

# Safety Data Sheet

## LIFELINE CELL TECHNOLOGY SAFETY DATA SHEET

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### SECTION 1 – PRODUCT AND COMPANY INFORMATION

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**Product Name:** Mesenchymal Stem Cells (Bone Marrow)

**Product Number:** FC-0057

**Company Address:** Lifeline Cell Technology  
8415 Progress Drive, Suite T  
Frederick, MD 21701

**Technical Phone:** (877) 845-7787

**Fax:** (443) 393-0393

**Emergency Phone:** (877) 845-7787

**Product use:** Cell/Tissue culture

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### SECTION 2 – HAZARDS IDENTIFICATION

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**Hazard Identification:** Dimethyl Sulfoxide (approximately 10%)

**GHS Classification**

Flammable liquids (Category 4), H227

**GHS Label elements including precautionary statements:**

Pictograms: None  
Signal word: Warning

**Hazard statements**

H227 Combustible liquid  
H280 Wear protective gloves/protective clothing/eye protection/face protection

**Precautionary statements**

P210 Keep away from heat/sparks/open flames/hot surfaces. –No smoking  
P280 Wear protective gloves/protective clothing/eye protection/face protection  
P370+P378 In case of fire use dry sand, dry chemical or alcohol-resistant foam for extinction.  
P403+P235 Store in a well ventilated place. Keep cool.  
P501 Dispose of contents/container to an approved waste disposal plant

**Hazards not covered by GHS:** This product contains raw material of human source. The human cells in this product have been tested and found to be negative for Hepatitis B, Hepatitis C, HIV-1 and HIV-2 by FDA approved methods. These tests cannot offer complete assurance of the absence of these or other infectious agents.

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## SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

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<b>Principal Components:</b>	Water	CAS number:	7732-18-5
	Dimethyl Sulfoxide	CAS number:	67-68-5
	Fetal Bovine Serum	CAS number:	N/A

**Composition:** The subject product is a cell suspension in a nutrient chemical solution with Fetal Bovine Serum, and Dimethyl Sulfoxide (DMSO) in purified water. With the exception of 5-15% Fetal Bovine Serum, 5-15% DMSO and purified water, all other ingredients are in concentrations of less than 1%.

**Synonym:** BM MSC, Bone Marrow derived Mesenchymal Stem Cells

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## SECTION 4 – FIRST AID MEASURES

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### Potential Health Effects:

**Eye:** May cause irritation of the eye.

**Skin:** May cause skin irritation.

**Ingestion:** May be harmful if swallowed.

**Inhalation:** May be harmful if inhaled. Material may be irritating to mucous membranes and upper respiratory tract.

### First aid measures:

**Oral Exposure:** If swallowed, rinse out mouth with water provided person is conscious. Call a physician.

**Dermal Exposure:** In case of contact with skin, flush with copious amounts of water for at least 15 minutes. Should irritation occur, call a physician.

**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. Call a physician.

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## SECTION 5 – FIRE FIGHTING MEASURES

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**General Fire hazard:** For small fires, use media such as “alcohol” foam, dry chemical or carbon dioxide. For large fires, apply water from as far away as possible. Use large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

**Extinguishing media:** Use media appropriate for fire conditions.

**Advice for Firefighters:** Wear self-contained breathing apparatus if necessary.

**Hazardous decomposition products from the mixture:** Carbon oxides and Sulfur oxides

**Further information:** Use water spray to cool unopened containers.

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## SECTION 6 – ACCIDENTAL RELEASE MEASURES

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**Personal Precautions and Protective Equipment:** Avoid breathing vapors, mist or gas. Remove all sources of ignition. Beware of vapours accumulating to form explosive concentrations. Vapour can accumulate in low areas. Refer to section 8 for appropriate personal protection.

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**Environmental Precautions:** Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

**Methods for Clean Up:** Absorb liquid with disposable laboratory towel or other absorbent material and then place in a closed container for disposal. Wash spill site after liquid cleanup is complete with cleansers appropriate for the spill site surface material.

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## SECTION 7 – HANDLING AND STORAGE

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**Precautions for Handling:** Refer to section 8 for appropriate personal protection. Avoid contact with eyes, skin or clothing. Product may cause allergic reaction in sensitized individuals. Do not pipet by mouth.

**Storage:** Keep container tightly closed. Store at ultralow temperature, -150°C or below. Protect from light.

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## SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

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**Components with workplace control parameters:**

Component	CAS#	Value	Control Parameters	Basis
Dimethyl Sulfoxide	67-68-5	TWA	250.000 ppm 0.800000 mg/m <sup>3</sup>	USA. Workplace Environmental Exposure Levels (WEEL)

**Engineering Controls:** Handle in accordance with good industrial hygiene and safety practices. Wash hands before breaks and at the end of the workday.

**Ventilation:** Area ventilation is generally adequate.

**Personal Protective Equipment:**

**Respiratory:** Respirator is not required.  
**Hand:** Chemical resistant gloves required.  
**Eye:** Safety glasses or goggles required.  
**Clothing:** Laboratory coat recommended.

**General Hygiene Measures:** Wash hands thoroughly after handling.

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## SECTION 9 – PHYSICAL / CHEMICAL PROPERTIES

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**Appearance:** Frozen, pale yellow to tan liquid

**Upper/lower flammability or Explosive limits:** No data available

**Odor:** Faint earthy or musky odor

**Vapor pressure:** No data available

**Odor threshold:** No data available

**Vapor density:** No data available

**pH:** No data available

**Relative density:** No data available

**Freezing point:** No data available

**Solubility:** Soluble in water

**Boiling point:** No data available

**Flash point:** No data available

**Evaporation rate:** No data available

**Flammability:** Not flammable

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**Upper/lower flammability or explosive limits:** No data available  
**Partition coefficient: n-octanol/water:** No data available  
**Auto-ignition temperature:** No data available  
**Viscosity:** No data available

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## SECTION 10 – STABILITY AND REACTIVITY

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**Reactivity:** No data available  
**Chemical stability:** Stable under recommended storage and usage conditions.  
**Possible hazardous reactions:** No data available  
**Conditions to be avoided:** Heat, sparks and flames.  
**Incompatible materials:** Acid chlorides, Phosphorus halides, Strong acids, Strong oxidizing agents, Strong reducing agents  
**Hazardous decomposition products:** Carbon oxides and Sulfur oxides may be released in a fire.

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## SECTION 11 – TOXICOLOGICAL INFORMATION

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**Likely routes of exposure:** Ingestion, skin, eye contact.

### Acute toxicity (Dimethyl Sulfoxide)

**Oral LD50:** LD50 Oral – Rat – 14,500 mg/kg  
**Inhalation LC50:** LC50 Inhalation – Rat – 4 hrs – 40,250 ppm  
**Dermal LD50:** LD50 Dermal Rabbit - > 5,000 mg/kg  
**Other:** No data available

**Chronic toxicity:** No data available

**Skin corrosion:** No data available  
**Eye damage:** No data available  
**Sensitization (Respiration or Skin):** No data available  
**Specific target organ toxicity – single exposure:** No data available  
**Specific target organ toxicity – repeated exposure:** No data available  
**Aspiration hazard:** No data available

### Germ cell mutagenicity:

Dimethyl Sulfoxide: Mouse, lymphocyte, cytogenetic analysis, mutation in mammalian somatic cells  
Rat: Cytogenetic analysis  
Mouse: DNA damage

### Carcinogenicity:

Dimethyl Sulfoxide: Rat – Oral  
Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Skin and Appendages: Other: Tumors

Dimethyl Sulfoxide: Mouse – Oral

Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Leukaemia Skin and Appendages: Other: Tumors

**NTP:** not listed  
**IARC:** not listed  
**ACGIH:** not listed  
**OSHA:** not listed

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## Reproductive toxicity:

Dimethyl Sulfoxide: Reproductive toxicity – Rat – Intraperitoneal

Effects on fertility: Abortion. Post-implantation mortality (e.g. dead and/or reabsorbed implants per total number of implants).

Dimethyl Sulfoxide: Reproductive toxicity – Rat – Subcutaneous

Effects on fertility: Post-implantation mortality (e.g. dead and/or reabsorbed implants per total number of implants per corpora lutea). Effects on fertility: Litter size (e.g. number of fetuses per liter; measured before birth).

Dimethyl Sulfoxide: Reproductive toxicity – Mouse – Oral

Effects on fertility: Pre-implantation mortality (e.g. reduction in number of implants per female; number of implants per corpora lutea). Effects on embryo or fetus: Fetotoxicity (except death, e.g. stunted fetus). Specific developmental abnormalities: Musculoskeletal system.

## Additional Information:

Dimethyl Sulfoxide: RTECS: PV6210000

Effects due to ingestion may include: Nausea, Fatigue, Headache

Eyes – Eye disease – Based on Human Evidence

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## SECTION 12 – ECOLOGICAL INFORMATION

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**Toxicity to Fish:** LC50 Pimephales promelas (fathead minnow) 34,000 mg/L – 96 h (Dimethyl Sulfoxide)

LC50 Oncorhynchus mykiss (rainbow trout) 35,000 mg/L – 96 h (Dimethyl Sulfoxide)

### Toxicity to other aquatic

**Invertebrates:** EC50 Daphnia magna (water flea) 24,600 mg/L – 48 h (Dimethyl Sulfoxide), (OECD Guideline 202)

**Toxicity to algae:** EC50 Pseudokirchneriella subcapitata (green algae) 17,000 mg/L – 72 h (Dimethyl Sulfoxide), (OECD Guideline 201)

**Persistence/Degradability:** Dimethyl Sulfoxide: Result: 31% - According to the results of tests of biodegradability a component of this product (Dimethyl Sulfoxide) is not readily biodegradable (OECD Guideline 301D).

**Bioaccumulation Potential:** No data available

**Mobility in Soil:** No data available. Expected to be mobile in soil due to high solubility in water.

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## SECTION 13 – DISPOSAL CONSIDERATIONS

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**RCRA hazardous waste code:** Not listed as a hazardous waste.

**Appropriate disposal containers:** No specific restrictions on waste container type.

**Appropriate Method of Disposal:** Clean up and dispose of waste in accordance with all federal, state and local environmental regulations.

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## SECTION 14 – TRANSPORT INFORMATION

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**UN number:** N/A

**Proper Shipping Name:** None.

**DOT:** Non-hazardous for transport.

**IMDG:** Non-hazardous for transport.

**IATA:** Non-hazardous for transport.

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## SECTION 15 – REGULATORY INFORMATION

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**SARA 302 Components:** No chemicals in this product are subject to SARA Title III, Section 302.

**SARA 313 Components:** This product does not contain chemical components with known CAS numbers that exceed the threshold (De Minimus) reporting levels established by SARA Title III, Section 313.

**SARA 311/312:** Fire hazard, Chronic health hazard

**Massachusetts Right to Know Components:** No components are subject to Massachusetts Right to Know Act.

**Pennsylvania Right to Know Components:**

Water	CAS number:	7732-18-5
Dimethyl Sulfoxide	CAS number:	67-68-5
Fetal Bovine Serum	CAS number:	N/A

**New Jersey Right to Know Components:**

Dimethyl Sulfoxide	CAS number:	67-68-5
Fetal Bovine Serum	CAS number:	N/A

**California Prop. 65 Components:** This product does not contain any chemicals known to the state of California to cause cancer, birth defects or other reproductive harm.

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## SECTION 16 – OTHER INFORMATION

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**Preparation information:**

**Prepared by:** Quality Department  
**Date Prepared:** May 1, 2015  
**Replaced Version date:** July 30, 2012

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