

Safety Data Sheet

LIFELINE CELL TECHNOLOGY SAFETY DATA SHEET

SECTION 1 – PRODUCT AND COMPANY INFORMATION

Product Name: VascuLife Basal Medium

Product Number: LM-0002

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

SECTION 2 – HAZARDS IDENTIFICATION

Hazardous Components: Not a hazardous substance or mixture

SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

Principal Components: Water CAS number: 7732-18-5

Composition: The subject formulation is a nutrient blend of amino acids, vitamins, organic and inorganic supplements and salts. With the exception of purified water, all ingredients are in concentrations of less than 1%. The concentrations of components of this formulation are considered a trade secret.

Synonym: N/A

SECTION 4 – FIRST AID MEASURES

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.

Safety Data Sheet

SECTION 5 – FIRE FIGHTING MEASURES

- General Fire hazard:** Product does not present any special fire hazard. Carbon oxides may be released in a fire.
- Flash point:** N/A
- Extinguishing media:** Use media appropriate for the material that is burning.
- Advice for Firefighters:** Wear self-contained breathing apparatus if necessary.
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SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal Precautions and Protective Equipment: Refer to section 8 for appropriate personal protection.

Environmental Precautions: No special environmental precautions are required.

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.

SECTION 7 – HANDLING AND STORAGE

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 between +2-8°C. Protect from light.

SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure limits: Not listed on the OSHA Occupational Chemical database.

Engineering Controls: Eye wash stations are required.

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.

SECTION 9 – PHYSICAL / CHEMICAL PROPERTIES

Appearance: Clear to faint rose colored 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

Safety Data Sheet

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
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

SECTION 10 – STABILITY AND REACTIVITY

Reactivity: No data available
Chemical stability: Stable under recommended storage and usage conditions.
Possible hazardous reactions: No data available
Conditions to be avoided: No data available
Incompatible materials: Strong oxidizing agents
Hazardous decomposition products: Carbon oxides may be released in a fire.

SECTION 11 – TOXICOLOGICAL INFORMATION

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

Acute toxicity

Oral LD50: No data available
Inhalation LC50: No data available
Dermal LD50: No data available
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
Germ cell mutagenicity: No data available
Carcinogenicity: No data available
Reproductive toxicity: No data available
Teratogenicity: No data available

Carcinogenicity

NTP: not listed
IARC: not listed
OSHA: not listed

Safety Data Sheet

SECTION 12 – ECOLOGICAL INFORMATION

Ecotoxicity: No data available
Persistence/Degradability: No data available
Bioaccumulation Potential: No data available
Mobility in Soil: No data available. Expected to be mobile in soil due to high solubility in water.

SECTION 13 – DISPOSAL CONSIDERATIONS

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.

SECTION 14 – TRANSPORT INFORMATION

UN number: N/A
Proper Shipping Name: None.
DOT: Non-hazardous for transport.
IMDG: Non-hazardous for transport.
IATA: Non-hazardous for transport.

SECTION 15 – REGULATORY INFORMATION

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: Not a hazardous substance or mixture

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

New Jersey Right to Know Components: No components are subject to New Jersey Right to Know Act.

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.

SECTION 16 – OTHER INFORMATION

Preparation information:

Prepared by: Quality Department
Date Prepared: February 11, 2015
Replaced Version date: July 30, 2012

Disclaimer: This information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of Lifeline Cell Technology. The data on this sheet relate only to the specific materials designated herein and shall only be used as a guide. Lifeline Cell Technology assumes no legal responsibility for the use or reliance upon these data.

Safety Data Sheet

LIFELINE CELL TECHNOLOGY SAFETY DATA SHEET

SECTION 1 – PRODUCT AND COMPANY INFORMATION

Product Name: LifeFactors® VascuLife® VEGF-Mv
Product Number: LS-1029

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

SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

Principal Components:

LifeFactors® VascuLife® VEGF-Mv Kit, LS-1029:

rh VEGF, 0.5 mL, LS-1016

rh IGF-1, 0.5 mL, LS-1014

rh FGF-b, 0.5 mL, LS-1002

Ascorbic Acid, 0.5 mL, LS-1005

rh EGF, 0.5 mL, LS-1015

Heparin, 0.5 mL, LS-1017

FBS, 25 mL, LS-1028

L-Glutamine (200 mM), 25 mL, LS-1013

Hydrocortisone hemisuccinate, 0.5 mL, LS-1007

Please refer to Safety Data Sheets (SDS) for the above listed components on the following pages.

Safety Data Sheet

LIFELINE CELL TECHNOLOGY SAFETY DATA SHEET

SECTION 1 – PRODUCT AND COMPANY INFORMATION

Product Name: rh VEGF

Product Number: LS-1016

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

SECTION 2 – HAZARDS IDENTIFICATION

Hazardous Components: Not a hazardous substance or mixture

SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

| | | | |
|------------------------------|------------------------|-------------|-----------|
| Principal Components: | recombinant human VEGF | CAS number: | N/A |
| | Water | CAS number: | 7732-18-5 |

Composition: The item formulation is a mixture of recombinant human VEGF (rh VEGF), water and stabilizing agents. With the exception of purified water, all ingredients are in concentrations of less than 1%.

Synonym: Vascular Endothelial Growth Factor, VPF, Folliculostellate cell-derived growth factor, Glioma-derived endothelial cell mitogen

SECTION 4 – FIRST AID MEASURES

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.

Safety Data Sheet

SECTION 5 – FIRE FIGHTING MEASURES

- General Fire hazard:** Product does not present any special fire hazard. Carbon oxides may be released in a fire.
- Flash point:** N/A
- Extinguishing media:** Use media appropriate for the material that is burning.
- Advice for Firefighters:** Wear self-contained breathing apparatus if necessary.
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SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal Precautions and Protective Equipment: Refer to section 8 for appropriate personal protection.

Environmental Precautions: No special environmental precautions are required.

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.

SECTION 7 – HANDLING AND STORAGE

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 -20°C or below. Protect from light.

SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure limits: Not listed on the OSHA Occupational Chemical database.

Engineering Controls: Eye wash stations are required.

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.

SECTION 9 – PHYSICAL / CHEMICAL PROPERTIES

Appearance: Frozen, clear liquid above ~0° C.

Upper/lower flammability or Explosive limits: No data available

Odor: Odorless

Vapor pressure: No data available

Odor threshold: No data available

Safety Data Sheet

Vapor density: No data available
pH: Neutral
Relative density: No data available
Freezing point: ~0° C
Solubility: Completely soluble in water
Boiling point: ~100° C
Flash point: No data available
Evaporation rate: No data available
Flammability: Not flammable
Upper/lower flammability or explosive limits: No data available
Relative density: ~1 at 20° C
Partition coefficient: n-octanol/water: No data available
Auto-ignition temperature: No data available
Viscosity: No data available

SECTION 10 – STABILITY AND REACTIVITY

Reactivity: No data available
Chemical stability: Stable under recommended storage and usage conditions.
Possible hazardous reactions: No data available
Conditions to be avoided: No data available
Incompatible materials: Strong oxidizing agents
Hazardous decomposition products: Carbon oxides may be released in a fire.

SECTION 11 – TOXICOLOGICAL INFORMATION

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

Acute toxicity

Oral LD50: No data available
Inhalation LC50: No data available
Dermal LD50: No data available
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
Germ cell mutagenicity: No data available
Carcinogenicity: No data available
Reproductive toxicity: No data available
Teratogenicity: No data available

Carcinogenicity

NTP: not listed
IARC: not listed
OSHA: not listed

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SECTION 12 – ECOLOGICAL INFORMATION

Ecotoxicity: No data available
Persistence/Degradability: No data available
Bioaccumulation Potential: No data available
Mobility in Soil: No data available. Expected to be mobile because it is an aqueous solution.

SECTION 13 – DISPOSAL CONSIDERATIONS

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.

SECTION 14 – TRANSPORT INFORMATION

UN number: N/A
Proper Shipping Name: None.
DOT: Non-hazardous for transport.
IMDG: Non-hazardous for transport.
IATA: Non-hazardous for transport.

SECTION 15 – REGULATORY INFORMATION

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: Not a hazardous substance or mixture

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

New Jersey Right to Know Components: No components are subject to New Jersey Right to Know Act.

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.

SECTION 16 – OTHER INFORMATION

Preparation information:

Prepared by: Quality Department
Date Prepared: February 10, 2015
Replaced Version date: July 30, 2012

Disclaimer: This information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of Lifeline Cell Technology. The data on this sheet relate only to the specific materials designated herein and shall only be used as a guide. Lifeline Cell Technology assumes no legal responsibility for the use or reliance upon these data.

Safety Data Sheet

LIFELINE CELL TECHNOLOGY SAFETY DATA SHEET

SECTION 1 – PRODUCT AND COMPANY INFORMATION

Product Name: rh IGF-1

Product Number: LS-1014

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

SECTION 2 – HAZARDS IDENTIFICATION

Hazardous Components: Not a hazardous substance or mixture

SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

| | | | |
|------------------------------|-------------------------|-------------|-----------|
| Principal Components: | recombinant human IGF-1 | CAS number: | N/A |
| | Water | CAS number: | 7732-18-5 |

Composition: The item formulation is a mixture of recombinant human IGF-1 (rh IGF-1), water and stabilizing agents. With the exception of purified water, all ingredients are in concentrations of less than 1%.

Synonym: Insulin-like Growth Factor-1, Somatamedin, IGF-1A

SECTION 4 – FIRST AID MEASURES

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

General Fire hazard: Product does not present any special fire hazard. Carbon oxides may be released in a fire.

Flash point: N/A

Extinguishing media: Use media appropriate for the material that is burning.

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

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal Precautions and Protective Equipment: Refer to section 8 for appropriate personal protection.

Environmental Precautions: No special environmental precautions are required.

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.

SECTION 7 – HANDLING AND STORAGE

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 -20°C or below. Protect from light.

SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure limits: Not listed on the OSHA Occupational Chemical database.

Engineering Controls: Eye wash stations are required.

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.

SECTION 9 – PHYSICAL / CHEMICAL PROPERTIES

Appearance: Frozen, clear liquid above ~0° C.

Upper/lower flammability or Explosive limits: No data available

Odor: Odorless

Vapor pressure: No data available

Odor threshold: No data available

Safety Data Sheet

Vapor density: No data available
pH: Neutral
Relative density: No data available
Freezing point: ~0° C
Solubility: Completely soluble in water
Boiling point: ~100° C
Flash point: No data available
Evaporation rate: No data available
Flammability: Not flammable
Upper/lower flammability or explosive limits: No data available
Relative density: ~1 at 20° C
Partition coefficient: n-octanol/water: No data available
Auto-ignition temperature: No data available
Viscosity: No data available

SECTION 10 – STABILITY AND REACTIVITY

Reactivity: No data available
Chemical stability: Stable under recommended storage and usage conditions.
Possible hazardous reactions: No data available
Conditions to be avoided: No data available
Incompatible materials: Strong oxidizing agents
Hazardous decomposition products: Carbon oxides may be released in a fire.

SECTION 11 – TOXICOLOGICAL INFORMATION

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

Acute toxicity

Oral LD50: No data available
Inhalation LC50: No data available
Dermal LD50: No data available
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
Germ cell mutagenicity: No data available
Carcinogenicity: No data available
Reproductive toxicity: No data available
Teratogenicity: No data available

Carcinogenicity

NTP: not listed
IARC: not listed
OSHA: not listed

Safety Data Sheet

SECTION 12 – ECOLOGICAL INFORMATION

Ecotoxicity: No data available
Persistence/Degradability: No data available
Bioaccumulation Potential: No data available
Mobility in Soil: No data available. Expected to be mobile because it is an aqueous solution.

SECTION 13 – DISPOSAL CONSIDERATIONS

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.

SECTION 14 – TRANSPORT INFORMATION

UN number: N/A
Proper Shipping Name: None.
DOT: Non-hazardous for transport.
IMDG: Non-hazardous for transport.
IATA: Non-hazardous for transport.

SECTION 15 – REGULATORY INFORMATION

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: Not a hazardous substance or mixture

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

New Jersey Right to Know Components: No components are subject to New Jersey Right to Know Act.

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.

SECTION 16 – OTHER INFORMATION

Preparation information:

Prepared by: Quality Department
Date Prepared: February 10, 2015
Replaced Version date: July 30, 2012

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Safety Data Sheet

LIFELINE CELL TECHNOLOGY SAFETY DATA SHEET

SECTION 1 – PRODUCT AND COMPANY INFORMATION

Product Name: rh FGF-b

Product Number: LS-1002

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

SECTION 2 – HAZARDS IDENTIFICATION

Hazardous Components: Not a hazardous substance or mixture

SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

| | | | |
|------------------------------|-------------------------|-------------|-------------|
| Principal Components: | recombinant human FGF-b | CAS number: | 106096-93-9 |
| | Water | CAS number: | 7732-18-5 |

Composition: The item formulation is a mixture of recombinant human FGF-b (rh FGF-b), water and stabilizing agents. With the exception of purified water, all ingredients are in concentrations of less than 1%.

Synonym: Fibroblast Growth Factors-basic, bFGF, FGF-2

SECTION 4 – FIRST AID MEASURES

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.

Safety Data Sheet

SECTION 5 – FIRE FIGHTING MEASURES

General Fire hazard: Product does not present any special fire hazard. Carbon oxides may be released in a fire.

Flash point: N/A

Extinguishing media: Use media appropriate for the material that is burning.

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

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal Precautions and Protective Equipment: Refer to section 8 for appropriate personal protection.

Environmental Precautions: No special environmental precautions are required.

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.

SECTION 7 – HANDLING AND STORAGE

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 -20°C or below. Protect from light.

SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure limits: Not listed on the OSHA Occupational Chemical database.

Engineering Controls: Eye wash stations are required.

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.

SECTION 9 – PHYSICAL / CHEMICAL PROPERTIES

Appearance: Frozen, clear liquid above ~0° C.

Upper/lower flammability or Explosive limits: No data available

Odor: Odorless

Vapor pressure: No data available

Odor threshold: No data available

Safety Data Sheet

Vapor density: No data available
pH: Neutral
Relative density: No data available
Freezing point: ~0° C
Solubility: Completely soluble in water
Boiling point: ~100° C
Flash point: No data available
Evaporation rate: No data available
Flammability: Not flammable
Upper/lower flammability or explosive limits: No data available
Relative density: ~1 at 20° C
Partition coefficient: n-octanol/water: No data available
Auto-ignition temperature: No data available
Viscosity: No data available

SECTION 10 – STABILITY AND REACTIVITY

Reactivity: No data available
Chemical stability: Stable under recommended storage and usage conditions.
Possible hazardous reactions: No data available
Conditions to be avoided: No data available
Incompatible materials: Strong oxidizing agents
Hazardous decomposition products: Carbon oxides may be released in a fire.

SECTION 11 – TOXICOLOGICAL INFORMATION

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

Acute toxicity

Oral LD50: No data available
Inhalation LC50: No data available
Dermal LD50: No data available
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
Germ cell mutagenicity: No data available
Carcinogenicity: No data available
Reproductive toxicity: No data available
Teratogenicity: No data available

Carcinogenicity

NTP: not listed
IARC: not listed
OSHA: not listed

Safety Data Sheet

SECTION 12 – ECOLOGICAL INFORMATION

Ecotoxicity: No data available
Persistence/Degradability: No data available
Bioaccumulation Potential: No data available
Mobility in Soil: No data available. Expected to be mobile because it is an aqueous solution.

SECTION 13 – DISPOSAL CONSIDERATIONS

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.

SECTION 14 – TRANSPORT INFORMATION

UN number: N/A
Proper Shipping Name: None.
DOT: Non-hazardous for transport.
IMDG: Non-hazardous for transport.
IATA: Non-hazardous for transport.

SECTION 15 – REGULATORY INFORMATION

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 Minimis) reporting levels established by SARA Title III, Section 313.
SARA 311/312: Not a hazardous substance or mixture

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

New Jersey Right to Know Components: No components are subject to New Jersey Right to Know Act.

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.

SECTION 16 – OTHER INFORMATION

Preparation information:

Prepared by: Quality Department
Date Prepared: January 21, 2015
Replaced Version date: July 30, 2012

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Safety Data Sheet

LIFELINE CELL TECHNOLOGY SAFETY DATA SHEET

SECTION 1 – PRODUCT AND COMPANY INFORMATION

Product Name: Ascorbic Acid

Product Number: LS-1005

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

SECTION 2 – HAZARDS IDENTIFICATION

Hazardous Components: Not a hazardous substance or mixture

SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

Principal Components: L-Ascorbic Acid Phosphate Magnesium Salt CAS number: 113170-55-1
Water CAS number: 7732-18-5

Composition: The item formulation is a solution of the above form of Ascorbic Acid and water. The solution contains approximately 5% L-Ascorbic Acid Phosphate Magnesium Salt in water.

Synonym: Phospitan C, AA2P, Ascorbyl PM, (Vitamin C)

SECTION 4 – FIRST AID MEASURES

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.

Safety Data Sheet

SECTION 5 – FIRE FIGHTING MEASURES

General Fire hazard: Product does not present any special fire hazard. Carbon oxides may be released in a fire.

Flash point: N/A

Extinguishing media: Use media appropriate for the material that is burning.

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

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal Precautions and Protective Equipment: Refer to section 8 for appropriate personal protection.

Environmental Precautions: No special environmental precautions are required.

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.

SECTION 7 – HANDLING AND STORAGE

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 -20°C or below. Protect from light.

SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure limits: Not listed on the OSHA Occupational Chemical database.

Engineering Controls: Eye wash stations are required.

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.

SECTION 9 – PHYSICAL / CHEMICAL PROPERTIES

Appearance: Frozen, clear liquid above ~0° C.

Upper/lower flammability or Explosive limits: No data available

Odor: Odorless

Vapor pressure: No data available

Odor threshold: No data available

Safety Data Sheet

Vapor density: No data available
pH: No data available
Relative density: No data available
Freezing point: ~0° C
Solubility: Completely soluble in water
Boiling point: ~100° C
Flash point: No data available
Evaporation rate: No data available
Flammability: Not flammable
Upper/lower flammability or explosive limits: No data available
Relative density: No data available
Partition coefficient: n-octanol/water: No data available
Auto-ignition temperature: No data available
Viscosity: No data available

SECTION 10 – STABILITY AND REACTIVITY

Reactivity: No data available
Chemical stability: Stable under recommended storage and usage conditions.
Possible hazardous reactions: No data available
Conditions to be avoided: No data available
Incompatible materials: Strong oxidizing agents
Hazardous decomposition products: Carbon oxides may be released in a fire.

SECTION 11 – TOXICOLOGICAL INFORMATION

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

Acute toxicity

Oral LD50: No data available
Inhalation LC50: No data available
Dermal LD50: No data available
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
Germ cell mutagenicity: No data available
Carcinogenicity: No data available
Reproductive toxicity: No data available
Teratogenicity: No data available

Carcinogenicity

NTP: not listed
IARC: not listed
OSHA: not listed

Safety Data Sheet

SECTION 12 – ECOLOGICAL INFORMATION

Ecotoxicity: No data available
Persistence/Degradability: No data available
Bioaccumulation Potential: No data available
Mobility in Soil: No data available. Expected to be mobile because it is an aqueous solution.

SECTION 13 – DISPOSAL CONSIDERATIONS

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.

SECTION 14 – TRANSPORT INFORMATION

UN number: N/A
Proper Shipping Name: None.
DOT: Non-hazardous for transport.
IMDG: Non-hazardous for transport.
IATA: Non-hazardous for transport.

SECTION 15 – REGULATORY INFORMATION

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 Minimis) reporting levels established by SARA Title III, Section 313.
SARA 311/312: Not a hazardous substance or mixture

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

Pennsylvania Right to Know Components:

| | | |
|--|-------------|-------------|
| L-Ascorbic Acid Phosphate Magnesium Salt | CAS number: | 113170-55-1 |
| Water | CAS number: | 7732-18-5 |

New Jersey Right to Know Components: No components are subject to New Jersey Right to Know Act.

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.

SECTION 16 – OTHER INFORMATION

Preparation information:

Prepared by: Quality Department
Date Prepared: January 22, 2015
Replaced Version date: July 30, 2012

Disclaimer: This information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of Lifeline Cell Technology. The data on this sheet relate only to the specific materials designated herein and shall only be used as a guide. Lifeline Cell Technology assumes no legal responsibility for the use or reliance upon these data.

Safety Data Sheet

LIFELINE CELL TECHNOLOGY SAFETY DATA SHEET

SECTION 1 – PRODUCT AND COMPANY INFORMATION

Product Name: rh EGF

Product Number: LS-1015

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

SECTION 2 – HAZARDS IDENTIFICATION

Hazardous Components: Not a hazardous substance or mixture

SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

| | | | |
|------------------------------|-----------------------|-------------|-----------|
| Principal Components: | recombinant human EGF | CAS number: | N/A |
| | Water | CAS number: | 7732-18-5 |

Composition: The item formulation is a mixture of recombinant human EGF (rh EGF), water and stabilizing agents. With the exception of purified water, all ingredients are in concentrations of less than 1%.

Synonym: Epidermal Growth Factor, Urogastrone, URG

SECTION 4 – FIRST AID MEASURES

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.

Safety Data Sheet

SECTION 5 – FIRE FIGHTING MEASURES

General Fire hazard: Product does not present any special fire hazard. Carbon oxides may be released in a fire.

Flash point: N/A

Extinguishing media: Use media appropriate for the material that is burning.

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

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal Precautions and Protective Equipment: Refer to section 8 for appropriate personal protection.

Environmental Precautions: No special environmental precautions are required.

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.

SECTION 7 – HANDLING AND STORAGE

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 -20°C or below. Protect from light.

SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure limits: Not listed on the OSHA Occupational Chemical database.

Engineering Controls: Eye wash stations are required.

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.

SECTION 9 – PHYSICAL / CHEMICAL PROPERTIES

Appearance: Frozen, clear liquid above ~0° C.

Upper/lower flammability or Explosive limits: No data available

Odor: Odorless

Vapor pressure: No data available

Odor threshold: No data available

Safety Data Sheet

Vapor density: No data available
pH: Neutral
Relative density: No data available
Freezing point: ~0° C
Solubility: Completely soluble in water
Boiling point: ~100° C
Flash point: No data available
Evaporation rate: No data available
Flammability: Not flammable
Upper/lower flammability or explosive limits: No data available
Relative density: ~1 at 20° C
Partition coefficient: n-octanol/water: No data available
Auto-ignition temperature: No data available
Viscosity: No data available

SECTION 10 – STABILITY AND REACTIVITY

Reactivity: No data available
Chemical stability: Stable under recommended storage and usage conditions.
Possible hazardous reactions: No data available
Conditions to be avoided: No data available
Incompatible materials: Strong oxidizing agents
Hazardous decomposition products: Carbon oxides may be released in a fire.

SECTION 11 – TOXICOLOGICAL INFORMATION

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

Acute toxicity

Oral LD50: No data available
Inhalation LC50: No data available
Dermal LD50: No data available
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
Germ cell mutagenicity: No data available
Carcinogenicity: No data available
Reproductive toxicity: No data available
Teratogenicity: No data available

Carcinogenicity

NTP: not listed
IARC: not listed
OSHA: not listed

Safety Data Sheet

SECTION 12 – ECOLOGICAL INFORMATION

Ecotoxicity: No data available
Persistence/Degradability: No data available
Bioaccumulation Potential: No data available
Mobility in Soil: No data available. Expected to be mobile because it is an aqueous solution.

SECTION 13 – DISPOSAL CONSIDERATIONS

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.

SECTION 14 – TRANSPORT INFORMATION

UN number: N/A
Proper Shipping Name: None.
DOT: Non-hazardous for transport.
IMDG: Non-hazardous for transport.
IATA: Non-hazardous for transport.

SECTION 15 – REGULATORY INFORMATION

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: Not a hazardous substance or mixture

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

New Jersey Right to Know Components: No components are subject to New Jersey Right to Know Act.

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.

SECTION 16 – OTHER INFORMATION

Preparation information:

Prepared by: Quality Department
Date Prepared: February 10, 2015
Replaced Version date: July 30, 2012

Disclaimer: This information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of Lifeline Cell Technology. The data on this sheet relate only to the specific materials designated herein and shall only be used as a guide. Lifeline Cell Technology assumes no legal responsibility for the use or reliance upon these data.

Safety Data Sheet

LIFELINE CELL TECHNOLOGY SAFETY DATA SHEET

SECTION 1 – PRODUCT AND COMPANY INFORMATION

Product Name: Heparin Sulfate

Product Number: LS-1017

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

SECTION 2 – HAZARDS IDENTIFICATION

Hazardous Components: Not a hazardous substance or mixture

SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

| | | | |
|------------------------------|-----------------------------|-------------|-----------|
| Principal Components: | Heparin Sulfate sodium salt | CAS number: | 9041-08-1 |
| | Water | CAS number: | 7732-18-5 |

Composition: The item formulation is a mixture of Heparin Sulfate sodium salt and water. With the exception of purified water, all ingredients are in concentrations of less than 1%.

Synonym: Heparin sodium, Hepsal, Lipo-Hepin, Liquemin, Longheparin, Monoparin, Panheparin, Pularin, Liquaemin Sodium, Minihep, Thromboliquine, Thrombophob, Unihep

SECTION 4 – FIRST AID MEASURES

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.

Safety Data Sheet

SECTION 5 – FIRE FIGHTING MEASURES

General Fire hazard: Product does not present any special fire hazard. Carbon oxides may be released in a fire.

Flash point: N/A

Extinguishing media: Use media appropriate for the material that is burning.

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

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal Precautions and Protective Equipment: Refer to section 8 for appropriate personal protection.

Environmental Precautions: No special environmental precautions are required.

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.

SECTION 7 – HANDLING AND STORAGE

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 -20°C or below. Protect from light.

SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure limits: Not listed on the OSHA Occupational Chemical database.

Engineering Controls: Eye wash stations are required.

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.

SECTION 9 – PHYSICAL / CHEMICAL PROPERTIES

Appearance: Frozen, clear liquid above ~0° C.

Upper/lower flammability or Explosive limits: No data available

Odor: Odorless

Vapor pressure: No data available

Odor threshold: No data available

Safety Data Sheet

Vapor density: No data available
pH: Neutral
Relative density: No data available
Freezing point: ~0° C
Solubility: Completely soluble in water
Boiling point: ~100° C
Flash point: No data available
Evaporation rate: No data available
Flammability: Not flammable
Upper/lower flammability or explosive limits: No data available
Relative density: ~1 at 20° C
Partition coefficient: n-octanol/water: No data available
Auto-ignition temperature: No data available
Viscosity: No data available

SECTION 10 – STABILITY AND REACTIVITY

Reactivity: No data available
Chemical stability: Stable under recommended storage and usage conditions.
Possible hazardous reactions: No data available
Conditions to be avoided: No data available
Incompatible materials: Strong oxidizing agents
Hazardous decomposition products: Carbon oxides may be released in a fire.

SECTION 11 – TOXICOLOGICAL INFORMATION

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

Acute toxicity

Oral LD50: No data available
Inhalation LC50: No data available
Dermal LD50: No data available
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
Germ cell mutagenicity: No data available
Carcinogenicity: No data available
Reproductive toxicity: No data available
Teratogenicity: No data available

Carcinogenicity

NTP: not listed
IARC: not listed
OSHA: not listed

Safety Data Sheet

SECTION 12 – ECOLOGICAL INFORMATION

Ecotoxicity: No data available
Persistence/Degradability: No data available
Bioaccumulation Potential: No data available
Mobility in Soil: No data available. Expected to be mobile because it is an aqueous solution.

SECTION 13 – DISPOSAL CONSIDERATIONS

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.

SECTION 14 – TRANSPORT INFORMATION

UN number: N/A
Proper Shipping Name: None.
DOT: Non-hazardous for transport.
IMDG: Non-hazardous for transport.
IATA: Non-hazardous for transport.

SECTION 15 – REGULATORY INFORMATION

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: Not a hazardous substance or mixture

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

New Jersey Right to Know Components: No components are subject to New Jersey Right to Know Act.

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.

SECTION 16 – OTHER INFORMATION

Preparation information:

Prepared by: Quality Department
Date Prepared: February 11, 2015
Replaced Version date: July 30, 2012

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Safety Data Sheet

LIFELINE CELL TECHNOLOGY SAFETY DATA SHEET

SECTION 1 – PRODUCT AND COMPANY INFORMATION

Product Name: FBS

Product Number: LS-1028

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

SECTION 2 – HAZARDS IDENTIFICATION

Hazardous Components: Not a hazardous substance or mixture

SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

Principal Components: Fetal Bovine Serum CAS number: N/A

Composition: The item formulation is 100% fetal bovine serum.

Synonym: Fetal Bovine Serum, Fetal Calf Serum, FCS

SECTION 4 – FIRST AID MEASURES

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.

Safety Data Sheet

SECTION 5 – FIRE FIGHTING MEASURES

General Fire hazard: Product does not present any special fire hazard. Carbon oxides may be released in a fire.

Flash point: N/A

Extinguishing media: Use media appropriate for the material that is burning.

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

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal Precautions and Protective Equipment: Refer to section 8 for appropriate personal protection.

Environmental Precautions: No special environmental precautions are required.

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.

SECTION 7 – HANDLING AND STORAGE

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 -20°C or below. Protect from light.

SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure limits: Not listed on the OSHA Occupational Chemical database.

Engineering Controls: Eye wash stations are required.

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.

SECTION 9 – PHYSICAL / CHEMICAL PROPERTIES

Appearance: Tan or straw colored, frozen 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

Safety Data Sheet

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

SECTION 10 – STABILITY AND REACTIVITY

Reactivity: No data available
Chemical stability: Stable under recommended storage and usage conditions.
Possible hazardous reactions: No data available
Conditions to be avoided: No data available
Incompatible materials: Strong oxidizing agents
Hazardous decomposition products: Carbon oxides may be released in a fire.

SECTION 11 – TOXICOLOGICAL INFORMATION

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

Acute toxicity

Oral LD50: No data available
Inhalation LC50: No data available
Dermal LD50: No data available
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
Germ cell mutagenicity: No data available
Carcinogenicity: No data available
Reproductive toxicity: No data available
Teratogenicity: No data available

Carcinogenicity

NTP: not listed
IARC: not listed
OSHA: not listed

Safety Data Sheet

SECTION 12 – ECOLOGICAL INFORMATION

Ecotoxicity: No data available
Persistence/Degradability: No data available
Bioaccumulation Potential: No data available
Mobility in Soil: No data available. Expected to be mobile in soil due to high solubility in water.

SECTION 13 – DISPOSAL CONSIDERATIONS

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.

SECTION 14 – TRANSPORT INFORMATION

UN number: N/A
Proper Shipping Name: None.
DOT: Non-hazardous for transport.
IMDG: Non-hazardous for transport.
IATA: Non-hazardous for transport.

SECTION 15 – REGULATORY INFORMATION

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: Not a hazardous substance or mixture

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

Pennsylvania Right to Know Components:
Fetal Bovine Serum CAS number: N/A

New Jersey Right to Know Components:
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.

Safety Data Sheet

SECTION 16 – OTHER INFORMATION

Preparation information:

Prepared by: Quality Department
Date Prepared: February 10, 2015
Replaced Version date: July 30, 2012

Disclaimer: This information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of Lifeline Cell Technology. The data on this sheet relate only to the specific materials designated herein and shall only be used as a guide. Lifeline Cell Technology assumes no legal responsibility for the use or reliance upon these data.

Safety Data Sheet

LIFELINE CELL TECHNOLOGY SAFETY DATA SHEET

SECTION 1 – PRODUCT AND COMPANY INFORMATION

Product Name: L-Glutamine [200 mM]
Product Number: LS-1013
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

SECTION 2 – HAZARDS IDENTIFICATION

Hazardous Components: Not a hazardous substance or mixture

SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

| | | | |
|------------------------------|-------------|-------------|-----------|
| Principal Components: | L-Glutamine | CAS number: | 58-85-9 |
| | Water | CAS number: | 7732-18-5 |

Composition: The item formulation is a solution of L-Glutamine and water. The solution contains 1-5% L-Glutamine in water.

Synonym: Glutamine, Levoglutamine, L-(+) Glutamine, Cebrogen, Glavamin, Stimulina

SECTION 4 – FIRST AID MEASURES

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.

Safety Data Sheet

SECTION 5 – FIRE FIGHTING MEASURES

General Fire hazard: Product does not present any special fire hazard. Carbon oxides may be released in a fire.

Flash point: N/A

Extinguishing media: Use media appropriate for the material that is burning.

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

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal Precautions and Protective Equipment: Refer to section 8 for appropriate personal protection.

Environmental Precautions: No special environmental precautions are required.

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.

SECTION 7 – HANDLING AND STORAGE

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 -20°C or below. Protect from light.

SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure limits: Not listed on the OSHA Occupational Chemical database.

Engineering Controls: Eye wash stations are required.

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.

SECTION 9 – PHYSICAL / CHEMICAL PROPERTIES

Appearance: Frozen, liquid with white precipitate above ~0° C, clear liquid above ~20° C.

Upper/lower flammability or Explosive limits: No data available

Odor: Odorless

Vapor pressure: No data available

Odor threshold: No data available

Safety Data Sheet

Vapor density: No data available
pH: No data available
Relative density: No data available
Freezing point: ~0° C
Solubility: Completely soluble in water
Boiling point: ~100° C
Flash point: No data available
Evaporation rate: No data available
Flammability: Not flammable
Upper/lower flammability or explosive limits: No data available
Relative density: No data available
Partition coefficient: n-octanol/water: No data available
Auto-ignition temperature: No data available
Viscosity: No data available

SECTION 10 – STABILITY AND REACTIVITY

Reactivity: No data available
Chemical stability: Stable under recommended storage and usage conditions.
Possible hazardous reactions: No data available
Conditions to be avoided: No data available
Incompatible materials: Strong oxidizing agents
Hazardous decomposition products: Carbon oxides may be released in a fire.

SECTION 11 – TOXICOLOGICAL INFORMATION

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

Acute toxicity

Oral LD50: No data available
Inhalation LC50: No data available
Dermal LD50: No data available
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
Germ cell mutagenicity: No data available
Carcinogenicity: No data available
Reproductive toxicity: No data available
Teratogenicity: No data available

Carcinogenicity

NTP: not listed
IARC: not listed
OSHA: not listed

Safety Data Sheet

SECTION 12 – ECOLOGICAL INFORMATION

Ecotoxicity: No data available
Persistence/Degradability: No data available
Bioaccumulation Potential: No data available
Mobility in Soil: No data available.

SECTION 13 – DISPOSAL CONSIDERATIONS

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.

SECTION 14 – TRANSPORT INFORMATION

UN number: N/A
Proper Shipping Name: None.
DOT: Non-hazardous for transport.
IMDG: Non-hazardous for transport.
IATA: Non-hazardous for transport.

SECTION 15 – REGULATORY INFORMATION

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 Minimis) reporting levels established by SARA Title III, Section 313.
SARA 311/312: Not a hazardous substance or mixture

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

Pennsylvania Right to Know Components:

| | | |
|-------------|-------------|-----------|
| L-Glutamine | CAS number: | 58-85-9 |
| Water | CAS number: | 7732-18-5 |

New Jersey Right to Know Components: No components are subject to New Jersey Right to Know Act.

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.

SECTION 16 – OTHER INFORMATION

Preparation information:

Prepared by: Quality Department
Date Prepared: January 23, 2015
Replaced Version date: July 30, 2012

Disclaimer: This information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of Lifeline Cell Technology. The data on this sheet relate only to the specific materials designated herein and shall only be used as a guide. Lifeline Cell Technology assumes no legal responsibility for the use or reliance upon these data.

Safety Data Sheet

LIFELINE CELL TECHNOLOGY SAFETY DATA SHEET

SECTION 1 – PRODUCT AND COMPANY INFORMATION

Product Name: Hydrocortisone Hemisuccinate

Product Number: LS-1007

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

SECTION 2 – HAZARDS IDENTIFICATION

Hazardous Components: Not a hazardous substance or mixture

SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

| | | | |
|------------------------------|------------------------------|-------------|-----------|
| Principal Components: | Hydrocortisone hemisuccinate | CAS number: | 125-04-2 |
| | Water | CAS number: | 7732-18-5 |

Composition: The item formulation is a vital corticosteroid hormone. With the exception of purified water, all ingredients are in concentrations of less than 1%.

Synonym: Hydrocortisone 21-Hemisuccinate Sodium, A-Hydrocort, Buccalsone, Corlan, Cortisol Hemisuccinate Sodium Salt, Cortisol 21-(Hydrogen Succinate), Cortisol Sodium Hemisuccinate, Cortisol Sodium Succinate, Cortisol 21-Sodium Succinate, EF-Cortelan Soluble, EMI-Corlan, Flebocortid, Hycorace, Hydrocortisone Sodium Succinate, Hydrocortisone 21-Sodium Succinate, Intracort, Nordicort, Oralsone, Sodium Hydrocortisone Succinate, Sodium Hydrocortisone 21-Succinate, Solucortef

SECTION 4 – FIRST AID MEASURES

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.

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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.

SECTION 5 – FIRE FIGHTING MEASURES

General Fire hazard: Product does not present any special fire hazard. Carbon oxides may be released in a fire.

Flash point: N/A

Extinguishing media: Use media appropriate for the material that is burning.

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

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal Precautions and Protective Equipment: Refer to section 8 for appropriate personal protection.

Environmental Precautions: No special environmental precautions are required.

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.

SECTION 7 – HANDLING AND STORAGE

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 -20°C or below. Protect from light.

SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure limits: Not listed on the OSHA Occupational Chemical database.

Engineering Controls: Eye wash stations are required.

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

Appearance: Frozen, clear liquid above ~0° C.

Upper/lower flammability or Explosive limits: No data available

Odor: Odorless

Vapor pressure: No data available

Odor threshold: No data available

Vapor density: No data available

pH: Neutral

Relative density: No data available

Freezing point: ~0° C

Solubility: Completely soluble in water

Boiling point: ~100° C

Flash point: No data available

Evaporation rate: No data available

Flammability: Not flammable

Upper/lower flammability or explosive limits: No data available

Relative density: ~1 at 20° C

Partition coefficient: n-octanol/water: No data available

Auto-ignition temperature: No data available

Viscosity: No data available

SECTION 10 – STABILITY AND REACTIVITY

Reactivity: No data available

Chemical stability: Stable under recommended storage and usage conditions.

Possible hazardous reactions: No data available

Conditions to be avoided: No data available

Incompatible materials: Strong oxidizing agents

Hazardous decomposition products: Carbon oxides may be released in a fire.

SECTION 11 – TOXICOLOGICAL INFORMATION

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

Acute toxicity

Oral LD50: No data available

Inhalation LC50: No data available

Dermal LD50: No data available

Other: LD50 intraperitoneal – rat - 1,320 mg/kg

Chronic toxicity: This product is a glucocorticoid. Repeated exposure can cause: damage to eyes, disturbances of electrolyte balance, osteoporosis and spontaneous fractures, hyperglycemia, delayed wound healing, increased liability to infection, acne, weight gain, emotional instability and neurological disturbances.

Skin corrosion: No data available

Eye damage: No data available

Sensitization (Respiration or Skin): No data available

Germ cell mutagenicity: No data available

Carcinogenicity: Some glucocorticoid show carcinogenic or teratogenetic activity.

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Reproductive toxicity: No data available

Teratogenicity: Some glucocorticoid show carcinogenic or teratogenic activity

Carcinogenicity

NTP: not listed

IARC: not listed

OSHA: not listed

SECTION 12 – ECOLOGICAL INFORMATION

Ecotoxicity: No data available

Persistence/Degradability: No data available

Bioaccumulation Potential: No data available

Mobility in Soil: No data available. Expected to be mobile because it is an aqueous solution.

SECTION 13 – DISPOSAL CONSIDERATIONS

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.

SECTION 14 – TRANSPORT INFORMATION

UN number: N/A

Proper Shipping Name: None.

DOT: Non-hazardous for transport.

IMDG: Non-hazardous for transport.

IATA: Non-hazardous for transport.

SECTION 15 – REGULATORY INFORMATION

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: Chronic health hazard

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

Pennsylvania Right to Know Components:

Hydrocortisone hemisuccinate CAS number: 125-04-2

Water CAS number: 7732-18-5

New Jersey Right to Know Components:

Hydrocortisone hemisuccinate CAS number: 125-04-2

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.

Safety Data Sheet

SECTION 16 – OTHER INFORMATION

Preparation information:

Prepared by: Quality Department
Date Prepared: January 19, 2015
Replaced Version date: July 30, 2012

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