



## 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° to -196°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](http://www.trailbio.com)

**Company Phone Number:** 220-222-9142

**Emergency Telephone Number:** Medical Emergency (24 h): 1-800-222-1222

**Email:** [sales@trailbio.com](mailto: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<sub>2</sub>, 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

<b>Inhalation:</b>	Non-irritating during normal use.
<b>Eyes:</b>	Non-irritating during normal use.
<b>Skin:</b>	Non-irritating during normal use.
<b>Ingestion:</b>	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

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

<b>DOT:</b>	Not regulated.
<b>TDG:</b>	Not regulated.
<b>MEX:</b>	Not regulated.
<b>ICAO:</b>	Not regulated.
<b>IATA:</b>	Not regulated.
<b>IMDG:</b>	Not regulated.
<b>ADR/RID:</b>	Not regulated.
<b>ADN:</b>	Not regulated.

**15. Regulatory Information****International Inventories**

<b>TSCA:</b>	Yes
<b>DSL/NDSL:</b>	Yes
<b>PICCS:</b>	Yes
<b>EINECS/ELINCS:</b>	Yes
<b>ENCS:</b>	Yes
<b>IECSC:</b>	Yes
<b>KECL:</b>	Yes
<b>AICS:</b>	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.

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