LIFELINE CELL TECHNOLOGY MATERIAL SAFETY DATA SHEET

SECTION 1 – PRODUCT AND COMPANY INFORMATION

Product Name: 4% Paraformaldehyde Fixative Solution

Product Number: CM-0055

Company Address: Lifeline Cell Technology
32 East Frederick Street
Walkersville, MD 21793

Technical Phone: (877) 845-7787
Fax: (301) 845-0885
Emergency Phone: (877) 845-7787

SECTION 2 – COMPOSITION / INFORMATION ON COMPONENTS

Liquid: The subject formulation is a solution of 4% Paraformaldehyde (emits and converts to Formaldehyde) in a Phospahate Buffered Saline solution. Other than paraformaldehyde (formaldehyde) and water all components are less than 1% concentration.

Paraformaldehyde CAS# 30525-89-4 4% (Formaldehyde CAS# 50-000-0)

Synonyms: Formaldehyde solution

SECTION 3 – HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Target Organ Effect, Toxic by inhalation., Harmful by ingestion., Skin sensitiser, Irritant
Target Organ Effect, Toxic by inhalation., Harmful by ingestion., Skin sensitiser, Irritant, Carcinogen
Target Organs
Eyes, Kidney, Liver, Heart, Eyes, Kidney, Liver, Heart
GHS Label elements, including precautionary statements
Signal word Danger
Hazard statement(s)
H302 + H332 Harmful if swallowed or if inhaled.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H335 May cause respiratory irritation.
H351 Suspected of causing cancer.
H402 Harmful to aquatic life.

Precautionary statement(s)

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P280 Wear protective gloves/eye protection/face protection.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

HMIS Classification

Health hazard: 2
Chronic Health Hazard: *
Flammability: 0
Physical hazards: 2

NFPA Rating

Health hazard: 2
Fire: 1
Reactivity Hazard: 0

Potential Health Effects

Inhalation: Toxic if inhaled. Causes respiratory tract irritation.
Skin: Harmful if absorbed through skin. Causes skin irritation.
Eyes: Causes eye irritation.
Ingestion: Harmful if swallowed.

SECTION 4 – FIRST AID MEASURES

Oral Exposure: If swallowed, rinse out mouth with water provided person is conscious. Immediate medical attention is required.

Dermal Exposure: In case of contact with skin, wash with copious amounts of water for at least 15 minutes. Immediate medical attention is required.

Eye Exposure: In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Immediate medical attention is required.

Inhalation: If inhaled move to fresh air. If breathing is difficult give oxygen. Do not give mouth to mouth resuscitation, induce artificial respiration with a respiratory medical device. Immediate medical attention is required.

SECTION 5 – FIRE FIGHTING MEASURES

Specific Hazards Arising from the Chemical: Thermal decomposition can lead to release of irritating gases and vapors. Vapors and gases emitted are flammable. Wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Methods for Clean Up: Use personal protective equipment. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Do not let product enter drains. Discharge into the environment must be avoided. Absorb with inert absorbent material. Keep in suitable and closed containers for disposal. Ventilate area and wash spill site after material cleanup is complete.

SECTION 7 – HANDLING AND STORAGE

Handling: Use with a fume hood or respirator. Avoid inhalation. Avoid contact with eyes. Avoid prolonged or repeated exposure.

Storage: Keep container tightly closed. Store at -20 C.

SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Guidelines

Component: Formaldehyde

ACGIH TLV:	Ceiling: 0.3 ppm		
OSHA PEL:	(Vacated) TWA: 3 ppm	(Vacated) STEL: 10 ppm	(Vacated) Ceiling: 5 ppm
	TWA: 0.75 ppm	STEL: 2 ppm	
NIOSH IDLH	IDLH: 20 ppm	TWA: 0.016 ppm	Ceiling: 0.1 ppm

Quebec:	Ceiling 3 mg/m^3	Ceiling 2 ppm
Mexico OEL (TWA):	Peak 3 mg/m^3	Peak 2 ppm
Ontario TWAEV:	STEL: 1.0 ppm	CEV: 1.5 ppm

Engineering Controls: Eye wash stations are required.

Ventilation: Use with a fume hood or respirator.

Personal Protective Equipment:

Respiratory: Respirator required for use outside a fume hood. Consult with a qualified industrial hygienist.

Hand: Chemical resistant gloves required.

Eye: Safety glasses or goggles required.

General Hygiene Measures: Wash hands thoroughly after handling.

SECTION 9 – PHYSICAL / CHEMICAL PROPERTIES

Appearance: Clear liquid with characteristic odor.
Boiling Point: >200˚ F
Vapor Pressure (@ 20˚ C): 17-20 mm Hg
Vapor Density: ~ 1
% Volatility by volume: 98
Evaporation Rate (Butyl Acetate = 1): >1
Specific Gravity: 1.08-1.13
Melting Point: N/A
Solubility in water: Easily soluble

SECTION 10 – STABILITY AND REACTIVITY

Stability: Stable under normal conditions.
Conditions to Avoid: Incompatible materials. Excess heat.
Incompatible Materials: Strong oxidizing agents
Hazardous Decomposition Products: Carbon monoxide (CO), Carbon dioxide (CO2), Formaldehyde
Hazardous Polymerization: Hazardous polymerization does not occur
Hazardous Reactions: None under normal processing

SECTION 11 – TOXICOLOGICAL INFORMATION

Acute Toxicity: No acute toxicity information is available for this product

Component Information: Formaldehyde
LD50 Oral 500 mg/kg (Rat)
LD50 Dermal Not listed
LC50 Inhalation 0.578 mg/L (Rat) 4 h

Irritation: Irritating to eyes, respiratory system and skin
Toxicologically Synergistic Products: No information available.
Chronic Toxicity
Carcinogenicity (each agency has listed Formaldehyde)
ACGIH: A2 (suspected human carcinogen)
IARC: Group 1 (carcinogenic to humans)
NTP: Reasonably anticipated (to be a human carcinogen)
OSHA: X
Mexico: Not listed

Sensitization: May cause sensitization by skin contact
Mutagenic Effects: Mutagenic effects have occurred in humans.
Reproductive Effects: Experiments have shown reproductive toxicity effects on laboratory animals.
Developmental Effects: Developmental effects have occurred in experimental animals.
Teratogenicity: Teratogenic effects have occurred in experimental animals..
Other Adverse Effects: Tumorigenic effects have been reported in experimental animals.. See RTECS
Endocrine Disruptor Information: No information available

SECTION 12 – ECOLOGICAL INFORMATION

Toxicity to fish and aquatic invertebrates: Formaldehyde, a component of this formulation, has been found toxic to fish and aquatic invertebrates
(Leuciscus idus: LC50 = 15 mg/L- 96 hours; Water Flea: LC50 = 20 mg/L- 96 hours)

Persistence and degradation: no data available
Bioaccumulative potential: no data available
Mobility in soil: no data available
PBT and vPvB assessment: no data available
Other adverse effects: no data available

SECTION 13 – DISPOSAL CONSIDERATIONS

Appropriate Method of Disposal: Clean up and dispose of waste in accordance with all federal, state and local environmental regulations. Offer surplus solution to a licensed disposal company. Avoid release into soil, waterways, drains and sewers. **This product may meet the criteria for hazardous waste.**

SECTION 14 – TRANSPORT INFORMATION

DOT: Not regulated

TDG: Not regulated

IATA: Not regulated

IMDG/IMO: Not regulated

SECTION 15 – REGULATORY INFORMATION

OSHA Hazards (Formaldehyde) 0.5 ppm Action Level; 0.75 ppm TWA; 2ppm STEL
DSL Status All components of this product are on the Canadian DSL list.
SARA 302 Components SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
SARA 313 Components SARA 313: Formaldehyde, up to 4%, Threshold value 0.1%.
SARA 311/312 Hazards No SARA Hazards

Massachusetts Right To Know Components
Formaldehyde CAS# 50-000-0
Pennsylvania Right To Know Components
Formaldehyde CAS# 50-000-0
New Jersey Right To Know Components
Formaldehyde CAS# 50-000-0
Illinois Right To Know Components
Formaldehyde CAS# 50-000-0
Rhode Island Right To Know Components
Formaldehyde CAS# 50-000-0
California Prop. 65 Components
Formaldehyde CAS# 50-000-0 Carcinogen NSRL: 40 µg/day

Clean Water Act: Formaldehyde – hazardous substance
Reportable quantity: 100 lb.

Clean Air Act: Formaldehyde – HAPS listed

CERCLA: Formaldehyde – Hazardous Substance RQs, 100 lb. CERCLA EHS RQs, 100 lb.

US Department of Transportation
Reportable Quantities (RQ): Yes
DOT Marine Pollutant: No
DOT Severe Marine Pollutant: No

US Department of Homeland Security
Formaldehyde DHS Chemical Facility Anti-Terrorist Standard, 11250 lb. (solution)

Canada This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains information required by the CPR.

WHMIS Hazard Class
D1B Toxic Materials
D2A Very Toxic Materials
D2B Toxic Materials

SECTION 16 – OTHER INFORMATION

Disclaimer: This product is for research and development use only. Not for clinical or household use.

Warranty: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regards to appropriate safety precautions. Lifeline Cell Technology reserves the right to revise this MSDS periodically as new information becomes available. It does not represent any guarantee of the properties of the product. Lifeline Cell Technology shall not be held liable for any damage resulting from handling or from contact with the above product.