**SAFETY DATA SHEET (SDS) TrailBio® Endothelial Cells**

## 1. Product and Company Identification

**Product Name**: TrailBio® Endothelial Cells
**Product Codes**: ME010101021
**Product Use**: For Research Use Only (RUO), Ultra-low temperature (-70$^{o}$ to -196$^{o}$C) storage of biological material
**Manufacturer**: Trailhead Biosystems Inc.
23215 Commerce Park Road, Beachwood, Ohio, 44122
**SDSs are available at the following website**: www.trailbio.com
**Company Phone Number**: 220-222-9142
**Emergency Telephone Number**: Medical Emergency (24 h): 1-800-222-1222
**Email**: sales@trailbio.com

## 2. Hazards Identification

**Classification**
**Routes of Entry**
Oral, Skin, Eyes
**Potential Health Effects**
**Eyes:** Irritation **Skin:** Mild Irritation **Ingestion:** Nausea **Inhalation:** Not Applicable
**Acute Health Hazards:**
Not Applicable
**Chronic Health Hazards:**
Not Applicable
**Medical Conditions Generally Aggravated by Exposure:**
Not known
**Carcinogenicity:**
None of the components at concentrations equal or greater than 0.1% are listed by NTP, IARC, or OSHA as a carcinogen. To the best of our knowledge, the chemical, physical, toxicological, and carcinogenic properties of DMSO have not been thoroughly investigated.
**Precautionary Statements**
**Prevention:**
Not applicable
**Response:**
Not applicable.
**Storage:**
Not applicable.
**Disposal:**
Not applicable.
**Hazards not otherwise classified (HNOC):**
Not classified.

## 3. Composition/Information on Ingredients

| Chemical Name | CAS No. | Weight % |
|---|---|---|
| Dimethyl Sulfoxide (DMSO) | 67-68-5 | 7-15%** |

**The exact percentage (concentration) of composition has been withheld as a trade secret.

## 4. First Aid Measures

**First aid measures for different exposure routes**

**General Advice:**

If symptoms persist call a physician.

**Eye Contact:**

Rinse thoroughly with running water for >10 minutes, also under the eyelids. Get medical attention if irritation persists.

**Skin Contact:**

Wash off immediately with soap and water. Get medical attention if irritation develops and persists.

**Inhalation:**

Move to fresh air. If symptoms persist, call a physician.

**Ingestion:**

Rinse mouth with water. Do NOT induce vomiting. If conscious, give water to drink. Never give anything by mouth to an unconscious person. Get medical advice/attention. Call a physician.

**Most important symptoms/effects, acute, and delayed**

None known.

**Indication of immediate medical attention and special treatment needed if necessary**

Treat symptomatically.

## 5. Fire-Fighting Measures

**Suitable Extinguishing Media**

Dry chemical, $CO_2$, alcohol-resistant foam, or water spray.

**Unsuitable Extinguishing Media**

None known.

**Specific hazards arising from the chemical**

None known.

**Hazardous Combustion Products**

None known.

**Explosion Data**

**Sensitivity to Mechanical Impact:**

None known.

**Sensitivity to Static Discharge:**

None known.

**Protective Equipment and Precautions for Firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approval or equivalent) and full protective gear.

## 6. Accidental Release Measures

**Personal precautions, protective equipment, and emergency procedures**

Use personal protective equipment. Avoid contact with skin, eyes, or clothing.

**Environmental precautions**

Prevent product from entering drains.

**Methods and materials for containment and cleaning up**

**Methods for Containment:** Prevent further leakage or spillage if safe to do so.

**Methods for Cleaning Up:** Use personal protective equipment. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers. Clean contaminated surface thoroughly. After cleaning, flush away traces with water.

## 7. Handling and Storage

**Precautions for safe handling**

Wear personal protective equipment. Avoid contact with skin, eyes, or clothing. Avoid breathing vapors or mists. Ensure adequate ventilation.

**Conditions for safe storage, including any incompatibilities**

Keep container tightly closed in a dry and well-ventilated place. Keep in properly labeled container.

## 8. Exposure Controls/Personal Protection

**Control parameters**

**Exposure Guidelines:**

| Chemical Name | ACGIH TLV | OSHA PEL | NIOSH IDLH | AIHA - Workplace Environmental Exposure Levels (WEELs) - TWAs |
|---|---|---|---|---|
| Dimethyl Sulfoxide (DMSO) | | | | 250 ppm TWA |

**Exposure controls**

**Engineering Measures:**

Ventilation systems

**Individual protection measures, such as personal protective equipment**

**Eye/face protection:** If splashes are likely to occur, wear safety glasses with side-shields or full splash goggles.

**Skin and body protection:** Wear protective gloves/clothing. A disposable lab coat is suggested.

**Respiratory protection:** None required under normal usage. If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn.

**General Hygiene Considerations:** When using, do not eat, drink, or smoke. Take off contaminated clothing and wash before reuse. Regular cleaning of equipment, work area, and clothing is recommended.

## 9. Physical and Chemical Properties

**Appearance**: Colorless

**Odor Threshold**: Not available

**pH**: Not available

**Specific Gravity**: Not available

**Flash Point**: Not available
**Decomposition temperature**: Not available
**Melting point/melting range**: Approximately 24.8 °F or -4 °C
**Flammability Limit in Air**: Not available
**Oxidizing Properties**: Not available
**Solubility**: Soluble in water
**Evaporation Rate**: Not available
**Vapor Density**: Not available
**VOC (lb/gal)**: None
**Dynamic Viscosity**: Not available
**Odor**: Slight
**Physical State at 20 deg C**: Liquid
**Molecular Weight**: Not available
**Autoignition temperature**: Not available
**Boiling point/boiling range**: Not available
**Freezing Point**: 24.8 °F or –4 °C
**Explosive properties**: Not available
**Partition Coefficient**: Not available
**Vapor Pressure**: Not available
**Density**: Not available
**VOC (g/L)**: None

## 10. Stability and Reactivity

**Reactivity**
Stable under recommended storage conditions.
**Chemical Stability**
Stable under recommended storage conditions.
**Possibility of hazardous reactions**
None under normal processing.
**Conditions to avoid**
Excessive heat. Freezing.
**Incompatible Materials**
Strong oxidizing agents, strong acids, strong bases, and acid chlorides.
**Hazardous Decomposition Products**
None known.

## 11. Toxicological Information

**Information on likely routes of administration** **Product Information**
**Acute toxicity**

| | |
|---|---|
| **Inhalation:** | Non-irritating during normal use. |
| **Eyes:** | Non-irritating during normal use. |
| **Skin:** | Non-irritating during normal use. |
| **Ingestion:** | Non-irritating during normal use. |

**Component Information**

| Chemical Name | Oral LD50 | Dermal LD50 | LC50 (lethal concentration) |
|---|---|---|---|
| Dimethyl Sulfoxide (DMSO) | 28300 mg/kg (rat) | 40 g/kg (rat) | > 5.33 mg/L (rat) 4 h |

**Information on toxicological effects**

No information available.

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

**Irritation:** Mild skin irritant.
**Corrosivity:** No information available.
**Sensitization:** No information available.
**Mutagenic Effects:** No information available.
**Reproductive Toxicity:** No information available.
**Carcinogenicity:** None known.
**STOT – single exposure:** No information available.
**STOT – repeated exposure:** No information available.
**Target Organ Effects:** Skin.
**Aspiration hazard:** No information available.

**Numerical measures of toxicity – Product Information**

**ATEmix (oral):** >5000 mg/kg
**ATEmix (dermal):** >5000 mg/kg
***ATE: acute toxicity estimate**

## 12. Ecological Information

**Ecotoxicity**

The environmental impact of this product has not been fully investigated.

| Chemical Name | Algae Toxicity | Toxicity to Fish | Toxicity to Microorganisms | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|---|
| Dimethyl Sulfoxide (DMSO) | | Pimephales promelas: 34000 mg/L at 96 h | | |

**Persistence and degradability**

No information available.

**Bioaccumulation**

| Chemical Name | Octanol Water Partition Coefficient (log pow) |
|---|---|
| Dimethyl Sulfoxide (DMSO) | -2.03 |

**Mobility**
No information available.
**Other adverse effects**
No information available.

## 13. Disposal Consideration

**Waste disposal methods**
Dispose of in accordance with local regulations.
**Contaminated packaging**
Do not re-use empty containers.

## 14. Transport Information

| | |
|---|---|
| **DOT**: | Not regulated. |
| **TDG**: | Not regulated. |
| **MEX**: | Not regulated. |
| **ICAO**: | Not regulated. |
| **IATA**: | Not regulated. |
| **IMDG**: | Not regulated. |
| **ADR/RID**: | Not regulated. |
| **ADN**: | Not regulated. |

## 15. Regulatory Information

**International Inventories**

| | |
|---|---|
| **TSCA:** | Yes |
| **DSL/NDSL:** | Yes |
| **PICCS:** | Yes |
| **EINECS/ELINCS:** | Yes |
| **ENCS:** | Yes |
| **IECSC:** | Yes |
| **KECL:** | Yes |
| **AICS:** | Yes |

***Yes – All component(s) of this product are included or are exempt from listing on the inventory. *No – Indicated the component(s) of this product are either not listed or have not been determined to be listed on the inventory.**
**TSCA** – United States Toxic Substances Control Act Section 8(b) Inventory
**DSL/NDSL** – Canadian Domestic Substances List/Non-Domestic Substances List
**EINECS/ELINCS** – European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
**ENCS** – Japan Existing and New Chemical Substances
**IECSC** – China Inventory of Existing Chemical Substances
**KECL** – Korean Existing and Evaluated Chemical Substances
**PICCS** – Philippines Inventory of Chemical and Chemical Substances
**AICS** – Australian Inventory of Chemical Substances

**U.S. Federal Regulations** **TSCA Sections 4, 5, and 12(b)**

This product does not contain any chemicals regulated by TSCA Sections 4, 5, or 12(b) **SARA13**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372. **SARA 311/312 Hazard Categories**

Classification is shown in section 2 of this SDS

**Clean Water Act**

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

**CERCLA**

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material. **US State Regulations**

**California Proposition 65**

This product does not contain any Proposition 65 chemicals **US State Right to Know Regulations**

| Chemical Name | Massachusetts | New Jersey | Pennsylvania | Illinois | Rhode Island |
|---|---|---|---|---|---|
| Dimethyl Sulfoxide (DMSO) | | X | | | |

**International Regulations** **Canada – NDSL**

This product does not contain any NDSL chemicals.

**Mexico – Grade**

No information available.

**Mexico – Carcinogen Status and Exposure Limits**

No information available.

**Other Regulations**

No information available.

## 16. Other Information

| | Health Hazard | Flammability | Instability | Physical Hazard | Personal protection |
|---|---|---|---|---|---|
| **NFPA** | 1 | 1 | 0 | - | - |
| **HMIS** | 1 | 1 | - | 0 | B |

**Prepared By** Trailhead Biosystems
**Preparation Date** 2026-04-21
**Revision Date** 2026-04-21
**Revision Note** No information available.

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

**END**

**SAFETY DATA SHEET (SDS)**
**TrailBio® Basal Medium F**

## 1. Product and Company Identification

**Product Name**: TrailBio® Basal Medium F
**Product Codes**: TB73279
**Product Use**: For Research Use Only (RUO).
**Manufacturer**: Trailhead Biosystems Inc.
23215 Commerce Park Road, Beachwood, Ohio, 44122
**SDSs are available at the following website**: www.trailbio.com
**Company Phone Number**: 216-490-3304
**Emergency Telephone Number**: Medical Emergency (24 h): 1-800-222-1222
**Email**: support@trailbio.com

## 2. Hazards Identification

**Classification**
This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

**Hazards not otherwise classified (HNOC)**
Not applicable.

**GHS Label elements, including precautionary statements:**
Not classified.

**Precautionary Statements**
**Prevention**
Not applicable.
**Response**
Not applicable.
**Storage**
Not applicable.
**Disposal**
Not applicable.

## 3. Composition/Information on Ingredients

**Substance**
Not applicable

**Mixture**
Not a hazardous substance or mixture according to the Globally Harmonized System (GHS)
No component of this product is present at a concentration that meets the criteria for classification as a health or physical hazard under 29 CFR 1910.1200. The identities and exact percentages (concentrations) of composition have been withheld as a trade secret.

## 4. First Aid Measures

**First aid measures for different exposure routes:**
**General Advice**
If symptoms persist call a physician.
**Eye Contact**

Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

**Skin Contact**

Wash off immediately with plenty of water. Get medical attention if irritation develops and persists.

**Inhalation**

Move to fresh air. If symptoms persist, call a physician.

**Ingestion**

Clean mouth with water and drink afterwards plenty of water.

**Most important symptoms/effects, acute, and delayed**

None known.

**Indication of immediate medical attention and special treatment needed if necessary**

Treat symptomatically.

## 5. Fire-Fighting Measures

**Suitable Extinguishing Media:**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Unsuitable Extinguishing Media:**

None known.

**Specific hazards arising from the chemical:**

Non-combustible. Development of hazardous combustion gases or vapors is possible in the event of fire.

**Hazardous Combustion Products:**

Carbon oxides, nitrogen oxides (NOx), sulphur oxides, oxides of phosphorus, hydrogen chloride gas, and metal oxides of sodium, potassium, magnesium, calcium, iron, zinc, copper, manganese, molybdenum, selenium, vanadium, cobalt, and nickel.

**Explosion Data**

**Sensitivity to Mechanical Impact**

None

**Sensitivity to Static Discharge**

None

**Protective Equipment and Precautions for Firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approval or equivalent) and full protective gear.

## 6. Accidental Release Measures

**Personal precautions, protective equipment, and emergency procedures**

Use personal protective equipment. Avoid contact with skin, eyes, or clothing.

**Environmental precautions**

Prevent product from entering drains.

**Methods and materials for containment and cleaning up**

| | |
|---|---|
| **Methods for Containment** | Prevent further leakage or spillage if safe to do so. |
| **Methods for Cleaning Up** | Use personal protective equipment. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers. Clean contaminated surface thoroughly. After cleaning, flush away traces with water. |

## 7. Handling and Storage

**Precautions for safe handling**

Wear personal protective equipment. Avoid contact with skin, eyes, or clothing. Avoid breathing vapors or mists. Ensure adequate ventilation. Handle using aseptic technique in a biological safety cabinet appropriate to the cells being cultured.

**Conditions for safe storage, including any incompatibilities**

Store at 2 – 8 °C. Do not freeze. Keep container tightly closed and in a properly labeled container. No known incompatible materials. Refer to the product label and Certificate of Analysis for the assigned expiration date.

## 8. Exposure Controls/Personal Protection

**Control parameters**

| | |
|---|---|
| **Exposure Guidelines** | This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies |

**Exposure controls**

**Engineering Measures**

Ventilation systems
Showers
Eyewash Stations

**Individual protection measures, such as personal protective equipment**

| | |
|---|---|
| **Eye/face protection** | No special protective equipment required. |
| **Skin and body protection** | No special protective equipment required. |
| **Respiratory protection** | No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required. |
| **General Hygiene Considerations** | Handle in accordance with good industrial hygiene and safety practice. |

## 9. Physical and Chemical Properties

**Appearance**: Clear liquid, colorless to pale straw
**Odor**: Slight
**Odor Threshold**: Not available
**pH**: 7.5-8.1
**Physical State at 20 deg C**: Liquid
**Specific Gravity**: Not available
**Density**: Not available
**Solubility**: Miscible with water
**Partition Coefficient**: Not available
**Melting point/melting range**: Not applicable (liquid)
**Freezing Point**: Not available
**Boiling point/boiling range**: Not available
**Flash Point**: Not applicable (aqueous)
**Flammability Limit in Air**: Not applicable
**Autoignition temperature**: Not applicable
**Decomposition temperature**: Not available
**Evaporation Rate**: Not available

**Vapor Pressure**: Not available
**Vapor Density**: Not available
**Dynamic Viscosity**: Not available
**Oxidizing Properties**: Not available
**Explosive properties**: Not available
**Molecular Weight**: Not applicable (mixture)
**VOC (lb/gal)**: None
**VOC (g/L)**: None

## 10. Stability and Reactivity

**Reactivity**
No data available.

**Chemical Stability**
Stable under recommended storage conditions.

**Possibility of hazardous reactions**
No data available.

**Conditions to avoid**
Excessive heat. Freezing.

**Incompatible Materials**
Strong oxidizing agents.

**Hazardous Decomposition Products**
None known under recommended storage and handling conditions. For hazardous combustion products in the event of fire, see Section 5.

## 11. Toxicological Information

**Information on likely routes of administration**
**Product Information**
**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Unknown |
| **Eyes** | Unknown |
| **Skin** | Unknown |
| **Ingestion** | Unknown |

**Component Information**
No component is classified for acute toxicity. Toxicological data are not available for the mixture as supplied.

**Information on toxicological effects**
No information available.

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

| | |
|---|---|
| **Irritation** | No information available. |
| **Corrosivity** | No information available. |
| **Sensitization** | No information available. |
| **Mutagenic Effects** | No information available. |
| **Reproductive Toxicity** | No information available. |
| **Carcinogenicity** | None known. No component present at 0.1% or greater is listed by NTP, IARC, or OSHA as a carcinogen. |
| **STOT – single exposure** | No information available. |

| | |
|---|---|
| **STOT – repeated exposure** | No information available. |
| **Target Organ Effects** | None known. |
| **Aspiration hazard** | No information available. |

**Numerical measures of toxicity – Product Information**

| | |
|---|---|
| **ATEmix (oral)** | Not established. See note below. |
| **ATEmix (dermal)** | Not established. See note below. |

**ATE: acute toxicity estimate.**

## 12. Ecological Information

**Ecotoxicity**

The environmental impact of this product has not been fully investigated.

**Persistence and degradability**

No information available.

**Bioaccumulation**

There is no data for this product.

**Mobility**

No information available.

**Other adverse effects**

No information available.

**Endocrine Disrupting Properties**

No data available.

**Additional Ecological Information**

Discharge into the environment must be avoided.

## 13. Disposal Considerations

**Waste disposal methods**

Dispose of in accordance with local regulations. Material that has been in contact with cells or other biological material should be decontaminated and disposed of as biological waste in accordance with institutional procedures.

**Contaminated packaging**

Do not re-use empty containers.

## 14. Transport Information

| | |
|---|---|
| **DOT**: | Not regulated. |
| **TDG**: | Not regulated. |
| **MEX**: | Not regulated. |
| **ICAO**: | Not regulated. |
| **IATA**: | Not regulated. |
| **IMDG**: | Not regulated. |
| **ADR/RID**: | Not regulated. |
| **ADN**: | Not regulated. |

Not regulated as dangerous goods.

## 15. Regulatory Information

**International Inventories**

US TSCA: This product contains substance(s) not listed on the TSCA inventory.
DSL/NDSL, EINECS/ELINCS, ENCS, IECSC, KECL, PICCS, AICS: Not determined.

**U.S. Federal Regulations**

**TSCA Sections 4, 5, and 12(b)**

No substances are subject to a Significant New Use Rule. No substances are subject to TSCA Section 12(b) export notification requirements.

**SARA 313**

This product does not contain any chemical components with known CAS numbers that exceed the de minimis reporting thresholds established by SARA Title III, Section 313.

**SARA 311/312 Hazard Categories**

Not applicable. This product is not classified as a physical or health hazard under 29 CFR 1910.1200 (see Section 2); no component is present at a concentration meeting the classification criteria for a health hazard category

**CERCLA**

Listed substances present in this product are at low enough levels that they are not expected to exceed a reportable quantity. There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

**Clean Water Act**

This product does not contain toxic pollutants listed under Clean Water Act Section 307, and does not contain priority pollutants related to the Clean Water Act.

**US State Regulations**

**California Proposition 65**

WARNING: This product can expose you to chemicals including nickel(II) chloride hexahydrate, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

**US State Right to Know Regulations**

The following are present as constituents of this product:
Massachusetts Right To Know: sodium chloride (7647-14-5); sodium selenite (10102-18-8)
Pennsylvania Right To Know: disodium hydrogen orthophosphate (7558-79-4)

**International Regulations**

Canada, Mexico, and other jurisdictions: Not determined.

## 16. Other Information

| | Health Hazard | Flammability | Instability | Physical Hazard | Personal protection |
|---|---|---|---|---|---|
| **NFPA** | 0 | 0 | 0 | - | - |
| **HMIS** | 0 | 0 | - | 0 | A |

| | |
|---|---|
| **Animal Origin** | No component of animal origin is intentionally added to this product. |
| **Prepared By** | Trailhead Biosystems |
| **Preparation Date** | 2026-09-14 |
| **Revision Date** | NA |
| **Revision Note** | Initial issue. |

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

**END**

**SAFETY DATA SHEET (SDS)**
**TrailBio® Endothelial Expansion Supplement**

## 1. Product and Company Identification

**Product Name**: TrailBio Endothelial Expansion Supplement
**Product Codes**: TB03489
**Product Use**: For Research Use Only (RUO)
**Manufacturer**: Trailhead Biosystems Inc.
23215 Commerce Park Road, Beachwood, Ohio, 44122
**SDSs are available at the following website**: www.trailbio.com
**Company Phone Number**: 216-490-3304
**Emergency Telephone Number**: Medical Emergency (24 h): 1-800-222-1222
**Email**: support@trailbio.com

## 2. Hazards Identification

**Classification**
This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

**Hazards not otherwise classified (HNOC)**
This product contains a component of bovine origin. Handle using aseptic technique and good industrial hygiene practice. Proteins of animal origin may provoke a response in individuals already sensitized to them. See Section 16.

**GHS Label elements, including precautionary statements:**
Not classified.

**Precautionary Statements**
**Prevention**
Not applicable.
**Response**
Not applicable.
**Storage**
Not applicable.
**Disposal**
Not applicable.

## 3. Composition/Information on Ingredients

**Substance**
Not applicable

**Mixture**
Not a hazardous substance or mixture according to the Globally Harmonized System (GHS)

**The exact percentage (concentration) of composition has been withheld as a trade secret.
No component of this product is present at a concentration that meets the criteria for classification as a health or physical hazard under 29 CFR 1910.1200.

## 4. First Aid Measures

**First aid measures for different exposure routes:**

**General Advice**
If symptoms persist call a physician.
**Eye Contact**
Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.
**Skin Contact**
Wash off immediately with plenty of water. Get medical attention if irritation develops and persists.
**Inhalation**
Move to fresh air. If symptoms persist, call a physician.
**Ingestion**
Clean mouth with water and drink afterwards plenty of water. Consult a physician.

**Most important symptoms/effects, acute, and delayed**
None known.

**Indication of immediate medical attention and special treatment needed if necessary**
Treat symptomatically.

## 5. Fire-Fighting Measures

**Suitable Extinguishing Media:**
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Unsuitable Extinguishing Media:**
None known.

**Specific hazards arising from the chemical:**
None known.

**Hazardous Combustion Products:**
None known.

**Explosion Data**
**Sensitivity to Mechanical Impact**
None
**Sensitivity to Static Discharge**
None

**Protective Equipment and Precautions for Firefighters**
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approval or equivalent) and full protective gear.

## 6. Accidental Release Measures

**Personal precautions, protective equipment, and emergency procedures**
Use personal protective equipment. Avoid contact with skin, eyes, or clothing.

**Environmental precautions**
Prevent product from entering drains.

**Methods and materials for containment and cleaning up**

| | |
|---|---|
| **Methods for Containment** | Prevent further leakage or spillage if safe to do so. |
| **Methods for Cleaning Up** | Use personal protective equipment. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers. Clean contaminated surface thoroughly. After cleaning, flush away traces with water. |

## 7. Handling and Storage

**Precautions for safe handling**

Wear personal protective equipment. Avoid contact with skin, eyes, or clothing. Avoid breathing vapors or mists. Ensure adequate ventilation. Handle using aseptic technique in a biological safety cabinet appropriate to the cells being cultured.

**Conditions for safe storage, including any incompatibilities**

Store at -20 °C. Keep container tightly closed and in a properly labeled container. No known incompatible materials. Refer to the product label and Certificate of Analysis for the assigned expiration date.

## 8. Exposure Controls/Personal Protection

**Control parameters**

| | |
|---|---|
| **Exposure Guidelines** | This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies |

**Exposure controls**

**Engineering Measures**

Ventilation systems
Showers
Eyewash Stations

**Individual protection measures, such as personal protective equipment**

| | |
|---|---|
| **Eye/face protection** | No special protective equipment required. |
| **Skin and body protection** | No special protective equipment required. |
| **Respiratory protection** | No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required. |
| **General Hygiene Considerations** | Handle in accordance with good industrial hygiene and safety practice. |

## 9. Physical and Chemical Properties

**Appearance**: Clear liquid, colorless to pale straw
**Odor**: Slight
**Odor Threshold**: Not available
**pH**: Not available
**Physical State at 20 deg C**: Liquid
**Specific Gravity**: Not available
**Density**: Not available
**Solubility**: Miscible with water
**Partition Coefficient**: Not available
**Melting point/melting range**: Not applicable (liquid)
**Freezing Point**: Not available
**Boiling point/boiling range**: Not available
**Flash Point**: Not applicable (aqueous)
**Flammability Limit in Air**: Not applicable
**Autoignition temperature**: Not applicable
**Decomposition temperature**: Not available
**Evaporation Rate**: Not available

**Vapor Pressure**: Not available
**Vapor Density**: Not available
**Dynamic Viscosity**: Not available
**Oxidizing Properties**: Not available
**Explosive properties**: Not available
**Molecular Weight**: Not applicable
**VOC (lb/gal)**: None
**VOC (g/L)**: None

## 10. Stability and Reactivity

**Reactivity**
Stable under recommended storage conditions.

**Chemical Stability**
Stable under recommended storage conditions.

**Possibility of hazardous reactions**
None under normal processing.

**Conditions to avoid**
Excessive heat. Freezing. Prolonged exposure to light.

**Incompatible Materials**
Strong oxidizing agents, strong acids, strong bases, and acid chlorides.

**Hazardous Decomposition Products**
None known.

## 11. Toxicological Information

**Information on likely routes of administration**

**Product Information**

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Unknown |
| **Eyes** | Unknown |
| **Skin** | Unknown |
| **Ingestion** | Unknown |

**Component Information**
No component is classified for acute toxicity. Toxicological data are not available for the mixture as supplied.

**Information on toxicological effects**
No information available.

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

| | |
|---|---|
| **Irritation** | No information available. |
| **Corrosivity** | No information available. |
| **Sensitization** | No information available. Contains protein of bovine origin; see Section 2. |
| **Mutagenic Effects** | No information available. |
| **Reproductive Toxicity** | No information available. |
| **Carcinogenicity** | None known. No component present at 0.1% or greater is listed by NTP, IARC, or OSHA as a carcinogen. |
| **STOT – single exposure** | No information available. |

| | |
|---|---|
| **STOT – repeated exposure** | No information available. |
| **Target Organ Effects** | None known. |
| **Aspiration hazard** | No information available. |

**Numerical measures of toxicity – Product Information**

| | |
|---|---|
| **ATEmix (oral)** | >5000 mg/kg |
| **ATEmix (dermal)** | >5000 mg/kg |

**ATE: acute toxicity estimate**

## 12. Ecological Information

**Ecotoxicity**

The environmental impact of this product has not been fully investigated.

**Persistence and degradability**

No information available.

**Bioaccumulation**

There is no data for this product.

**Mobility**

No information available.

**Other adverse effects**

No information available.

## 13. Disposal Considerations

**Waste disposal methods**

Dispose of in accordance with local regulations. Material that has been in contact with cells or other biological material should be decontaminated and disposed of as biological waste in accordance with institutional procedures.

**Contaminated packaging**

Do not re-use empty containers.

## 14. Transport Information

| | |
|---|---|
| **DOT**: | Not regulated. |
| **TDG**: | Not regulated. |
| **MEX**: | Not regulated. |
| **ICAO**: | Not regulated. |
| **IATA**: | Not regulated. |
| **IMDG**: | Not regulated. |
| **ADR/RID**: | Not regulated. |
| **ADN**: | Not regulated. |

Not regulated as dangerous goods. This product contains material of bovine origin; import permits, veterinary certification, or country-of-origin documentation may be required for international shipment.

## 15. Regulatory Information

**International Inventories**

US TSCA: This product contains substance(s) not listed on the TSCA inventory.
DSL/NDSL, EINECS/ELINCS, ENCS, IECSC, KECL, PICCS, AICS: Not determined.

**U.S. Federal Regulations**

**TSCA Sections 4, 5, and 12(b)**

This product does not contain any chemicals regulated by TSCA Sections 4, 5, or 12(b)

**SARA 313**

This product does not contain any chemical components with known CAS numbers that exceed the de minimis reporting thresholds established by SARA Title III, Section 313.

**SARA 311/312 Hazard Categories**

Acute Health Hazard; Chronic Health Hazard.

**Clean Water Act**

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

**CERCLA**

Listed substances present in this product are at low enough levels that they are not expected to exceed a reportable quantity. There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

**US State Regulations**

**California Proposition 65**

WARNING: This product can expose you to chemicals including nickel(II) chloride hexahydrate, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

**US State Right to Know Regulations**

The following are present as constituents of this product:
Massachusetts Right To Know: sodium chloride (7647-14-5); sodium selenite (10102-18-8)
Pennsylvania Right To Know: disodium hydrogen orthophosphate (7558-79-4)

**International Regulations**

**Canada – NDSL**

No information available

**Mexico – Grade**

No information available.

**Mexico – Carcinogen Status and Exposure Limits**

No information available.

**Other Regulations**

No information available.

## 16. Other Information

| | Health Hazard | Flammability | Instability | Physical Hazard | Personal protection |
|---|---|---|---|---|---|
| **NFPA** | 0 | 0 | 0 | - | - |
| **HMIS** | 0 | 0 | - | 0 | A |

**Biological Source** This product contains bovine serum albumin. Country of origin and supplier documentation supporting the absence of transmissible spongiform encephalopathy (TSE/BSE) risk are

| | |
|---|---|
| | available on request. The albumin supplier classifies that material as not hazardous and states that it contains no Proposition 65 chemicals; the Proposition 65 statement in Section 15 does not arise from this component. |
| **Prepared By** | Trailhead Biosystems |
| **Preparation Date** | 2026-09-14 |
| **Revision Date** | N/A |
| **Revision Note** | Initial issue. |
| **Disclaimer** | The information provided in this Safety Data Sheet (SDS) is correct to the best of our knowledge. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal, and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. |

**END**