner Dr.
Wheeling, IL 60090
USA

Emergency telephone number
Company Phone Number 847-215-6622
Emergency Telephone (INFOTRAC) 352-323-3500 (International)
800-535-5053 (North America)

2. HAZARDS IDENTIFICATION

Classification

Acute toxicity – Dermal	Category 4
Acute toxicity – Inhalation (Gases)	Category 4
Reproductive toxicity	Category 1B
Flammable liquids	Category 2

Signal word
Danger

Hazard statements Harmful in contact with skin
Harmful if inhaled
May damage fertility or the unborn child.
Highly flammable liquid and vapor

Physical State Liquid **Appearance** Colorless **Odor** Mint, alcohol-like

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.
Do not breathe dust, fume, gas, mist, vapors or spray.
Keep away from heat, spark, open flame and hot surface. NO SMOKING.
Keep container tightly closed.
Ground/bond container and receiving equipment.
Use explosion-proof equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.

Precautionary Statements – Response
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 skin irritation or rash occurs, get medical advice/attention.
IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
IN CASE OF FIRE: Use CO_2, dry chemical or foam for extinction.

Precautionary Statements – Storage Store in a well-ventilated place.
Keep container tightly closed.
Store locked up.

Precautionary Statements – Disposal Dispose of contents/container to an approved waste disposal plant.

Hazards not otherwise classified (HNOC) May be harmful if swallowed.
May be harmful in contact with skin.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight - %	Trade Secret
Citric Plasticizer	Proprietary	< 85	*
Ethyl alcohol	64-17-5	< 25	*

*Specific CAS No and chemical weight have been withheld as a trade secret.

4. FIRST AID MEASURES

First aid measures

General advice If exposed or concerned, get medical advice or attention.

Inhalation Remove victim to fresh air and keep at rest in a position comfortable for breathing. Keep patient warm and at rest. If not breathing, give artificial respiration. Call a physician or poison control center immediately.

Eye contact Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Call a physician immediately.

Ingestion Do NOT induce vomiting. Wash out mouth with water and give 200-300 mL (half pint) of water to drink. Get medical attention. Never give anything by mouth to an unconscious person.

Skin Contact Wash off immediately with plenty of soap and water. Take off contaminated clothing. Wash contaminated clothing before reuse. If skin irritation or rash occurs, get medical advice/attention.

Most important symptoms and effects, both acute and delayed

Symptoms May cause skin and eye irritation. May cause irritation to mucous membranes and upper respiratory tract. Short-term overexposure above 1,000 ppm by inhalation may cause central nervous system (CNS) effects such as headache and irritation of the eyes, nose and throat. If continued for more than an hour, additional CNS effects such as dizziness, drowsiness, loss of appetite and inability to concentrate may occur. Gastrointestinal (stomach) effects may occur with symptoms such as nausea and vomiting.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Extinguishing Media
Suitable: Dry chemical, carbon dioxide (CO_2), water spray (fog), alcohol resistant foam
Unsuitable: Not determined

Specific hazards arising from the chemical
Flammable. Sealed containers may rupture explosively if hot. Vapors may travel to source of ignition and flash back. Use a water spray or fog to reduce or direct vapors. Cool containers exposed to flames with water until well after the fire is out.

Hazardous Combustion Products: Carbon oxides

Sensitivity to Mechanical Impact: No
Sensitivity to Static Discharge: Yes

Protective equipment and precautions for firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Fight fire from a safe location.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Eliminate all ignition sources. No smoking, flares, sparks or flames in immediate area. All equipment used when handling the product must be grounded. Use personal protective equipment as required.

Environmental precautions Prevent product from entering drains. Spillages or uncontrolled discharges into watercourses must be alerted to the appropriate regulatory body.

Methods and material for containment and clean-up

Method for containment Collect using an inert absorbent material and place in appropriate containers for disposal. Do not use combustible materials such as sawdust.

Method for clean-up Use non-sparking hand tools and explosion-proof electrical equipment. Keep in suitable closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Keep containers closed when not in use. All equipment used when handling the product must be grounded. Use non-sparking hand tools and explosion-proof electrical equipment. Avoid contact with skin and eyes. Avoid breathing vapors or mists. Use only in well-ventilated areas. Vapors are heavier than air and may travel along the floor and in the bottom of containers. Take precautionary measures against static discharges. Wash thoroughly after handling. Keep away from heat, sparks, open flames and hot surfaces. NO SMOKING. Use personal protection recommended in Section 8.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks, flame and other sources of ignition (i.e. pilot lights, electric motors and static electricity). Protect from direct sunlight. Keep at a temperature not exceeding 25°C. Store locked up.

Packaging Materials Keep in original container.

Incompatible materials Strong oxidizing agents, silver salts, acid chlorides, alkali metals, metal hydrides

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure guidelines Consideration should be given to the work procedures involved and the potential extent of exposure as they may determine whether a higher level of protection is required. The following information is given as general guidance.

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Citric plasticizer	TWA: 5 mg/m^3	TWA: 5 mg/m^3 TWA: 5 mg/m^3 (vacated)	IDLH: 4000 mg/m^3 TWA: 5 mg/m^3
Ethyl alcohol 64-17-5	STEL: 1000 ppm	TWA: 1000 ppm TWA: 1900 mg/m^3 TWA: 1000 ppm (vacated) TWA: 1900 mg/m^3 (vacated)	IDLH: 3300 ppm TWA: 1000 ppm TWA: 1900 mg/m^3

Appropriate engineering controls

Engineering controls Apply technical measures to comply with the occupational exposure limits. Eyewash stations.

Individual protection measures, such as personal protective equipment

Eye / face protection Depending on the use of this product, safety glasses or goggles may be worn. If necessary, refer to US OSHA 29CFR SS1910.133, Canadian standards or the European Standard EN 166. Ensure that an eyewash station, sink or washbasin is available in case of exposure to eyes.

Skin and body protection If anticipated that prolonged and repeated skin contact will occur during use of this product, wear gloves for routine industrial use. If necessary, refer to US OSHA 29CFR SS1910.138 or the appropriate standards of Canada or the EC member states. Wear suitable protective clothing.

Respiratory protection Wear suitable respiratory equipment if exposure to levels above the occupational exposure limit is likely. A suitable mask with filter type A may be appropriate. In the event of formation of particularly high levels of vapor, a self-contained breathing apparatus may be appropriate.

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	**Odor**	Mint, alcohol-like
Appearance	Colorless	**Odor threshold**	Not determined
Color	Clear		

Property	**Values**	**Remarks / Method**
pH	Not determined	
Melting point / freezing point	-144°C / -227.2°F	
Boiling point / boiling range	78.4°C / 173.12°F	
Flash point	19.4°C / 67°F	
Evaporation rate	Not determined	
Flammability (solid, gas)	n/a (liquid)	
Flammability limits in air		
Upper flammability limit	Not established	
Lower flammability limit	Not established	
Vapor pressure	45 mm Hg	@ 20°C
Vapor density	1.59	@15.5°C (Air = 1)
Specific gravity	0.996-0.998	
Water solubility	Completely soluble	
Solubility in other solvents	Not determined	
Partition coefficient	Not determined	
Autoignition temperature	Not established	
Decomposition temperature	Not determined	
Kinematic viscosity	Not determined	
Dynamic viscosity	Not determined	
Explosive properties	Not determined	
Oxidizing properties	Not determined	

Other information

Density 0.996-0.998

10. STABILITY AND REACTIVITY

Reactivity Not reactive under normal conditions

Chemical stability Stable under recommended storage conditions.

Possibility of hazardous reactions None under normal processing

Hazardous polymerization Hazardous polymerization does not occur.

Conditions to avoid
Excessive heat, sparks, flames. Take precautionary measures against static discharges. Avoid all possible sources of ignition. Contamination.

Conditions to avoid Excessive heat, sparks, flames, sources of ignition, static discharge, direct sunlight, moisture

Incompatible materials Strong oxidizing agents, silver salts, acid chlorides, alkali metals, metal hydrides

Hazardous decomposition products None under normal conditions

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposures

Product information

Inhalation	Harmful if inhaled
Eye contact	Avoid contact with eyes.
Skin contact	Harmful in contact with skin
Ingestion	Not expected to be toxic

Component information

Chemical Name	ORAL LD50	DERMAL LD50	INHALATION LC50
Citric plasticizer	6300 mg/kg (rat)	> 2000 mg/kg (rabbit)	>15.68 mg/L (rat) 4 h
Ethyl Alcohol 64-17-5	7060 mg/kg (rat)	-	124.7 mg/L (rat) 4 h

Information on physical, chemical and toxicological effects

Symptoms May cause skin and eye irritation. May cause irritation to the mucous membranes and upper respiratory tract.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization May cause allergic skin reaction.

Carcinogenicity Ethyl alcohol has been shown to be carcinogenic in long-term studies only when consumed as an alcoholic beverage.

Chemical Name	ACGIH	IARC	NTP	OSHA
Ethyl alcohol 64-17-5	A3	Group 1	Known	X

IARC (International Agency for Research on Cancer)
Group 1 IARC Carcinogenic to humans

Reproductive toxicity May damage fertility or the unborn child.

Numerical measures of toxicity – Product Not determined

The following values are calculated based on chapter 3.1 of the GHS document.

ATEmix (oral)	6439	mg/kg
ATEmix (dermal)	1100	mg/kg
ATEmix (inhalation-gas)	4499	mg/L
ATEmix (inhalation-dust/mist)	19	mg/L
ATEmix (inhalation-vapor	124.7	mg/L

12. ECOLOGICAL INFORMATION

Ecotoxicity Not classified as harmful or toxic to fish, algae and higher aquatic plants

Chemical Name	Algae / aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Citric plasticizer	0.4: 96 h Pseudokirchneriella subcapitata mg/L EC50 static 1.2: 72 h Desmodesmus subspicatus mg/L EC50	0.31 – 5.45: 96 h Pimephales promelas mg/L LC50 static 0.42 – 1.28: 96 h Lepomis macrochirus mg/L LC50 static 0.71 – 1.2: 96 h Pimephales promelas mg/L LC50 flow-through 1.24 – 5.3: 96 h Oncorhynchus mykiss mg/L LC50 static	EC50 = 10.9 mg/L 30 min EC50 = 10.9 mg/L 5 min EC50 =11.1 mg/L 15 min EC50 = 2.2 mg/L 24 h	2.99 48 h Daphnia magna mg/L EC50 static 3.4: 48 h Daphnia magna mg/L EC50

		1.38 – 1.74: 96 h Lepomis macrochirus mg/L LC50 flow-through > 1.24: 96 h Oncorhynchus mykiss mg/L LC50 flow-through		
Ethyl alcohol 64-17-5	-	12.0 – 16.0: 96 h Oncorhynchus mykiss mL/L LC50 static 100: 96 h Pimephales promelas mg/L LC50 static 13400 - 15100: 96 h Pimephales promelas mg/L LC50 flow-through	-	9268 – 14221: 48 h Daphnia magna mg/L LC50 10800: 24 h Daphnia magna mg/L EC50 2: 48 h Daphnia magna mg/L EC50

Persistence and degradability Material is readily biodegradable

Bioaccumulation This product has low potential for bioaccumulation.

Mobility This product is water soluble and may spread in water systems.

Chemical Name	Partition coefficient
Citric plasticizer	5.38
Ethyl alcohol 64-17-5	-0.32

Other adverse effects For ethyl alcohol: When spilled on the land, it is apt to volatilize, biodegrade and/or leach into the ground water. It is anticipated based on physical properties including water solubility, vapor pressure and octanol/water coefficient (log P=-0.31) that water will serve as the final media. Based on these factors it is anticipated that this substance will neither adsorb to soil nor bioconcentrate in aquatic organisms. Once in water photolysis, oxidation, hydrolysis and biodegradation are anticipated to occur.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes Dispose of in accordance with federal, state and local regulations.

Contaminated Packaging Reuse of empty containers is not recommended. Employees should be advised of the potential hazards due to residual material associated with empty containers. Dispose of all empty containers in accordance with federal, state and local regulations.

Chemical Name	RCRA	RCRA – Basis for Listing	RCRA – D Series Wastes	RCRA – U Series Wastes
Citric plasticizer	U069	Included in waste stream; F039	-	U069

Chemical Name	California Hazardous Waste Status
Ethyl alcohol 64-17-5	Toxic Ignitable

14. TRANSPORTATION INFORMATION

DOT

UN / ID No	UN1993
Proper shipping name	Flammable liquid, n.o.s. (Ethyl alcohol / plasticizer solution)
Hazard Class	3
Packing Group	II

IATA

UN / ID No	UN1993
Proper shipping name	Flammable liquid, n.o.s. (Ethyl alcohol / plasticizer solution)

Hazard Class	3
Packing Group	II

IMDG

UN / ID No	UN1993
Proper shipping name	Flammable liquid, n.o.s. (Ethyl alcohol / plasticizer solution)
Hazard Class	3
Packing Group	II

15. REGULATORY INFORMATION

International Inventories

TSCA	Listed	United States Toxic Substances Control Act 8(b) Inventory
DSL	Listed	Canadian Domestic Substances List
EINECS	Listed	European Inventory of Existing Chemical Substances

US Federal Regulations

Chemical Name	CAS	Weight %	SARA 313 Threshold Values %
Citric plasticizer	-	< 85	1.0

SARA 311 / 312 Hazard Categories

Chemical Name	CWA – Reportable Quantities	CWA – Toxic Pollutants	CWA – Priority Pollutants	CWA – Hazardous Substances
Citric plasticizer	10 lb.	X	X	X

Chemical Name	Hazardous Substances RQs	CERCLA / SARA RQ	Reportable Quantity (RQ) Final
Citric plasticizer	10 lb.	-	10 lb. / 4.54 kg

US State Regulations

Chemical Name	California Proposition 65
Citric plasticizer	Developmental Female Reproductive Male Reproductive

US State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Citric plasticizer	X	X	X
Ethyl alcohol 64-17-5	X	X	X

16. OTHER INFORMATION

HMIS	Health Hazards	Flammability	Physical Hazards
	1	3	0

Issue Date 26-Sept-2014
Revision Date
Revision Note

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release. It is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet